Extending UC’s Research Hub and Aggregating Utilities that Support the Research Lifecycle

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Research Hub @ UC
Research Directory CNI 2015
RESEARCH DIRECTORY

Integration of **system-driven** and **faculty-managed** research information across the research enterprise for:

- the individual researcher
- research administrators & coordinators
- commerce/industry
- leadership
- colleges/units
RESEARCH DIRECTORY-SINGLE PORTAL

Search

Promotion of research expertise

Single portal

Automated views, data clusters and reports

Source expertise for people, grants, protocols, patents

Single source multiple outputs
RESEARCH DIRECTORY - AUTOMATION

Automatic population from multiple sources

- COEUS
- Click Commerce
- Intellectual Property
- Sirius
- Enterprise HR
- Enterprise Finance
- USPTO Patents
- Scopus
- Web of Science
- EBSCO

Import/Export API Layer

Publications

Enterprise & Custom Apps

Publications Citations
RESEARCH DIRECTORY DATA
Custom and dynamically defined data elements
DIRECTORY CORE

Faculty demographics

Institutional data

Bibliographic data

Syndicated data

Customizable info

Facilities, services and equipment data
CORE SUMMARY

CORE provides a single integrated framework that helps to manage faculty and researcher profiles, facilities, as well as administrative functions including reappointment, promotion, and tenure.
RESEARCH DIRECTORY API

A rich API layer provides institutional partners with the ability to effectively integrate with other systems and services.
RESEARCH DIRECTORY - RESEARCHERS

✓ Generation of web-based CVs
✓ Integration of profile data into existing websites (real-time)
✓ Generation of NIH and NSF Biosketches
✓ Annual reviews
✓ Grant submissions
✓ Collaborator search
✓ Core facility search
✓ Promotion and searching for services
✓ Connecting seekers (industry) and solution providers
RESEARCH DIRECTORY-FEATURES

✓ Institution-wide profiles
✓ Grants management dashboards
✓ Annual reporting at multiple levels
✓ Annual review
✓ Reappointment, promotion & tenure
✓ Trend analysis – grants, protocols, patents, publications, collections
✓ Research clusters
✓ Promotion of facilities and services
✓ Multi campus cross organizational collaboration
✓ Reporting for accreditation purposes
CORE STRATEGY - Research Directory

SINGLE LOCATION
Provide a single gateway to access and manage common functions that faculty and administrators can utilize on demand.
CORE STRATEGY

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Genomics, Epigenomics and Sequencing Core (GESC)

Xiang Zhang, PhD, Core Manager

The Genomics, Epigenomics and Sequencing Core (GESC), originally named as Sequencing and Microarray Laboratory, was established in 1999. GESC is a fee-for-service, one-stop facility that provides genomics and epigenomics related service and collaboration to researchers at the University of Cincinnati, Cincinnati Children's Hospital and other institutions.

In 2012, GESC was transformed into the next generation sequencing-based core facility. Since then, it has been expanding its services and seamlessly integrated with the bioinformatics team for handling massive amounts of data generated by these services. Equipped with Illumina sequencer and automated liquid handling system, GESC provides a wide variety of high-quality NGS services and continuously developing new methodologies to meet researchers’ requirements. In addition, it offers Illumina BeadChip assay and a series of other supportive services. The Core manager Xiang Zhang routinely provides consultation to researchers from sample preparation to experiment design.

GESC is a small but highly efficient team. Nearly 100% of its expenses is paid from its service revenue. The Core's financial status is extraordinary healthy and stable.

SINGLE LOCATION

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CORE

STRATEGY - Research Dashboard

SINGLE LOCATION
Provide a single gateway to access and manage common functions that faculty and administrators can utilize on demand.
CORE STRATEGY - Data

SINGLE LOCATION
Provide a single gateway to access and manage common functions that faculty and administrators can utilize on demand.
Core Strategy

Automate
Strategic integrations that drive automation

Manage
Empowering faculty and administrators increases productivity

Control
Promote institutional integrity
CORE-APP MANAGER
SINGLE LOCATION
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Collection Development
COLLECTION DEVELOPMENT FRAMEWORK

Requires an understanding of researchers, curricula, resources, and finances.

Image
COLLECTION DEVELOPMENT BARRIERS

Lost in Translation

INFORMATION SILOS

Integrated Library System (ILS)  Vendors  Research Directory
CONTROLLED VOCABULARIES

- Can connect researcher profiles, integrated library systems, and vendors.

- Help organize researchers and resources into clusters.
Influenced by researcher profiles

Targets acquisition and deselection of resources

Enhances liaison relationships
CONTROLLED VOCABULARIES

Examples of broader uses for controlled vocabulary indexing, searching, and retrieval.

CONTROLLED VOCABULARY - API

• Curriculum assessment & development

• Industry & experts collaboration

• Targeted searches for experts (i.e. doctor/physician searches)
MEDICAL SUBJECT HEADINGS

Without the use of a controlled vocabulary, search results are limited and may impact areas such as:

- Curriculum development
- Curriculum assessment
- Accreditation reporting

MeSH CASE STUDY
Integrating MeSH with inverted database based searching ensures varied audiences are able to identify and retrieve related information.
Although tagging or classifying terms is helpful in increasing relevancy, the overhead associated with the effort at times acts as a detractor. Integrating controlled vocabulary with non-relational and relational searching and retrieval helps to ensure matching is still possible.
LOC Subject Headings

- Subject Headings = 421,220
- Variants = 334,752
- Narrow terms: 262,240
- Broad terms: 273,026
- Processing time to import: 6 minutes

CONTROLLED VOCABULARIES

Examples of broader uses for controlled vocabulary indexing, searching, and retrieval.
LIBRARY OF CONGRESS SUBJECT HEADINGS

Connecting the dots between loosely coupled resources

Research Directory

Integrated Library System (ILS)

Vendors

CONTROLLED VOCABULARIES API-OUTPUT

<?xml version="1.0"?>
- <items search="Architecture OR Construction OR Building design OR Architecture, Western Western countries OR Western architecture Western countries OR Buildings--Design and construction">
  - <item>
    - <id>177357</id>
    - <summary>
      - <![CDATA[
    - </summary>
    - <score>0.5000</score>
  </item>
  - <item>
    - <id>32525</id>
    - <summary>
      - <![CDATA[
          He has published articles in various journals, book anthologies, and conference proceedings on queer spaces in the disc]]>
    - </summary>
    - <score>0.5000</score>
  </item>
  - <item>
    - <id>7297</id>
    - <summary>
      - <![CDATA[
    - </summary>
    - <score>0.4998</score>
  </item>
  - <item>
    - <id>17926</id>
    - <summary>
      - <![CDATA[
    - </summary>
    - <score>0.4987</score>
  </item>
</items>
LIBRARY OF CONGRESS
SUBJECT HEADINGS

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CONTROLLED VOCABULARIES API
LIBRARY OF CONGRESS SUBJECT HEADINGS

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CONTROLLED VOCABULARIES API
CHALLENGES & NEXT STEPS

• Challenge - Minimization of data noise

Next Steps
• Complete API vocab integration
• Extend to support multiple vocabularies
• Enhance User Interface
• Support extensible integration

CONTROLLED VOCABULARIES

Examples of broader uses for controlled vocabulary indexing, searching, and retrieval.
THANK YOU!

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Divya Mereddy, Graduate Student
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