

About

Motivation

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. The development of a national infrastructure would permit researchers to discover vital research resources, thereby speeding the pace of translation and improving our ability to develop new diagnostics, treatments, and prevention strategies.

Challenge

Because most Web content today is 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. For available research resources to be found by scientists, research resource information must be compiled in a searchable, structured, and user-friendly way.

Approach

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. This type of Web is referred to as the Semantic Web, a term coined by [Tim Berners-Lee](#), the director of the World Wide Web Consortium, which oversees the development of proposed Semantic Web standards.

The Semantic Web uses the Resource Description Framework (RDF). 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.

Current Deployment

The current network comprises eagle-i nodes deployed at twenty five institutions across the United States and indexed by the eagle-i central search. Over 26,000 searches have been conducted at www.eagle-i.net in the last several months. Join our [mailing lists](#) to stay up to date and involved with the project.

Project Timeline

Late September 2009: Project is selected for funding by the NCRR. We began recruiting our build team

Early 2010: Design and development begin on the web applications and the ontology

August 2010: The web data entry tool (SWEET) is presented to internal stakeholders

October 2010: The data entry tool and search applications undergo a formal Usability Study by the Design & Usability Center (DUC) at Bentley University

April 2011: After implementation of usability recommendations, the data entry tool undergoes an Expert Review by the DUC at Bentley University

Early May 2011: The eagle-i search application is opened to researchers at the nine eagle-i Consortium institutions. A user survey is run concurrent to the launch.

Late July 2011: The DUC conducts a Usability Study of the eagle-i search application.

August 2011: The eagle-i software is released as open source

December 2011: Major usability upgrades to search

February 2012: [Ontology is released](#)

April 2012: Major usability upgrades to the SWEET

June 2012: addition of Resource Provider (e.g. Labs, Core Facilities) web services that provide lab-centric resource views

June 2012: addition of a Linked Open Data export portal (eagle-i.net/export) including links to SPARQL endpoints,

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