UCSF
University of California
San Francisco

UC Research Exchange (UC ReX) and UC Health

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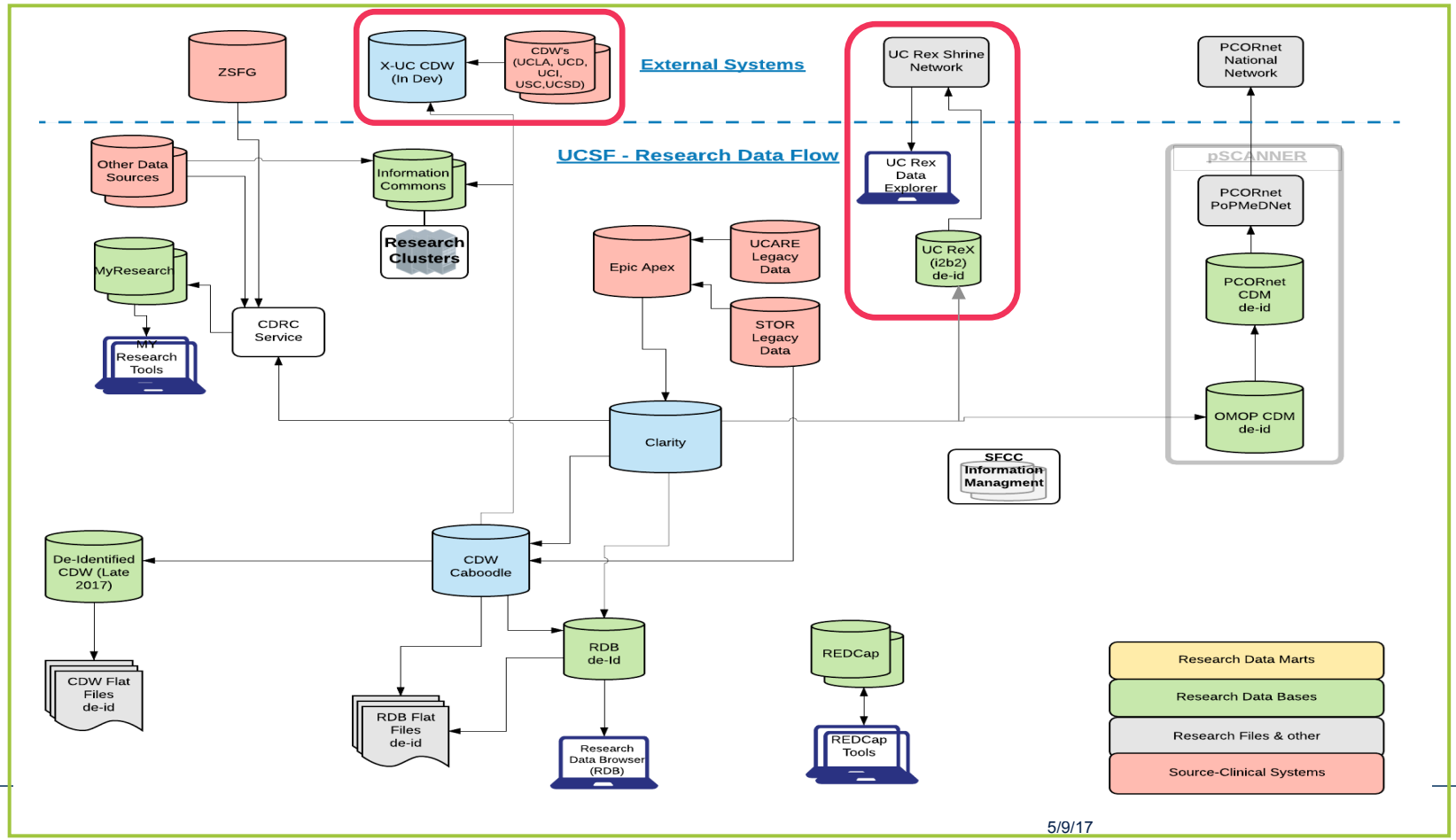
Inaugural Director, UCSF Institute for Computational Health Sciences

UCReX & UC Health

Scenario	Self-serve (Free)	Consult Required (May have recharge)	IRB needed	Requires MyResearch account or other secure environment	Includes clinical notes	UC Health data available in addition to UCSF data
Counts	Yes	No	No	No	No	Yes
De-ided data	Yes	No	No	No	No	Yes *
Limited data	No	Yes	Yes	Yes	No	Yes *
Id'ed data	No	Yes	Yes	Yes	Yes	Yes *
Recruit	No	Yes	Yes	Yes	No	Yes *

* Process to obtain data from UC Health sites can be very lengthy

UC ReX – UC Health



Why UC ReX?

- UC Health investigators can identify the size of potential research study cohorts across the five UC medical centers
- Researchers can conduct interactive searches from patient care activities at Davis, Irvine, Los Angeles, San Diego and San Francisco
- Sponsorship from UC BRAID
- Data derived from inpatient and ambulatory care settings
  - De-identified
  - Demographics, diagnoses, procedure codes (via ICD-9)
  - Top 150+ lab orders
  - Medications

UC BRAID

innovation•collaboration•acceleration

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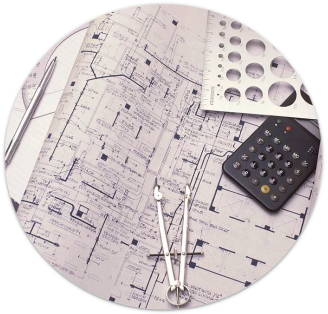

UC BRAID Vision & Mission

The **Vision** of UC BRAID is to integrate resources and talent across the University of California to accelerate research that improves health.

Our **Mission** is to create an environment that reduces barriers, leverages and combines resources, enables teams, and serves as a model for collaborative consortia.

"UC BRAID facilitated linking our clinical trial networks, time giving our patients access to cutting edge therap the UC health systems through single IRB review and a contracting process."

— Gary Firestein, Director
Clinical and Translational Research Institute , UC San

UNIVERSITY OF CALIFORNIA Office of the President

Jobs People Search

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UCOP > UC Health

UC Health

OVERVIEW | STAFF | INITIATIVES | LEGISLATIVE ADVOCACY | REPORTS & RESOURCES

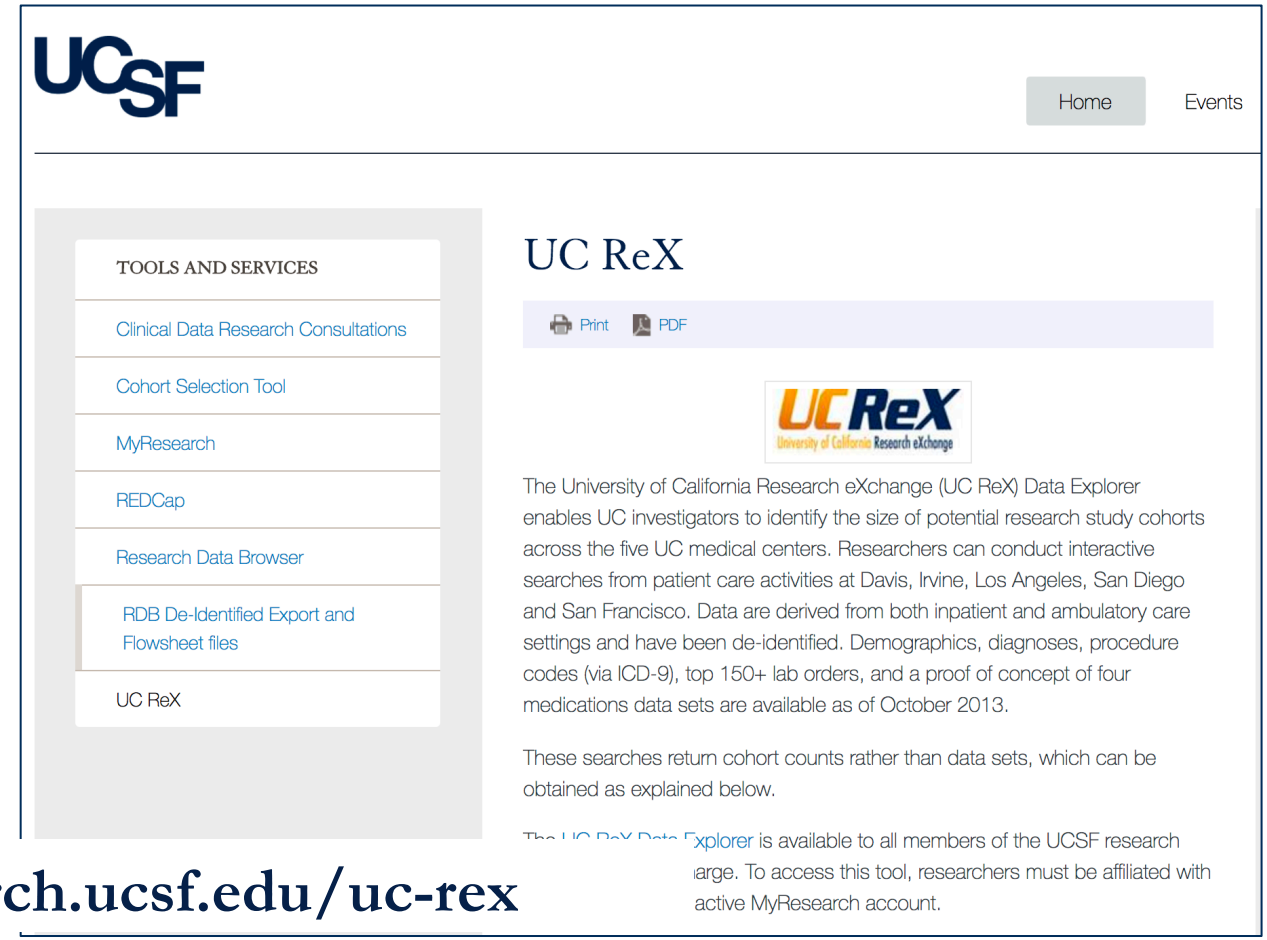
We advance the education, research and clinical service missions of UC Health.

UC Health provides leadership and strategic direction for UC's five academic medical centers and 18 health professional schools. UC Health's central office supports operational initiatives at individual campuses and development of systemwide initiatives, promoting collaboration among the university's health professional schools and providing oversight on the business and financial activities of the clinical enterprise.
Read more

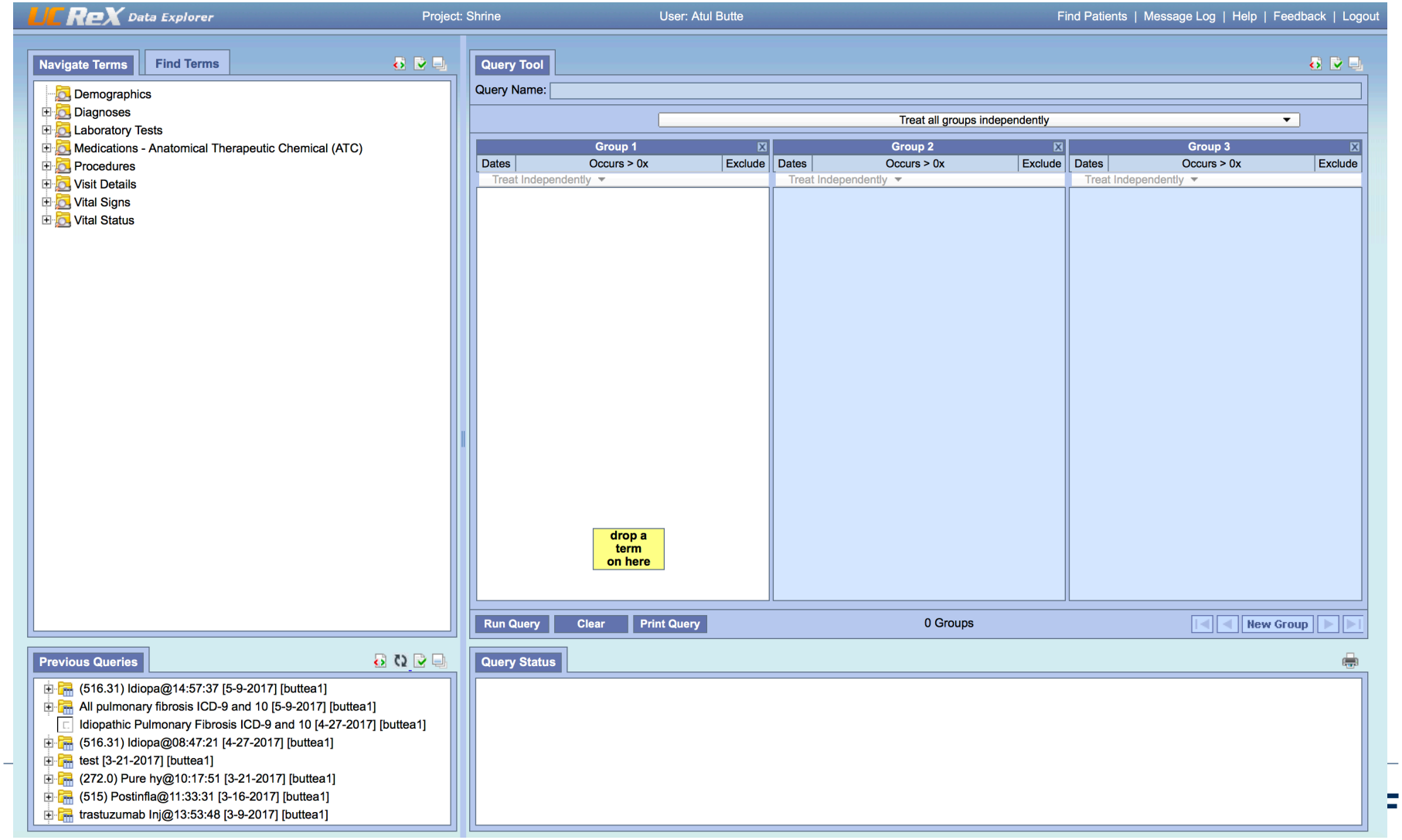
John Stobo, MD
Executive Vice President

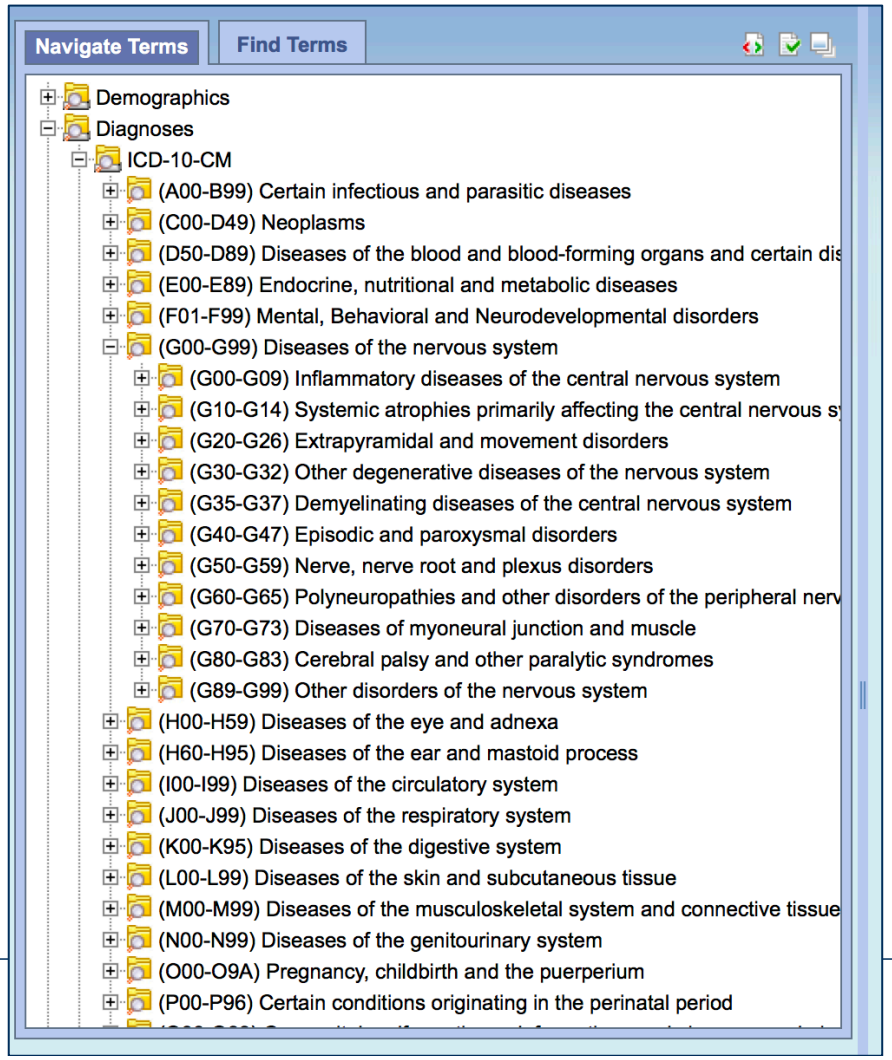
Staff Directory

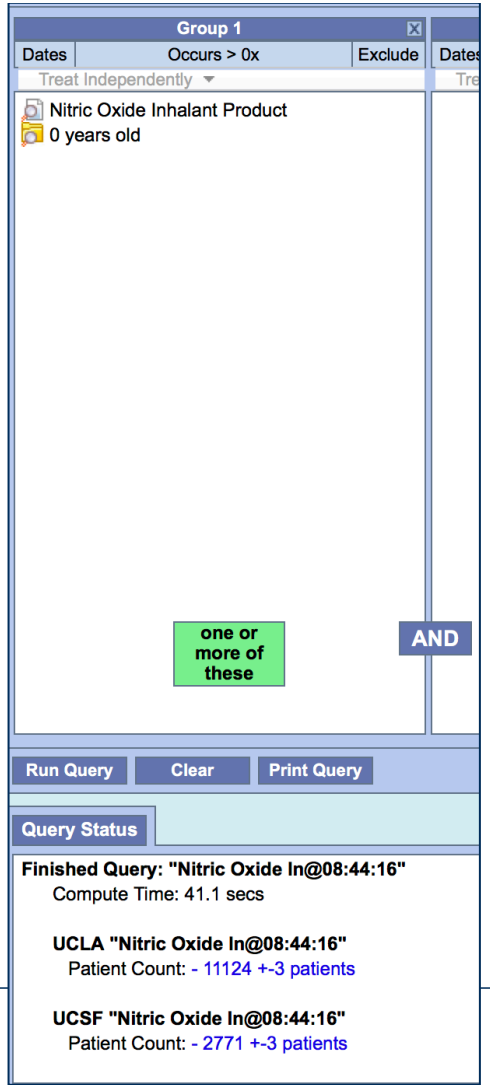
UCSF



https://myresearch.ucsf.edu/uc-rex

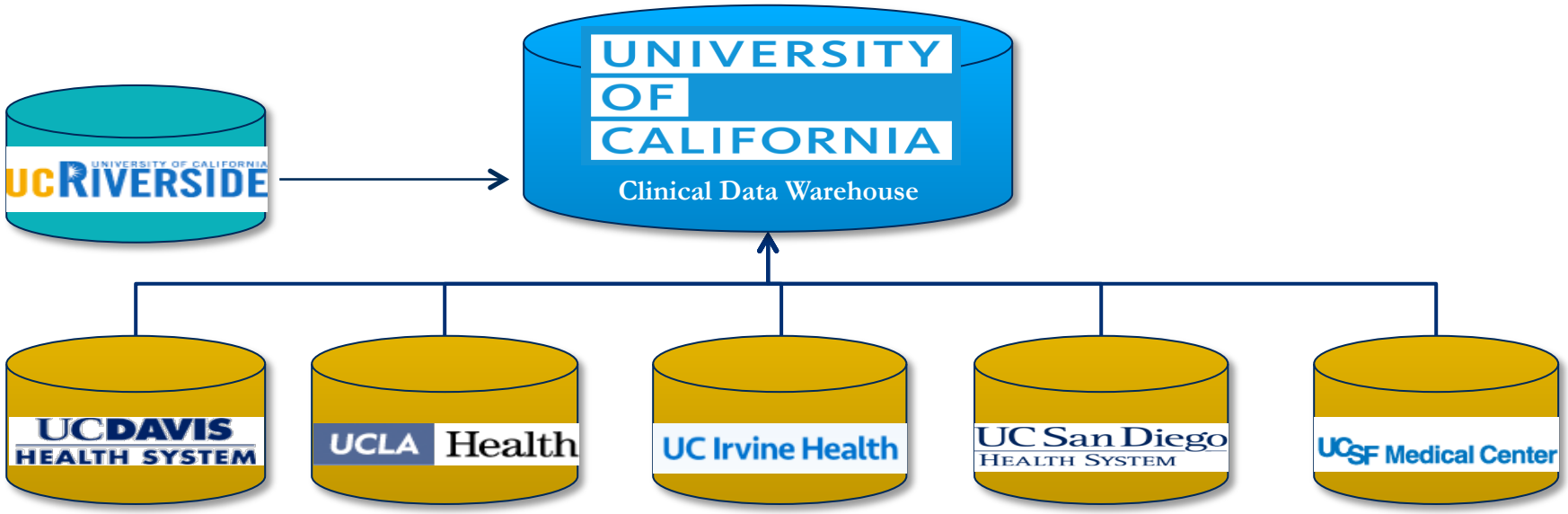

UC ReX Data Explorer
Project: Shrine
User: Atul Butte
Find Patients | Message Log | Help | Feedback | Logout
Navigate Terms
Find Terms
Demographics
Diagnoses
Laboratory Tests
Medications - Anatomical Therapeutic Chemical (ATC)
Procedures
Visit Details
Vital Signs
Vital Status
Query Tool
Query Name:
Treat all groups independently
Group 1
Group 2
Group 3
Dates
Occurs > 0x
Exclude
Treat Independently
drop a term on here
Run Query
Clear
Print Query
0 Groups
New Group
Previous Queries
(516.31) Idiopa@14:57:37 [5-9-2017] [buttea1]
All pulmonary fibrosis ICD-9 and 10 [5-9-2017] [buttea1]
Idiopathic Pulmonary Fibrosis ICD-9 and 10 [4-27-2017] [buttea1]
(516.31) Idiopa@08:47:21 [4-27-2017] [buttea1]
test [3-21-2017] [buttea1]
(272.0) Pure hy@10:17:51 [3-21-2017] [buttea1]
(515) Postinfla@11:33:31 [3-16-2017] [buttea1]
trastuzumab Inj@13:53:48 [3-9-2017] [buttea1]
Query Status


Navigate Terms
Find Terms
Demographics
Diagnoses
ICD-10-CM
(A00-B99) Certain infectious and parasitic diseases
(C00-D49) Neoplasms
(D50-D89) Diseases of the blood and blood-forming organs and certain dis
(E00-E89) Endocrine, nutritional and metabolic diseases
(F01-F99) Mental, Behavioral and Neurodevelopmental disorders
(G00-G99) Diseases of the nervous system
(G00-G09) Inflammatory diseases of the central nervous system
(G10-G14) Systemic atrophies primarily affecting the central nervous s
(G20-G26) Extrapyramidal and movement disorders
(G30-G32) Other degenerative diseases of the nervous system
(G35-G37) Demyelinating diseases of the central nervous system
(G40-G47) Episodic and paroxysmal disorders
(G50-G59) Nerve, nerve root and plexus disorders
(G60-G65) Polyneuropathies and other disorders of the peripheral nerv
(G70-G73) Diseases of myoneural junction and muscle
(G80-G83) Cerebral palsy and other paralytic syndromes
(G89-G99) Other disorders of the nervous system
(H00-H59) Diseases of the eye and adnexa
(H60-H95) Diseases of the ear and mastoid process
(I00-I99) Diseases of the circulatory system
(J00-J99) Diseases of the respiratory system
(K00-K95) Diseases of the digestive system
(L00-L99) Diseases of the skin and subcutaneous tissue
(M00-M99) Diseases of the musculoskeletal system and connective tissue
(N00-N99) Diseases of the genitourinary system
(O00-O9A) Pregnancy, childbirth and the puerperium
(P00-P96) Certain conditions originating in the perinatal period


Group 1
Dates
Occurs > 0x
Exclude
Dates
Treat Independently
Nitric Oxide Inhalant Product
0 years old
one or more of these
AND
Run Query
Clear
Print Query
Query Status
Finished Query: "Nitric Oxide In@08:44:16"
Compute Time: 41.1 secs
UCLA "Nitric Oxide In@08:44:16"
Patient Count: - 11124 +-3 patients
UCSF "Nitric Oxide In@08:44:16"
Patient Count: - 2771 +-3 patients

UCSF

Combining healthcare data from across the six UC medical schools and systems



A Big UC Healthcare Data Analytics Platform

UC Health, United Healthcare Form New ACO & Clinically Integrated Networks

by Staff Writer 10/03/2016 0 Comments

The University of California and UnitedHealth Group are teaming up to form a new accountable care organization (ACO) and clinically integrated network. As part of the 10-year strategic relationship, UC Health's five academic medical centers will expand use of Optum's clinically integrated network services and advanced data analytics services.

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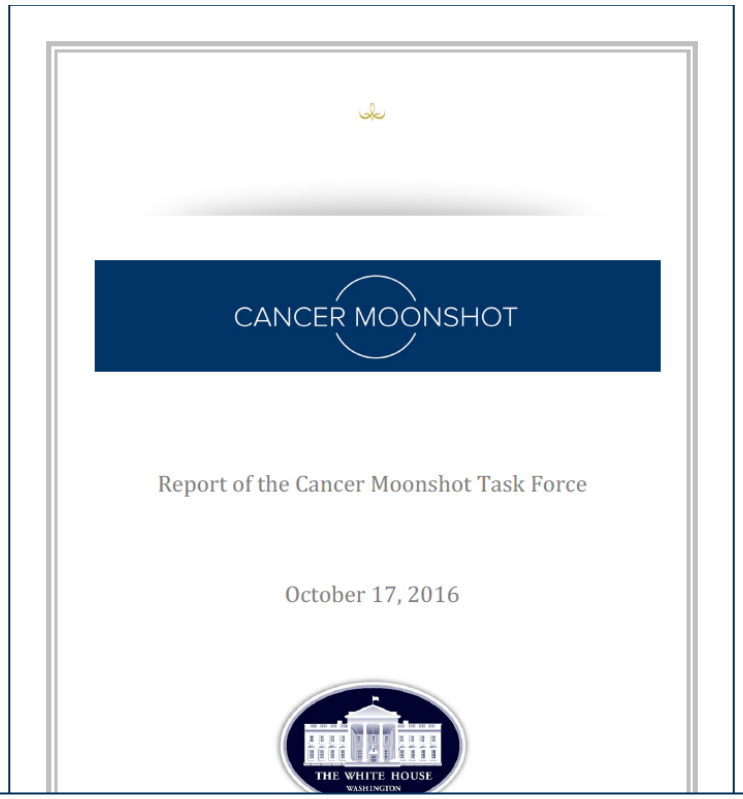
NEWS RELEASES

Thursday, October 13, 2016

NIH funds additional medical centers to expand national precision medicine research program

The awardees are:

- **California Precision Medicine Consortium:** University of California San Diego, with partners Cedars-Sinai Medical Center, Los Angeles; San Diego Blood Bank; University of California, Davis; University of California Health; University of California, Irvine; University of California, San Francisco; and University of Southern California, Los Angeles



sending patients for treatment they are not healthy enough to endure—and could help commanding officers avoid sending military personnel on missions they are not healthy enough to complete. The Analytical Tools to Objectively Measure Human Performance (ATOM-HP) project will create a high-quality performance status tracking system for cancer patients during therapy and long-term follow up. The goal is to be able to assess, in real time, a cancer patient's experiences with physical, psychological, and environmental factors, among others. This is expected to advance the ways by which doctors can monitor core dynamics in cancer patients on a regular basis.

Strategic Goal 2 – Unleash the Power of Data

Data come in all sizes, shapes, and forms, and making sense of this information is essential for developing any new and effective approach to combatting cancer. Today researchers are working with an unprecedented amount of data, in part due to the explosion of genomic information, increasing use of EHRs, and large datasets of clinical, environmental, and public health information. This new era provides a tremendous opportunity for cancer research and care, but also raises significant challenges. Privacy and security issues must be at the forefront of discussions and policy decisions. Making sense of large volumes of data with varying complexity—often referred to as "Big Data"—requires advanced computational capabilities. It is also imperative that data and the insights its analyses generate are rapidly shared as appropriate with researchers, physicians, caregivers, and patients to guide new discoveries and treatment decisions.

Under the Cancer Moonshot, the Task Force is unleashing the power of data to enhance, improve, and inform the journey of every cancer patient from the point of diagnosis through survivorship. To realize this ambitious goal, three priority areas are being tackled: (1) enabling a seamless data environment through shared policies and technologies, (2) unlocking scientific advances through open computational and storage platforms and next generation computer architectures, and (3) developing a workforce capable of using the open and connected data environment. Ultimately, smart collection and use of data can enable the creation of a "learning health care system for cancer," where as a Nation we learn from the contributed knowledge and experience of every cancer patient.

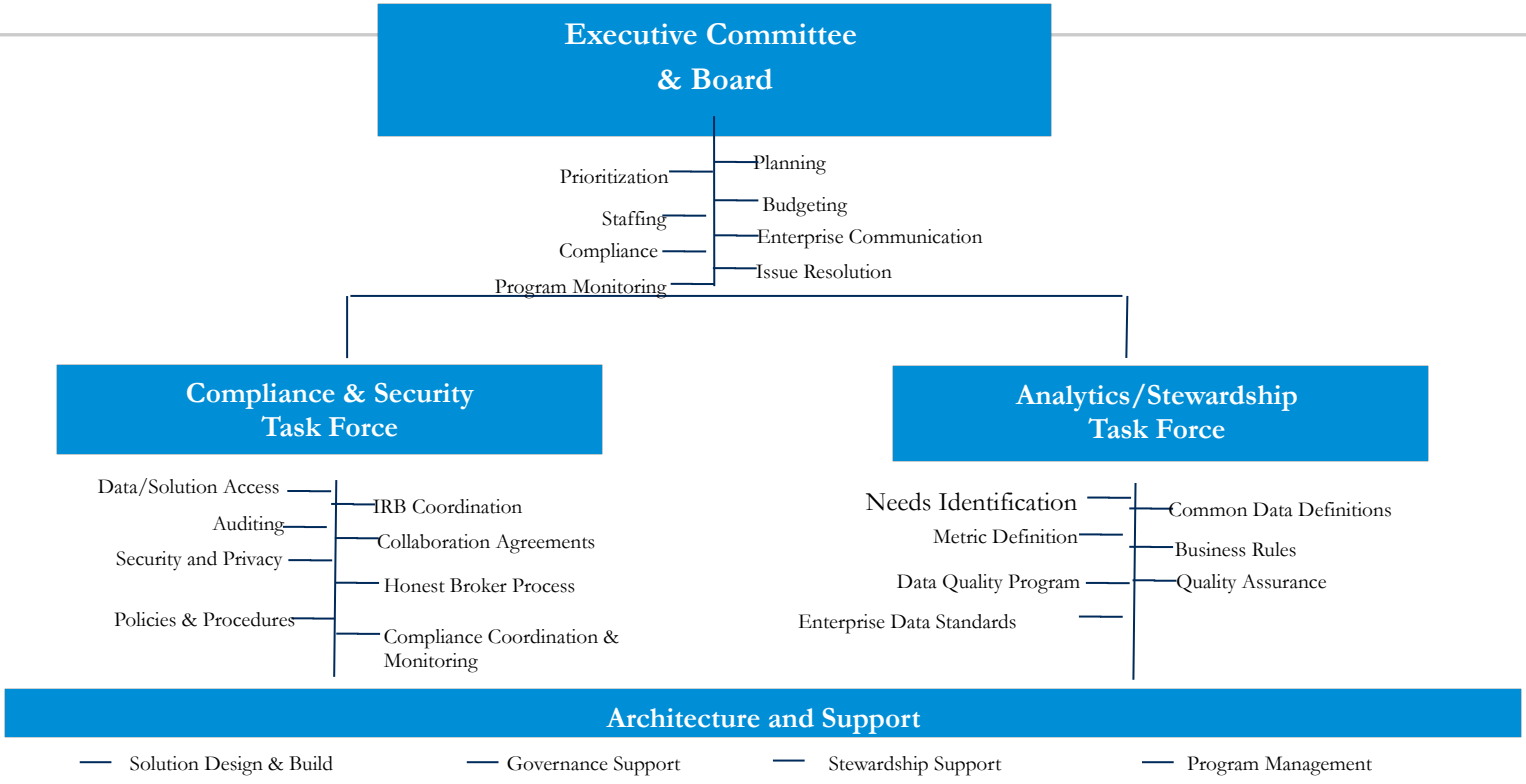
data. With this collective potential to collect, aggregate, integrate, share and analyze vast and diverse datasets, these partnerships could enable discoveries to transform cancer prevention, detection and diagnosis, accelerate therapeutic development, and advance a patient-centered learning health care system. The overarching vision includes a virtual data ecosystem (drawing from the UCHealth Data Warehouse, which brings together ~15 million patient records), The

genomic data, which is critical for advancing the field of precision medicine and improving the

First stage (proof of concept) Completed

- Data warehouse includes all encounter based data elements
  - Built using Epic Cogito data model framework
  - Industry standard architecture to be used for data export to UCDW
  - Implement appropriate security and privacy controls and provide tools to assure data integrity and quality
- Success Metrics: Successfully integrating data from local Cogito tables across all 5 UCs into a central data warehouse
  - Final data set will include harmonized data with uniform coding patterns mapped across all local sites, with appropriate data quality and security checks in place
- Validation question: UC primary care on appropriate statin therapy
- **Total count 15 million patients; ~600,000 primary care patients**
  - **Lab results: 800+ million**
  - **Medication Orders: 76+ million**
  - **Encounters: nearly 200 million**

Governance: Structure



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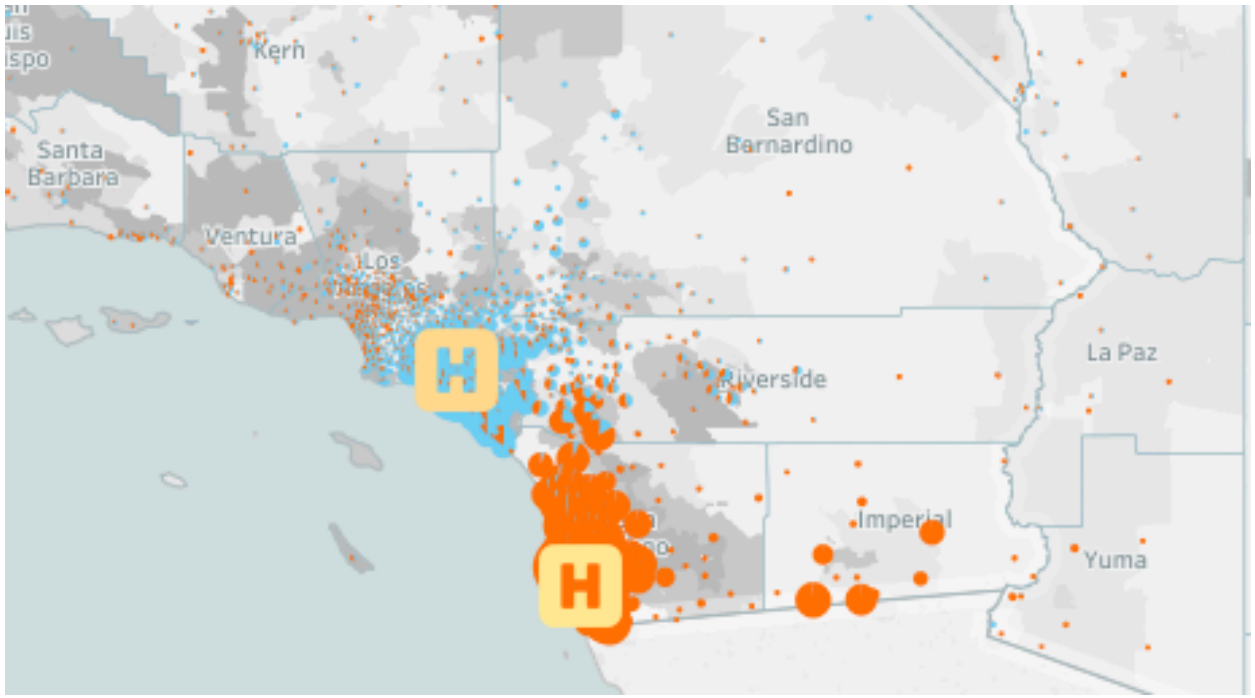
Early new example: demographics and geocoding