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SHRINE: Research Networks for Querying Clinical Data

Douglas MacFadden, M.S.
Chief Informatics Officer
Harvard Catalyst

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SHRINE Overview

- What it is
- Networks
- Open Source
- Resources

SHRINE Use Cases

- Allows investigators to query clinical data across a network of hospitals
- Supports hypothesis validation, population research and cohort discovery
- First step to access more detailed data directly from hospital informatics systems

SHRINE System Features

- Web application to perform real-time queries
- Data protection architecture
 - Provides obfuscated, aggregate results
- Installs on top of popularly used research data warehouses such as i2b2
- Expandable network
- Open Source software

- Extracted from EHR systems
 - Data quality based on EHR system/practices
- Loaded into research data warehouses
- Connected to network
- Common query language, data domains
 - Demographics
 - Diagnosis (ICD9, ICD10)
 - Laboratory Test Results
 - Medications

Navigate Terms

Find Terms

SHRINE

- Demographics
 - Age
 - Gender
 - Female
 - Male
 - Unknown Gender
 - Language
 - Marital Status
 - Race and Ethnicity
 - E1: Hispanic or Latino
 - E2: Not Hispanic or Latino
 - R1: American Indian or Alaska Native
 - R2: Asian
 - R3: Black or African American
 - R4: Native Hawaiian or Other Pacific Islander
 - R5: White
 - Unknown Ethnicity
 - Unknown Race
- Diagnoses
 - Certain conditions originating in the perinatal period
 - Complications of pregnancy, childbirth, and the puerperium
 - Congenital anomalies
 - Diseases of the blood and blood-forming organs
 - Diseases of the circulatory system
 - Cerebrovascular disease
 - Diseases of arteries, arterioles, and capillaries
 - Diseases of the heart
 - Diseases of veins and lymphatics
 - Hypertension

Query Tool

Query Name: R3: Bla-Hyperte@13:33:18

Group 1			Group 2			Group 3		
Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude
			R3: Black or African American			Hypertension		
			Male					

one or more of these AND one or more of these AND drag a term to here

171: Katia's Test Query

Info

Request New Topic

Run Query

New Query

Print Query

2 Groups

New Group

Previous Queries

- Female-Hyperte@13:24:53 [9-12-2013] [kz31]
- 75 year-Female@14:14:58 [10-24-2012] [kz31]
- 75 year-Female@19:19:08 [8-10-2012] [kz31]
- 75 years old@19:17:32 [8-10-2012] [kz31]

Query Status

Finished Query: "R3: Bla-Hyperte@13:33:18"

Partners - 232306 ±3 patients
 CHB - 9383 ±3 patients
 BIDMC - 87616 ±3 patients
 DFCI - 7967 ±3 patients

FINISHED [136.3 secs]
 FINISHED [71.8 secs]
 FINISHED [0.0 secs]
 FINISHED [208.0 secs]



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Demo

- SHRINE @ HMS
- SHRINE Open Source
 - CICTR
 - CARRAnet
 - National Pilot
 - UCRex
 - PCORI SCILHS and other CDRNs
 - CTSA ACT
 - and more

HMS Network

- 17 years of electronic health records
- 5 Harvard Affiliated Teaching Hospitals
- 6+ million patients
- 1+ billion facts

Participating Institutions



Beth Israel Deaconess
Medical Center



BRIGHAM AND
WOMEN'S HOSPITAL



Children's Hospital Boston

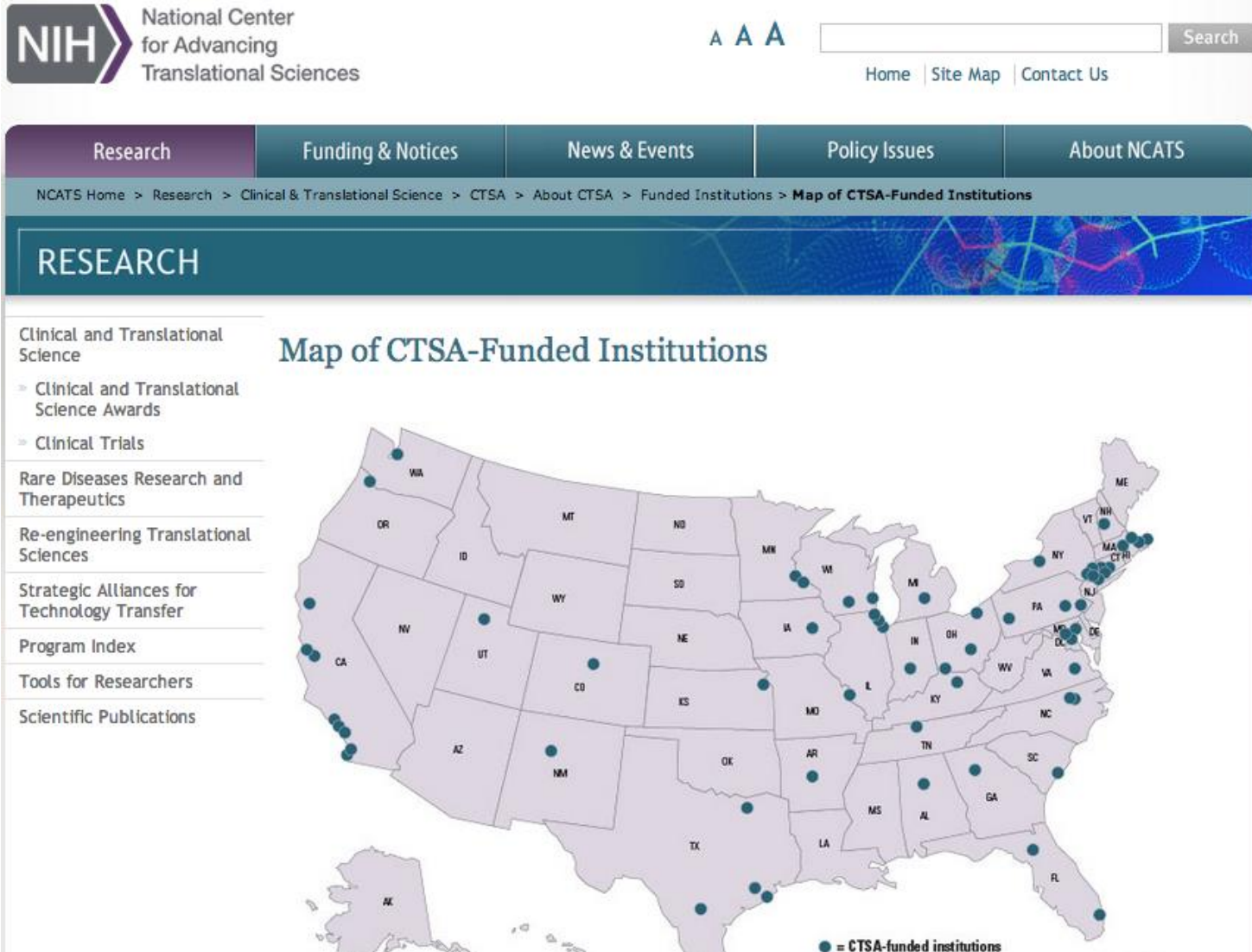


DANA-FARBER
CANCER INSTITUTE



MASSACHUSETTS
GENERAL HOSPITAL

CTSA ACT Network: 22-64 sites



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Map of CTSA-Funded Institutions



● = CTSA-funded institutions



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Open Source Community

open.med.harvard.edu

The screenshot shows the Open.Med website homepage. At the top, there are logos for Harvard Catalyst, The Harvard Clinical and Translational Science Center, and the Center for Biomedical Informatics at Harvard Medical School. The main header features the 'Open.Med' logo and a navigation menu with 'HOME', 'PROJECTS', 'PEOPLE', and 'ABOUT US'. A large banner below the header contains the text 'Identify patient cohorts quickly and easily' and the 'Shrine' logo. The background of the banner is a dark blue network diagram with white nodes and lines. Below the banner, there is a 'People' section with a row of small profile pictures.

The screenshot shows a Confluence page titled 'Home'. The page has a dark blue header with 'Dashboard > open.med > Home' on the left and 'Browse', 'Log In', and 'Search Confluence' on the right. Below the header is a search bar. The main content area lists three projects:

- eagle-i**: An ontology-driven, RDF-based distributed platform for creating, storing and searching data about research resources of all kinds. [View details >](#)
- Scrubber**: A tool for researchers to remove patient identifiable information from free text medical notes, XML and databases. [View details >](#)
- SHRINE** (Shared Health Research Information Network): A platform for enabling clinical researchers to identify sufficient numbers of patients meeting their studies' criteria for recruitment. [View details >](#)

SHRINE Resources

- HMS Network

FAQ, Tutorials, Policies, Data Steward

<https://catalyst.harvard.edu/services/shrine/>

- ACT Network

<https://www.act-network.org/>

- Open Source Site

<https://open.med.harvard.edu/wiki/display/SHRINE/Welcome+to+SHRINE>



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Wrap Up

- Questions



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