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**VIVO: a Web Accessible,
Ontology Structured,
Knowledge Base of
University Research**

JA-SIG 2007-06-05
Denver, Colorado

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Introduction

- <http://vivo.cornell.edu>



Description of VIVO and Vitro

- **History**

- 2003 Jon Corson-Rikert and Medha Devare
- 2005 Refactor for maintainability, CALS portals
- 2006 new portals (GlobalAccess, Lilac, USAEP), integration tools.
- 2007 Refactoring for standards alignment.



Demo

- **overview**
- **entities**
- **index**
- **adding a class**
- **adding a new entity of that class**
- **adding a property**
- **adding a new statement using that property**



System Description

- **Backend**

- Java 1.5
- MySQL 4.1.16
- Spring 2.0 solely for JdbcTemplate

- **packages**

- edu.cornell.mannlib.vitro.core.beans
- edu.cornell.mannlib.vitro.core.dao
- edu.cornell.mannlib.vitro.core.dao.db



System Description (continued)

- **Web application**

- Tomcat 5.5 and JSP
- Lucene 1.9

- **packages**

- edu.cornell.mannlib.vitro.webapp.beans
- edu.cornell.mannlib.vitro.webapp.dao
- edu.cornell.mannlib.vitro.webapp.dao.db
- edu.cornell.mannlib.vitro.webapp.controllers
- edu.cornell.mannlib.vitro.webapp.search
- edu.cornell.mannlib.vitro.webapp.search.lucene



Knowledge Base (abstract)

- **Ontology (aka vocabulary, terminology)**
 - classes
 - properties
 - data properties
- **Assertions**
 - entities (aka resources)
 - relations between entities and other entities
 - relations between entities and data literals



Knowledge Base (implementation)

- **Current implementation**
 - homegrown, SQL and table based



VitroCore API

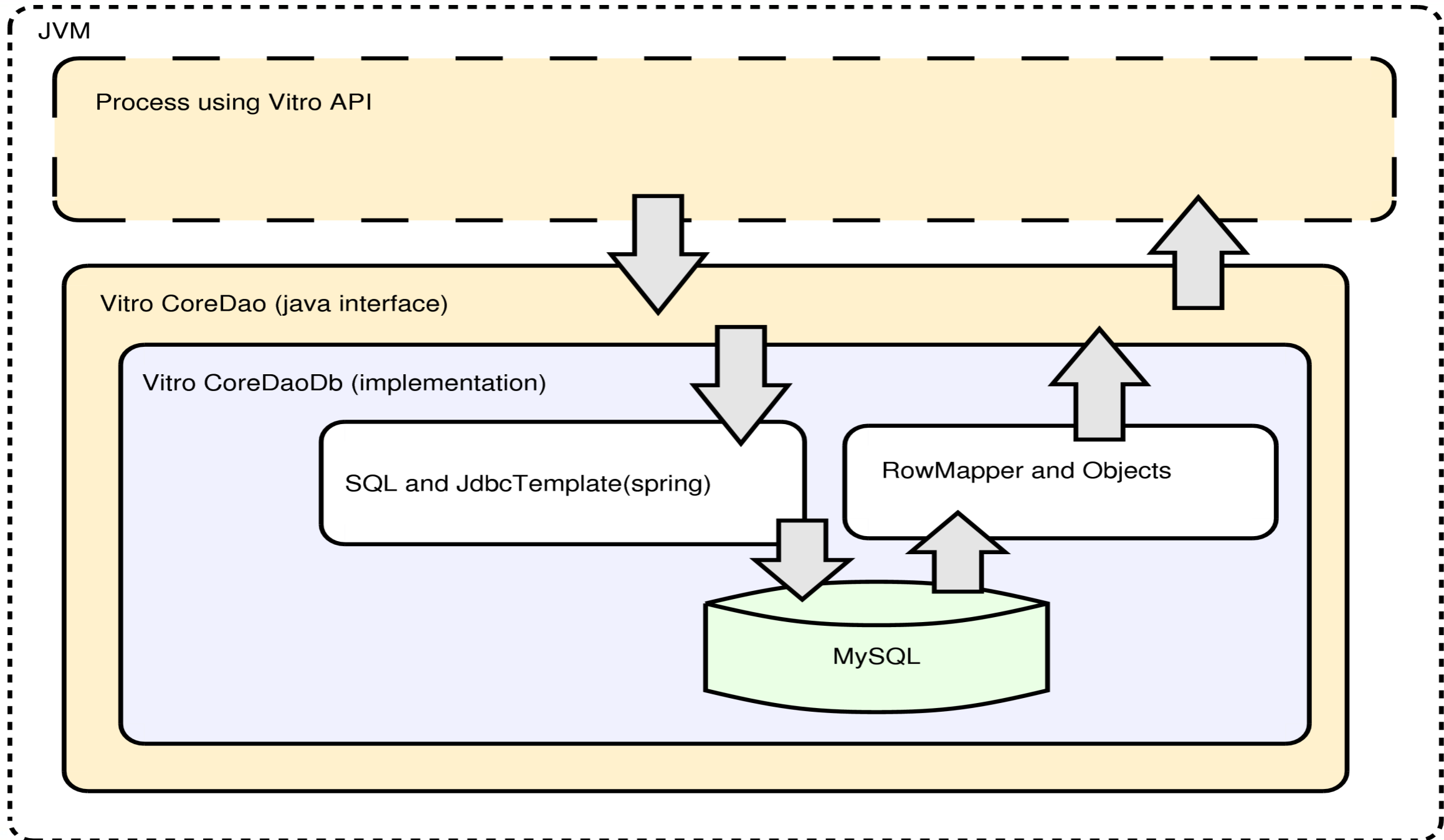


Table Details

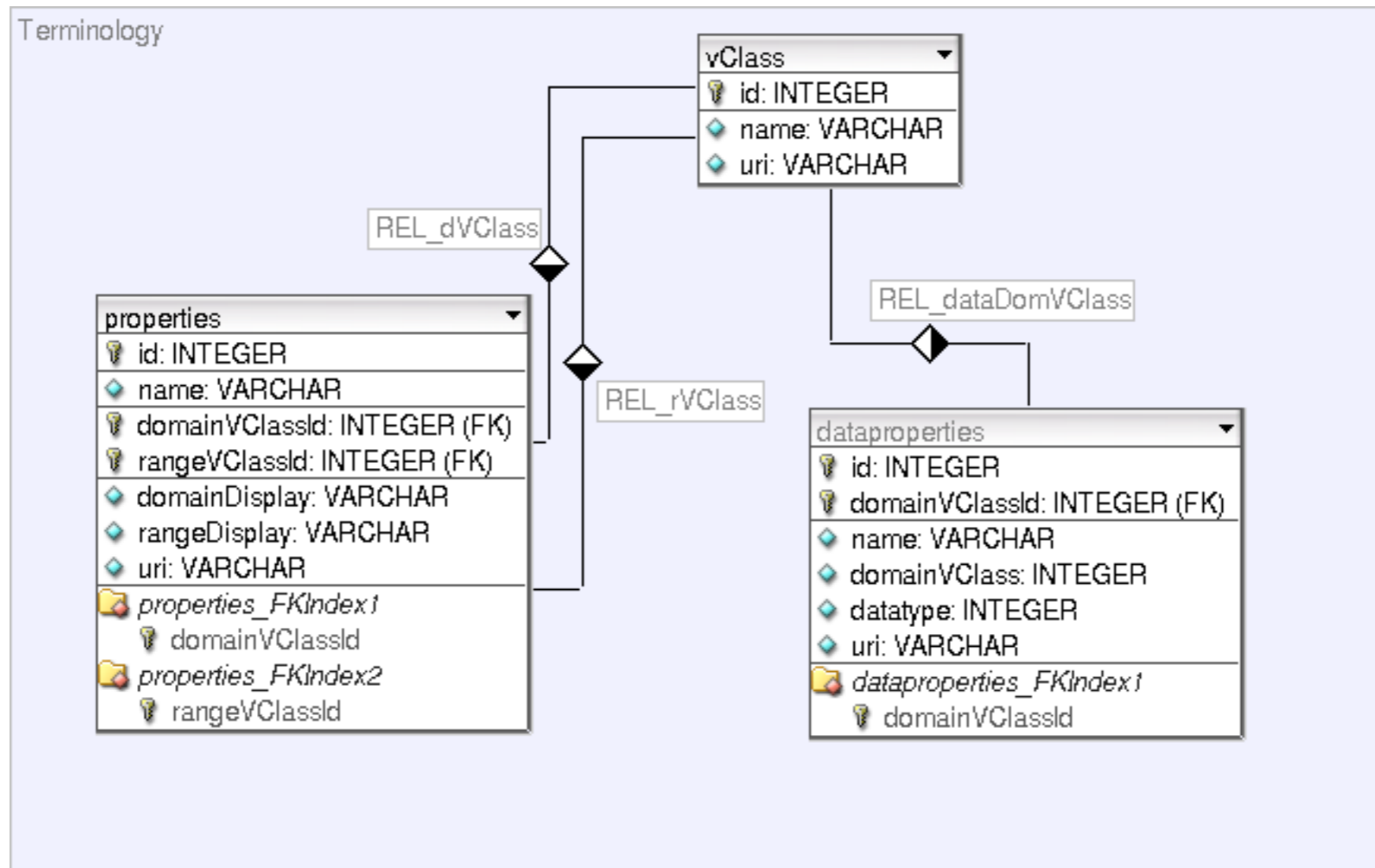
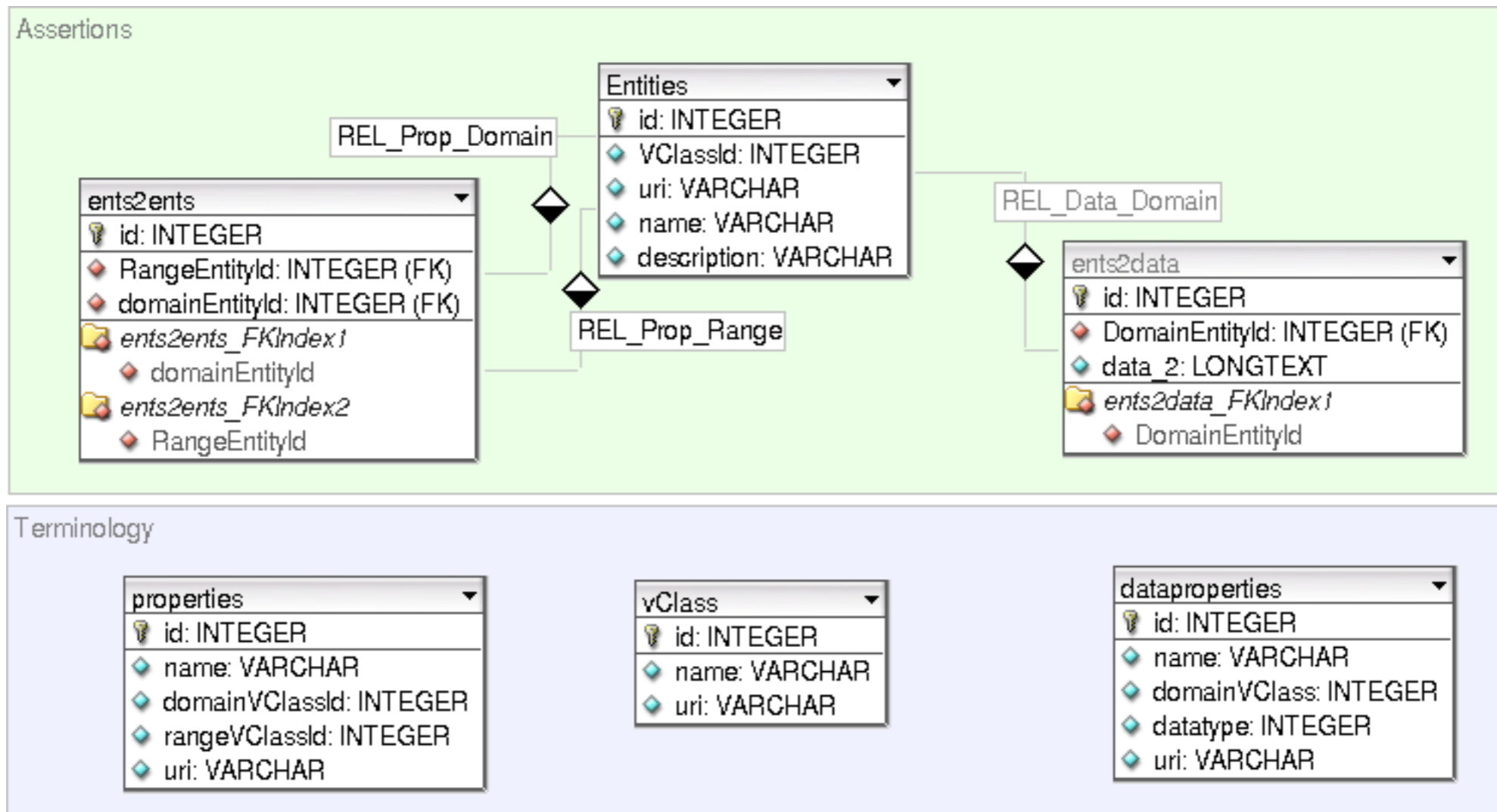


Table Details



How the System Has Been Received

- **Medha Devare and initial VIVO site**
 - <http://vivo.cornell.edu/>
- **CALS portal**
 - <http://research.cals.mannlib.cornell.edu>
- **Additional sites**
 - <http://globalaccess2.info/>
 - <http://vcla.mannlib.cornell.edu>
 - <http://usaep.mannlib.cornell.edu/>
- **Data Integration**
 - Office of Sponsored Projects: grant data
 - Human Resources: appointments etc.
 - LDAP: name lookup
 - Publications: Pubmed and WOS



Future Directions

- **Standards alignment**
 - RDF and URIs
 - CoreDao implementation backed by Jena/Pellet/SPARQL
- **Display ontologies**
- **Intermediate ontologies for data integration**



Future Directions

Editing Web Interface

Public Web Site

REST WS

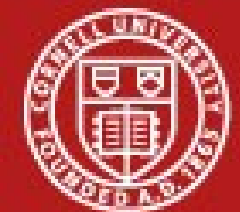
Jena API

Jena or Pellet Implementation

MySQL or Oracle



Questions?



Resources

- **Vivo site**
 - <http://vivo.cornell.edu>
- **JENA, a Java RDF library**
 - <http://jena.sourceforge.net/>
- **JENA and RDF tutorial, a focused introduction**
 - http://jena.sourceforge.net/tutorial/RDF_API/
- **RDF Primer, deeper into to RDF**
 - <http://www.w3.org/TR/rdf-primer/>
- **The Pellet OWL reasoner**
 - <http://pellet.owldl.com/>
- **OWLIM another OWL reasoner**
 - <http://www.ontotext.com/owlim/>



Thank you.



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