



Preface

The 5th International Workshop on Semantic Web Applications and Tools for the Life Sciences (SWAT4LS 2012) was devoted to research and developments on practical distributed semantic technologies and web-based information systems operating in the context of Biomedical Informatics and Computational Biology.

Growing steadily each year as Semantic Web applications become more widespread, SWAT4LS (<http://www.swat4ls.org/>) has been in Edinburgh 2008, Amsterdam 2009, Berlin 2010 and London (2011), with the first SWAT4LS School organized in Aveiro in 2012. The 2012 edition of SWAT4LS in Paris was an exciting venue to exchange new ideas, practical developments and experiences on issues related to the engineering, management, integration, interoperation and interchange of semantic data and tools in life sciences. It provided an open and stimulating environment that brought together researchers, both developers and users, from the various fields of Biology, Bioinformatics and Computer Science, who discussed goals, current limits and real experiences in the use of Semantic Web technologies in Life Sciences.

SWAT4LS 2012 received 47 original submissions from contributors around the world. The organizers of this event took advantage of the very strong international program committee, who rigorously reviewed the submissions. Finally, the workshop program included ten full papers, which presented solid work in advancing and assessing the state of the art in semantic systems; and eight position papers, which presented innovative ideas, approaches, and implementations. To place emphasis on the practical use of semantic technologies in the life science domain the program also had a poster session with demos and poster papers. This session offered participants the opportunity to demonstrate their commercial and open source tools, use cases, and applications.

Further highlights of the three day program of SWAT4LS 2012 included:

- **Four plenary keynotes** given by world-class practitioners and researchers featuring foundational topics of semantic computing and industrial success stories:

1. **Mark A. Musen**, M.D., Ph.D: *Semantic Technology Goes Mainstream: The NCBO Experience*
2. **C. Michael Gibson**, M.S., M.D., FRCP, FAHA, FSCAI, FACC: *The World is Flat, but the Earth is Round*
3. **Christine Golbreich**, Ph.D: *Formal ontologies for the Semantic Web ?*
4. **Ann Marie Martin**, Principal Scientific Manager, Knowledge Management, European Innovative Medicine Initiative : *Joining private and public forces to boost innovation in healthcare: the innovative medicines initiative and knowledge management*



- **Six Tutorials**

1. *Interconnecting Linked Open Data and R with the SPARQL package for Linked Science*
2. *Biological Pathways and the Semantic Web*
3. *Using SPARQL to Query BioPortal Ontologies and Metadata*
4. *Drug-discovery knowledge integration and analysis using OWL and reasoners*
5. *Thorough introduction to SPARQL for anyone in the Life Sciences*
6. *Use of the BioQueries collaborative portal*

- a **Hackathon Day**: SWAT4LS Hackathon

- a **Scientific Poster Exhibition**

- an **Industry Track**: Linked Life Data: Increasing Research Scope without Integration Headaches

- **Scientific Paper Presentations**

- **Social events** to promote networking among the SWAT4LS delegates in an informal setting.

The SWAT4LS 2012 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 invaluablely helped us to maintain high quality of publications. We also thank the symposium authors for submitting good papers, responding to the reviewers' comments and keeping to our production schedule. We further wish to thank the keynote speakers who have found time in their busy schedules to come and give very interesting talks. Finally, we thank the sponsors, whose financial support helped to offer the event at this exiting place, and whose technical support allowed to attract many high quality submissions.

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