Welcome to the Proceedings of the 9th International Conference on Semantic Web Applications and Tools for the Life Sciences (SWAT4LS 2016)

Preface

It is our great pleasure to welcome you to the 9th International Conference on Semantic Web Applications and Tools for Life Sciences (SWAT4LS 2016). SWAT4LS is an international conference to meet and to present high-quality research results and relevant demos, applications and tutorials from all fields of Semantic Data Science and Web technologies in Health Care and Life Sciences.

The objectives of the SWAT4LS conference are to provide a forum dedicated to the dissemination of original research, the discussion of practical insights, and the reporting on relevant experience relating to the adoption of Web based information systems and Semantic technologies in biomedical informatics and computational biology. The conference also aims at providing a forum to exchange ideas, for example, through poster papers and demo papers.

SWAT4LS 2016 was held at The Netherlands Cancer Institute (NKI), December 5-8, 2016, Amsterdam, The Netherlands.

The call for papers solicited research contributions in eHealth, biomedical and clinical informatics, systems biology, computational biology, drug discovery, bioinformatics and biocomputing. The call for contributions attracted 47 submissions from around the globe. The technical program shows a carefully selected presentation of research and development in 13 full papers, 6 short talks, 17 poster and demo presentations and 2 industrial talks. These were complemented by 3 keynote talks and 5 tutorials provided by:

Keynote talks:
- **Semantics driven big data analytics: Ongoing work for cancer genomics**, by *Dietrich Rebholz-Schuhmann*, Insight Centre for Data Analytics;
- **Transitioning from textual to semantic biocuration, current efforts and perspectives**, by *Amos Bairoch*, Swiss Institute of Bioinformatics;
- **BioMedical Semantics at Work: The AETIONOMY Project** by *Martin Hofmann-Apitius*, Fraunhofer Institute for Algorithms and Scientific Computing SCAI;

Tutorials:
- **FAIR Data and Data Stewardship**, by *Mark Thompson* (LUMC), *Erik Schultes* (DTL), *Rajaram Kaliyaperumal* (LUMC), *Kees Burger* (DTL), and *Marco Roos* (LUMC);
- **Describing Datasets with the Health Care and Life Sciences Community Profile**, by *Michel Dumontier*, Stanford Center for Biomedical Informatics Research, Stanford University, *Alasdair J. G. Gray,* Computer Science, Heriot-Watt University, and *M. Scott Marshall*, Department of Radiation Oncology, Netherlands Cancer Institute;
- **Semantic Representations of Clinical Care Data Leveraging HL7 FHIR**, by *Eric Prud'hommeaux*, W3C/MIT, *Harold Solbrig*, Technical Specialist, Mayo Clinic;
- **Horizontal and vertical medical data federation: Linking clinical and DICOM data using Semantic Web technologies**, by *Johan van Soest, Tim Lustberg, M. Scott Marshall,*

and *Andre Dekker*, Maastricht University Medical Centre+, Department of Radiation Oncology (MAASTRO), GROW School for Oncology and Developmental Biology, Maastricht, The Netherlands;

- **RDF2Graph a tool to recover, understand and validate the ontology of an RDF resource**, by Jesse van Dam, Laboratory of Systems and Synthetic Biology, Wageningen University

The SWAT4LS 2016 organizers were pleased to note that new 4-day format (1 day tutorial, 2 days conference and 1 day hackathon), introduced last year, has again proven highly successful and continues to attract key experts in the field.

The SWAT4LS 2016 organizers wish to thank the excellent program committee for their hard work in reviewing the submitted papers. Their criticism and very useful comments and suggestions were instrumental to achieve a high quality of publication. We also thank the conference authors for submitting good papers, responding to the reviewers' comments, and abiding by our proceedings production schedule. We further wish to thank the keynote speakers to contribute their interesting talks. We are very grateful to our sponsors: ELIXIR UK, SOHARD Software GmbH, Micelio and ENPICOM.

Amsterdam, The Netherlands, December 2016,

M. Scott Marshall, Adrian Paschke, Paolo Romano, Albert Burger and Andrea Splendiani