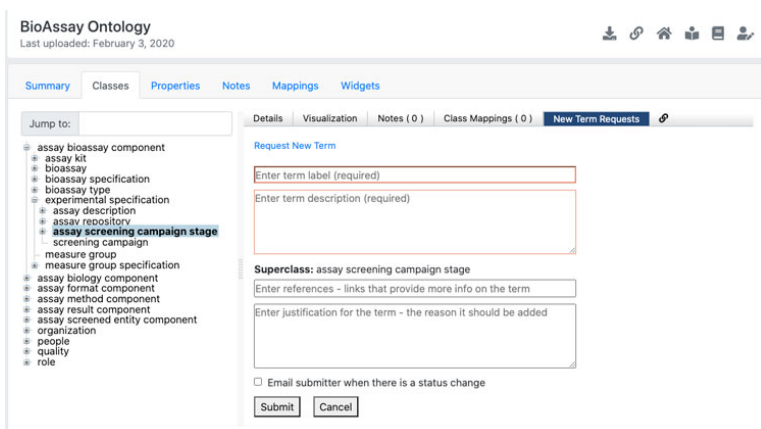




Novel Platform Connects Users and Developers of Scientific Vocabularies

OntoloBridge, a new platform designed to bridge the gap between regular users of controlled scientific vocabularies and the creators of underlying ontologies, has been developed under a collaborative U01 grant by the University of Miami, Stanford University, and Collaborative Drug Discovery.

The novel platform is now available through the BioPortal Ontology Repository (<https://bioportal.bioontology.org>).



Screenshot of OntoloBridge in the BioPortal.

Ontologies are descriptions of scientific terms and their relationships with human readable and formal (logical) definitions. Ontologies thus serve as smart thesauri that define and interrelate scientific terms. In the age of Big Data, formal vocabularies are more important than ever to enable researchers to find, access, integrate and reuse



datasets and other digital research objects – in other words, to make data FAIR (findable, accessible, interoperable, reusable).

OntoloBridge is a new technology that enables a more convenient and semi-automated process for ontology developers to update and expand their ontologies with curated new terms while accepting community suggestions.

Encouraging and handling community input is a crucial feature in widespread adoption of ontologies. Scientists should not have to choose between selecting less favorable or unsuitable vocabularies or avoiding semantic annotations of their data altogether. OntoloBridge allows researchers to connect directly with ontology owners to request new terms that would benefit both their immediate workflow and the scientific community at large.

The University of Miami's role in the project is led by Stephan Schürer, Ph.D., associate professor of molecular and cellular pharmacology (<http://pharmacology.med.miami.edu>) at the Miller School of Medicine, and program director for drug discovery at the University of Miami Institute for Data Science and Computing (<https://ccs.miami.edu/focus-area/drug-discovery>). The Schürer lab's primary research mission is systems drug discovery. The lab integrates and models small molecule-protein interaction, systems biology "omics," and chemistry data to improve translation of disease models into novel functional small molecules.

Initial user reaction to OntoloBridge has reportedly been very positive. Feedback generated from users of Collaborative Drug Discovery's bioassay annotation tool, BioAssay Express



(www.bioassay-express.com), in conjunction with the OntoloBridge integration has led to increased productivity by streamlining semantic annotation of bioassays. Users can suggest ontology terms on the fly, initiating a feedback system between curators and ontology experts.

OntoloBridge currently serves the BioAssay Ontology (BAO), Drug Target Ontology (DTO), Protein Ontology (PR), Cell Line Ontology (CLO), and the Coronavirus Infectious Disease Ontology (CIDO), and the developers are working to expand its reach to additional ontologies. Those interested in having their ontology work with OntoloBridge, should contact info@ontolobridge.org. To add an ontology to BioPortal, contact jgraybeal@stanford.edu.