

Preface

The IWSG 2018 - 10th International Workshop on Science Gateways was held in the Informatics Forum of Edinburgh University from 13th to 15th June 2018. It brought together 68 researchers, scientists and developers from diverse research domains. It hosted a software sustainability boot camp and three co-located events, bringing together more than 75 science-gateway enthusiasts from 14 countries.

Science gateways, Virtual Research Environments (VREs) and e-Laboratories / Virtual Labs (VLs) are sets of tools, applications, and data collections that are well integrated via a web portal or an app, providing convenient and consistent access to distributed resources, services, data and instruments. Invariably, they are tailored to support well the work of an identified target community. They extend the power of research infrastructures and encourage wider engagement. They improve usability, automate routine tasks and offer ramps that enable users to progress to more sophisticated scientific methods. As a result, they increase the use of advanced methods exploiting today's growing data resources and sophisticated data-science algorithms. They are enabled by computational and data platforms, clouds and e-Infrastructures. The complexity of the underlying infrastructure is hidden from end-users by carefully crafted interfaces, abstractions and automated mappings. These mappings reflect users' intentions and retain that semantic interpretation as the underlying platforms and accessed resources evolve. The benefits science gateways deliver increases dramatically as the wealth and diversity of data grows. They combine to enable new strategies for tackling deep science, sophisticated engineering and global challenges. For this they need to foster collaboration among globally dispersed communities, spanning multiple disciplines and levels of experience. They need to encourage the creation and sustained maintenance of information-sharing federations appropriate for the new challenges. They provide stability for established practices and well-polished methods. Simultaneously, they stimulate invention and new solutions by exposing new power in understandable and controllable ways.

The workshop included four keynotes (including one from a co-organiser of the first event in this series, Jano van Hemert, now leading research at Optos), 14 full papers reproduced in this issue, 21 short presentations and two discussions. It showed intense engagement in a very wide range of research issues pertinent to science gateways including standardisation ideas. Reports on operational systems, showed their significant benefits for their growing communities. The rapid advances in computational provision, the growing wealth of available data for every discipline, and the complexity of the challenges facing global societies combine to increase the need for improved and sustained science gateways. This motivates a continued investment in the underlying R&D as well as in the socio-economic challenges of expanding their use and adoption. We believe that the IWSG series will continue as a crucial venue for those engaged in those urgent science-gateways campaigns¹. A fitting conclusion from a ten-year celebration.

The editors: Malcolm Atkinson and Sandra Gesing

For further information please visit the workshop website at:
<https://sites.google.com/a/nd.edu/iwsg2018/home>

¹ <http://www.iwsg2019.eu/>

Organisation

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IWSG 2018's programme committee deserve a big thank you for recruiting papers, reviewing papers, shaping the programme, recruiting participants and in most cases for being actively engaged at the event. They were:

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