Identifying Ontological Domains Related to VIVO

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Ontological Domains

Ontologies should focus their representations on their domains. The VIVO Ontology focuses on the domain of scholarship. As an early effort in representation, the VIVO ontology required representation of domains related to, but outside the domain of scholarship. An analysis of the VIVO ontology identified several such domains. Each could and in some cases has been represented ontologically by a focused effort.

Using Ontologies from other Domains

Based on significant project experience, we find that for ontologies to be reused productively, they should be 1) actively maintained; 2) open license; 3) BFO-based; 4) OBO-compliant; and 5) domain-focused. Few ontologies can meet these criteria. In future work, the VIVO ontology will focus on representing the people, organizations, processes, and works of scholarship. Related domains will be in represented in separate ontologies that work well with the VIVO ontology. Related ontologies and their terms will typically be referenced rather than used directly.

The VIVO Ontology represents things from various domains to represent scholarship. Some of these things are outside the domain of scholarship.

Dates

The W3C Time Ontology[1] provides semantics for dates and times, including intervals and instants. A complete set of date data is available on-line with open license[2].

Locations

Gazatteer[3] (GAZ) is an OBO-compliant, actively maintained, BFO-based, ontology with over 90,000 locations of the world including continents, countries, provinces, and cities.

Journals

JOU is a proposed OBO-compliant, actively maintained, BFO-based, ontology providing a controlled vocabulary of journals with ISSN, EISSN. OpenVIVO[4] created a preliminary version of JOU.
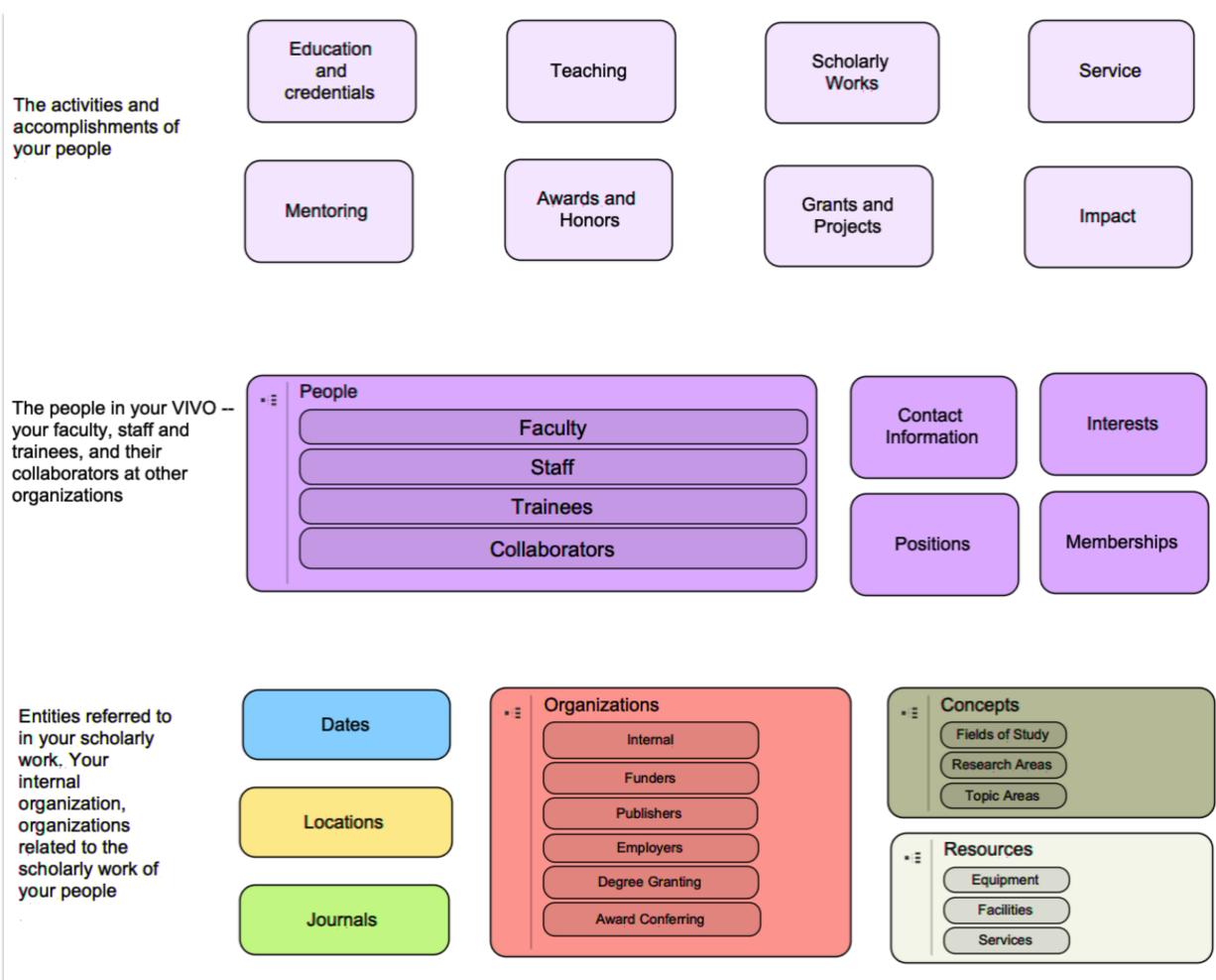
Upper Level Ontology

VIVO uses the Basic Formal Ontology[20] (BFO) as an upper level ontology. BFO is being adopted as an ISO standard. The upper level ontology is outside the domain of scholarship and used by VIVO to align its classes with those of BFO and ontologies using BFO.

Concepts

The FAST vocabulary[18] uses SKOS[19] to represent 500,000 topic areas. Available in RDF and currently accessible via API from OpenVIVO.

Research Resources

The Eagle-i Resource Ontology[17] (ERO) is an OBO-compliant, BFO-based ontology representing research resources. VIVO-ISF is an integrated ontology based on VIVO and ERO.

Academic Degrees

ADO[5] is a proposed OBO-compliant, actively maintained, BFO-based, ontology providing a controlled vocabulary of degrees with simple classification -- doctoral, masters, bachelors, associate, others.

Languages

LANG[6] is a proposed OBO-compliant, actively maintained, BFO-based, ontology based on ISO 639[7], and CEFR[8], providing a controlled vocabulary of the languages of the world for use in describing works and language competencies.

Organizations

ORG[9] is a proposed OBO-compliant, actively maintained, BFO-based, ontology using data from ROR[10] and GRID[11] regarding 90,000 research organizations in the world. ROR and GRID are actively maintained.

Roles

Roles are integral to the representation of scholarship, and to VIVO. The Contribution Role Ontology[12], the MARC[13] contributor roles and other sources will be aligned. More than 700 roles have been identified.

Other

The Information Artifact Ontology[14] (IAO), Ontology for Biomedical Investigations[15] (OBI), and the Software Ontology[16] (SWO) all have clear domains, are actively maintained and are BFO-based.

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Interested? Want to help create ontology to represent scholarship? All are welcome at the VIVO Ontology Interest Group. See http://bit.ly/vivo-oig