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A semantic resource description framework platform facilitating biomedical resource discovery

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Scientists' inability to identify and access critical research resources - either locally or at other institutions - is a major obstacle to the advancement of science and medicine. Developing or sourcing such resources in each individual laboratory is inefficient, costly, or in many cases impossible. Because most resources Web content is embedded in the form of documents, research resources can't easily be found through a standard search engine. Popular search engines can search documents for keywords, but don't present the most relevant data because they can't parse the information contained or discover connections which link the research community. From available research resources to be found by scientists, research resource information must be compiled in a searchable, structured, and user-friendly way. For any search engine to understand the information on Web pages, data must be structured using standardized concepts and terms, along with descriptions for how those concepts are linked. The development of a national infrastructure via eagle-i network at Harvard Catalyst is founded on semantic web and Linked Open data principles permitting researchers to easily discover vital biomedical resources, thereby speeding the pace of translational science research and improving their ability to develop new diagnostics, treatments, and prevention strategies. The eagle-i repository uses the Resource description framework (RDF) to extend the linking structure of the Web to use URIs to name the relationship between resources. Each item in RDF is identified by a standardized Web address called a Universal Resource Identifier (URI). Using URIs ensures that items are not just words in a document - each one is tied to a definition retrievable on the Web at that unique address. The eagle-i Network currently constitutes 34 participating institutions nationwide, and continues to grow.

Biography

Bhanu Bahl is Director for The Harvard Clinical and Translational Science Center's Biomedical Informatics Program. She is Director of the eagle-i semantic-search platform dedicated to the discovery of biomedical resources for translational science research. She is also Director of software Quality Assurance Shared Services (QASS) group at Harvard Catalyst supporting validation needs for more than 37 informatics projects leveraging technology and process optimization. She is a physician with a broad informatics background and has over 12 years of experience in overseeing technology projects in clinical and biological data repository; master data management; data standards; and content management.

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