VIVO 1.4 Release Announcement

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Overview

VIVO 1.4 introduces two significant new features as well as extending development begun in previous releases. Proxy editing allows any VIVO user to designate another user as his or her proxy for review or update, a much-requested feature, and VIVO 1.4 also includes the ability to annotate VIVO entries with terms from controlled vocabularies using external terminology services.

Proxy editing

VIVO now allows anyone with a VIVO profile to delegate editing privileges for his or her entry to another user, or proxy. Proxy-based editing facilitates adoption and updating of VIVO in settings where researchers do not have the time to maintain their own entries and wish to delegate editing to specific persons. Proxy editing also supports granting a VIVO user the rights to edit other entities such as specific organizations, furthering sustainability by controlled distribution of editing responsibility. Proxy privileges can be managed by VIVO administrators on behalf of multiple users or by an individual user on his or her own behalf.

Linking to external vocabularies

Many people have requested support for associating terms from established controlled vocabularies with people, publications, grants, organizations, and other types of data in VIVO. While small taxonomies or vocabularies may most easily be imported in their entirety into VIVO, a number of the more popular controlled vocabularies are very large in proportion to the number of terms likely to be referenced within a single VIVO instance. Incorporating terms by reference helps keep terms in sync as these vocabularies continue to evolve and is more consistent with linked data principles.

Stony Brook University's Department of Medical Bioinformatics, led by Dr. Moisés Eisenberg, hosts an RDF version of the National Library of Medicine's Unified Medical Language System or UMLS (http://www.nlm.nih.gov/research/umls/). Through a 2011 VIVO mini-grant, Stony Brook has developed a web service that accepts incoming term requests from VIVO and returns one or more matching UMLS concepts with stable URIs. VIVO displays the label associated with the UMLS concept but the concept's URI ensures that references remain unambiguous, even across multiple VIVO instances at different institutions.

The interface from VIVO to the UMLS service has been implemented to allow linking to additional vocabulary services such as GEMET (http://www.eionet.europa.eu/gemet), and we will offer additional choices in upcoming releases.

Visualizations

The VIVO 1.4 release features a novel science maps visualization that supports the comparison of publication profiles of up to three organizations.

All science map visualizations also now feature the updated basemap of science that uses 10 years of publication data (2001-2010) from Elsevier's Scopus and Thomson Reuters' Web of Science. The UCSD map was originally created by the Regents of the University of California and SciTech Strategies in 2008. It was updated by SciTech Strategies, L'Observatoire des sciences et des technologies, and Indiana University's Cyberinfrastructure for Network Science Center (CNS) in 2011.

Ontology changes

Ontology changes from 1.3 to 1.4 were relatively minor, including an update to the Geopolitical Ontology and changes to support linking to external vocabulary references as described above. Changes for each release are documented on the VIVO wiki at Ontology.

With version 1.4, the VIVO ontology will be submitted to the Bioportal (http://www.bioontology.org/bioportal), an open repository of ontologies hosted by the National Center for Biomedical Ontology, to facilitate access and dissemination.

Freemarker conversion

VIVO 1.4 continues the major effort begun with version 1.2 and continued in 1.3 to convert VIVO's entire user-facing code base from Java Server Pages (JSPs) to FreeMarker, the Java template engine library (http://freemarker.sourceforge.net/). FreeMarker more cleanly separates internal application programming logic from page display, making the VIVO application more understandable and extensible, especially for developers new to VIVO. The entire user-facing editing system has been refactored for VIVO 1.4 to simplify the configuration of custom forms and allow more rigorous code testing and data verification.

Improved diagnostics

VIVO 1.4 features improved diagnostic messages to help with configuration issues. As VIVO starts up, it runs a series of tests looking for common configuration errors. If VIVO finds a problem it will display an error or warning message in the browser, instead of the VIVO home page. These start-time diagnostics and prominent display make it even easier to install VIVO.

Vitro as a standalone application

VIVO extends the underlying Vitro open-source semantic web application with the VIVO ontology, software customizations specific to the VIVO ontology, and visual theming. With version 1.4 of VIVO, the underlying Vitro software has been packaged for use independently of the VIVO ontology. Vitro supports ontology creation and editing as well as importing existing ontologies, and is an excellent tool for populating ontologies with instance data, for publishing RDF as linked data, and for hands-on teaching about ontologies and semantic web concepts.

Acknowledgements

This release represents the work of the entire VIVO team and contributions from the larger VIVO open source community, including feedback from adopting sites within and beyond the VIVO project, feedback from outreach efforts in the biomedical and library communities, ontology improvements and collaborations, and multiple forms of user and application testing.

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