

ODLS 2016
ONTOLOGIES AND DATA
IN LIFE SCIENCES

Proceedings of the 7th Workshop of the

GI Workgroup
Ontologies in Biomedicine and
Life Sciences (OBML)

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September 29-30, 2016

edited by

Frank Loebe, Martin Boeker, Heinrich Herre,
Ludger Jansen and Daniel Schober

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Frank Loebe¹, Martin Boeker², Heinrich Herre³, Ludger Jansen^{4,5}, Daniel Schober⁶

¹ University of Leipzig, Computer Science Institute, Leipzig, Germany

² University Medical Center Freiburg, Institute for Medical Biometry and Statistics (IMBI), Freiburg im Breisgau, Germany

³ University of Leipzig, Institute for Medical Informatics, Statistics and Epidemiology (IMISE), Leipzig, Germany

⁴ Ruhr University Bochum, Faculty of Catholic Theology, Bochum, Germany

⁵ University of Rostock, Institute of Philosophy, Rostock, Germany

⁶ Leibniz Institute of Plant Biochemistry (IPB), Department of Stress and Developmental Biology, Halle (Saale), Germany

Contact: Frank Loebe
University of Leipzig
Computer Science Institute
Postal Address: P.O.Box 100920, 04009 Leipzig, Germany
Street Address: Augustusplatz 10, 04109 Leipzig, Germany
Phone: +49 341 97 32236
Fax: +49 341 97 32299
Email: frank.loebe@informatik.uni-leipzig.de

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Speaker: Prof. Dr. Heinrich Herre, University of Leipzig, Germany

Deputy Speaker: Dr. Martin Boeker, University Medical Center Freiburg, Germany

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Carole A. Goble	University of Manchester, UK
Martin Golebiewski	Heidelberg Institute for Theoretical Studies (HITS) gGmbH
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Catharien M. U. Hilkens	Newcastle University, UK
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André Kaeding	GMC Systems mbH, Ilmenau
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Matthias König	Humboldt University Berlin
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Stefan Kropf	University of Leipzig
Peter Krücken	University of Leipzig
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José Antonio Miñarro-Giménez	Medical University of Graz, Austria
Norman Morrison	University of Manchester, UK
Wolfgang Müller	Heidelberg Institute for Theoretical Studies (HITS) gGmbH
Goran Nenadic	University of Manchester, UK
Juliane Neumann	University of Leipzig
Steffen Neumann	Leibniz Institute of Plant Biochemistry (IPB), Halle (Saale)
Thomas Neumuth	University of Leipzig
Quyen Nguyen	Heidelberg Institute for Theoretical Studies (HITS) gGmbH
Andreas Niekler	University of Leipzig
Anika Oellrich	King's College London, UK
Stuart Owen	University of Manchester, UK
Talya Porat	King's College London, UK
Frank Portheine	SurgiTAIX AG, Herzogenrath
Warren J. Read	University of Manchester, UK
Kutaiba Saleh	Jena University Hospital
Reza M. Salek	European Bioinformatics Institute (EBI), Hinxton, UK
Filipe Santana da Silva	Federal University of Pernambuco (UFPE), Recife, Brazil

Daniel Schober	Leibniz Institute of Plant Biochemistry (IPB), Halle (Saale)
Tobias Schmidt	Jena University Hospital
Stefan Schulz	Medical University of Graz, Austria
Sebastian Siemoleit	University of Leipzig
Jacky L. Snoep	University of Manchester, UK
Martin Specht	Jena University Hospital
Natalie J. Stanford	University of Manchester, UK
Robert Stevens	University of Manchester, UK
Stephan Stucke	GMC Systems mbH, Ilmenau
Kais Tahar	University of Leipzig
Archana Tapuria	King's College London, UK
Alexandr Uciteli	University of Leipzig
Dagmar Waltemath	University of Rostock
Jennifer D. Warrender	Newcastle University, UK
Olaf Wolkenhauer	University of Rostock
Katy Wolstencroft	Leiden Institute of Advanced Computer Science, The Netherlands

Statistics and History

Each submission to ODLS 2016 has been assessed by three reviewers, where 18 of the 24 PC members provided two reviews, the remaining six only one. Contributions could be submitted either as paper or as extended abstract. Eight paper submissions were received, seven of which were accepted as papers. The authors of one paper were invited to resubmit an extended abstract on the topic of the initial submission. In addition to the paper submissions, six extended abstracts were received and five among them have been selected for inclusion in the present proceedings.

Concerning former editions of this workshop series, it started with a workshop on Ontologies in Bio-medicine and Life Sciences (OBML) in 2009. In 2013, integration with the formerly independent workshop on Data in Life Sciences led to the renaming to Ontologies and Data in Life Sciences (ODLS). Accordingly, ODLS 2016 follows up on ODLS 2014 (Oct 7-8, Freiburg im Breisgau), ODLS 2013 (Sep 6-7, held as a workshop of INFORMATIK 2013 in Koblenz), OBML 2012 (Sep 27-28, Dresden), OBML 2011 (Oct 6-7, Berlin), OBML 2010 (Sep 9-10, Mannheim) and OBML 2009 (Nov 25-26, Leipzig). Further information on those is available via <https://wiki.imise.uni-leipzig.de/Gruppen/OBML/Workshops/>.

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Last but not least, we acknowledge the generous sponsorship of ODLS 2016 by OntoChem IT Solutions, Halle (Saale), Germany.

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Keynote Abstracts

Dispositions, capacities, abilities. Towards a classification of the powers of living beings

Johannes Hübner

In my talk I want to investigate the active and passive powers of living beings. Usually, abilities are classified as dispositions to voluntary action. I want to argue, first, that a broader concept of abilities is necessary both in the case of human beings and in the case of other animals. Second, abilities are not a species of dispositions.

The pragmatics and formality of authoring ontologies

Robert Stevens

In this talk I will explore ideas of pragmatics and formality in our approaches to authoring biomedical ontologies. Formality can come from the philosophical approach to ontology development, from the area of knowledge representation, ontological analysis used and the rigor of the method applied in the ontology development. I will advocate a moderately pragmatic approach for one's philosophical rigor and being much more formal, but not always so, on the representational side. I will illustrate both my pragmatics and formality with some recent work on normalising the Molecular Function sub-ontology of the Gene Ontology. This shows that the "functions" of gene products are very few; that upper ontologies can be of practical use and avoiding 'distinctions that make no difference'. Fully normalising the GO's molecular function ontology shows some reasonable insights in the biology and again demonstrates how a formal KR language can help. Even here, to make it work sensibly, pragmatics also come into play. The formality of using a language with strict semantics can be demonstrated, aided by some ontological rigor, but with some representational compromises or pragmatics to make the reasoning with the ontology sensible. At the end of the talk I will give a set of guidelines that I use that help me decide whether or not to be pragmatic or formal when authoring an ontology.

ODLS 2016 Program

as of September 25, 2016

THURSDAY Sep 29, 2016

(13:00 – 13:45) *(Getting together / Registration / COFFEE)*

13:45 – 14:00 Organizers Welcome remarks

Session 1 – Methods and software for terminologies | Applied ontologies

14:00 – 14:20 S. Schulz Qualitative assessment of annotations using SNOMED CT

14:20 – 14:40 S.F. Liang MeTMapS – Medical Terminology Mapping System

14:40 – 15:00 D. Schober Towards standardized evidence descriptors for metabolite annotations

15:00 – 15:20 J. Neumann Risk Identification Ontology (RIO): An ontology for specification and identification of perioperative risks

15:20 – 15:50 *COFFEE*

15:50 – 16:40 J. Hübner **KEYNOTE: *Dispositions, capacities, abilities. Towards a classification of the powers of living beings***

16:40 – 17:00 *COFFEE*

Session 2 – Ontological analysis and interpretation

17:00 – 17:20 L. Jansen A modelling pattern for multi-track dispositions for life-science ontologies

17:20 – 17:40 S. Siemoleit A Whiteheadian approach to data and knowledge

17:40 – 18:00 S. Schulz Ontological interpretation of biomedical database annotations

starting 19:30 *DINNER*

FRIDAY Sep 30, 2016

Session 3 – Publication and text mining

09:00 – 09:20 M. Argüello
Casteleiro Deep Learning meets Semantic Web: A feasibility study with the Cardiovascular Disease Ontology and PubMed citations

09:20 – 09:40 A. Niekler Extracting process graphs from medical text data

09:40 – 10:00 *COFFEE*

10:00 – 10:50 R. Stevens **KEYNOTE: *The pragmatics and formality of authoring ontologies***

10:50 – 11:10 *COFFEE*

Session 4 – Ontology building and use | Methods regarding systems biology

11:10 – 11:30 A. Blfgeh A document-centric approach for developing the tolAPC Ontology

11:30 – 11:50 S. Kropf Querying standardized EHRs by a Search Ontology XML extension (SOX)

11:50 – 12:10 D. Waltemath Challenges and opportunities for system biology standards and tools in medical research

12:10 – 12:30 O. Krebs FAIRDOM approach for semantic interoperability of systems biology data and models

12:30 – 13:45 *LUNCH*

13:45 – 15:00 ***Open discussion & OBML session***

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