ICBO|ODLS 2020

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joint with the

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Bolzano Summer of Knowledge (BoSK 2020)

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edited by

Janna Hastings and Frank Loebe

Imprint

Introduction

Against the background of a globally unfolding pandemic, 2020 was a radically different year for researchers and academic conferences around the world. Like many conferences forced to adapt under the novel circumstances of restrictions on travel and congregation, ICBO|ODLS 2020 took place as a slimmed-down virtual event. Nevertheless, the virtual event was lively and well attended. The virtual program, hosted by the Bolzano team of local organizers using the platform Zoom, consisted of short pre-recorded presentations followed by virtual question and answer sessions. In parallel, a virtual poster session was offered across the platforms WordPress and Discord.

Each submission to ICBO|ODLS 2020 was assessed by three reviewers. Contributions were accepted to four tracks: main research papers, tools and applications papers, early career abstracts, and poster abstracts. Across these tracks, 35 submissions were received, of which 26 were accepted. Among the topics of contributions to this were topics that were on everyone's minds in these challenging times – ontologies for coronavirus description and data integration in support of health research were prominent themes. Aside from this, other themes included electronic healthcare graphs, clinical documents, cross-references within and between bio-ontologies, molecular structures, and the ontology authoring process.

This year was also the first year that ICBO and ODLS were held together. The ICBO series of conferences began in Buffalo, USA in 2009, and is held annually in locations that alternate between the US and Europe. The ODLS workshop started with a workshop on Ontologies in Biomedicine 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). Since then, ODLS workshops were held annually, except for in 2015 and 2018, and mostly as independent events. Three times they were organized as a part of other events, namely of INFORMATIK 2013 in Koblenz, Germany, as well as of the Joint Ontology Workshops (JOWO) in Bolzano, Italy, in 2017 and in Graz, Austria, in 2019. The website https://wiki.imise.uni-leipzig.de/Gruppen/OBML/Workshops/ provides further information on the workshop series.

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Keynote Abstract

Ontologies for Behavioural Science: The Human Behaviour-Change Project
Susan Michie

Behaviour change interventions (BCI), their contexts and evaluation methods are heterogeneous, making it difficult to synthesise evidence and make recommendations for real-world policy and practice. The Human Behaviour-Change Project (HBCP) is creating an online 'Knowledge System' that uses Artificial Intelligence, in particular Natural Language Processing and Machine Learning, to extract information from intervention evaluation reports to answer key questions about the evidence. The Knowledge System will continually search publication databases to find behaviour change intervention evaluation reports, extract and synthesise the findings, provide up-to-date answers to questions, and draw inferences about behaviour change. Practitioners, policy makers and researchers will be able to query the system to obtain answers to variants of the key question: 'What intervention(s) work, compared with what, how well, with what exposure, with what behaviours, for how long, for whom, in what settings and why?'

Ontologies are one of the means for addressing this challenge. They represent knowledge formally as entities and relationships using a common language able to cross disciplinary boundaries and topic domains. The HBCP are developing the Behaviour Change Intervention Ontology (BCIO) to provide a systematic way to characterise BCIs, their contexts and their evaluations. The upper level of the BCIO includes the BCI scenario and the BCI evaluation study. BCI scenario entities include the behaviour change intervention (content and delivery), outcome behaviour, mechanism of action, and its context, which includes population and setting. These entities have corresponding entities relating to the planning and reporting of interventions and their evaluations. The BCIO provides a comprehensive and systematic framework for representing BCIs, their contexts and their evaluations.

Program of ICBO|ODLS 2020, September 17th

Session 1: 16:00 – 16:55

- Elizabeth Hobbs, Stephen Goralski, Ashley Mitchell, Andrew Simpson, Dorjan Leka, Emmanuel Kotey, Matt Sekira, James Munro, Suvarna Nadendla, Rebecca C. Jackson, Aitor Gonzalez-Agirre, Martin Krallinger, Michelle Giglio and Ivan Erill. **Corpora as evolving entities: embedding corpora in biomedical ontologies.**
- Yongqun He, Hong Yu, Edison Ong, Yang Wang, Yingtong Liu, Anthony Huffman, Hsin-Hui Huang, John Beverley, Asiyah Yu Lin, William D. Duncan, Jiangan Xie, Jung Hur, Xiaolin Yang, Luonan Chen, Gilbert S. Omenn, Barry Smith, Brian Athey and Sivaram Arabandi. **CIDO: The Community-Based Coronavirus Infectious Disease Ontology.**
- Amir Laadhar, Elcio Abrahão and Clement Jonquet. **Investigating One Million XRefs in Thirty Ontologies from the OBO World.**
- Jana Vataščinová, Viet Bach Nguyen, Vojtěch Svátek and Ondřej Zamazal. **Best-Practice Patterns for Biomedical Ontologies: Moving Under the Meta-Modeling Hood.**

Session 2: 17:00 – 17:55

- Asiyah Lin, Stephan Gebel, Qingliang Li, Sumit Madan, Johannes Darms, Evan Bolton, Barry Smith, Martin Hofmann-Apitius, Yongqun He and Alpha Kodamullil. **CTO: A Community-Based Clinical Trial Ontology and its Applications in PubChemRDF and SCAIView**
- Adrien Barton, Fumiaki Toyoshima and Jean-Francois Ethier. **Clinical documents and their parts.**
- Paul Fabry, Adrien Barton and Jean-François Ethier. **QUESTO – An ontology for questionnaire.**
- Paul Fabry, Adrien Barton and Jean-Francois Ethier. **An ontological representation of sex and gender information.**

Session 3: 18:00 – 18:55

- **KEYNOTE:** Susan Michie. **Ontologies for Behavioural Science: The Human Behaviour-Change Project.**
- Rolf Grütter and C. Maria Keet. **Towards a Framework for Meaning Negotiation and Conflict Resolution in Ontology Authoring.**

Session 4: 19:05 – 20:00

- Jona Thai and Michael Gruninger. **A BioSequence Ontology from Molecular Structure.**
- Georgeta Bordea, Jean Noel Nikiema, Romain Griffier, Thierry Hamon and Fleur Mougin. **FIDEO: Food Interactions with Drugs Evidence Ontology.**
- Pierre Lemordant, Bernard Gibaud, Cyril Garde, Sébastien Delarche, Didier Goudet and Marc Cuggia. **Ontology-based classification of radiological procedures for consistent sharing in Clinical Data Warehouses.**

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