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| Title: | An Ontology for Host-Microbiome Interactions |
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| Abstract: | Microbiome analyses can be diverse, complex and data intensive. Reproducibility of experiments depend on the use of consistent procedures across different settings. Data across different institutions can only be shared when using identical or similar protocols and data models. Although there are existing standards for representing microbial organisms, the terminology of the interactions between microbiomes and hosts along with associated biological processes has not been harmonized. We present a work in progress on the development of a community-based Ontology of Host-Microbiome Interactions (OHMI) through a multi-institutional collaboration. Given the large amounts of microbiome data being generated, the goal of OHMI is to create a common ontology to represent a variety of host (e.g., human and mouse), microbiome, host-microbiome interactions under different conditions, protocols, resulting data and possible analyses. For example, the hierarchies of bacterial and fungal microbiota are represented under the super class of microbiome. Doing so will permit improved sharing and pooling of data, analyses and results. Development will follow the Open Biomedical Ontologies Foundry (<http://www.obofoundry.org/>) principles. Several use cases have been identified, including those related to prokaryotic 16S rRNA sequence analysis, antibiotics effects on microbiome, and gut microbiome influences on human diseases (e.g., obesity, diabetes, and cancer). |