

CTSA Program Steering Committee

January 8, 2024
2:30 – 3:30pm ET

Agenda January 8, 2024

Time	Topic	Speaker(s)
2:30 – 2:35pm ET	Welcome & Announcement of Co-Chair Designate	Michael Kurilla Ruth O'Hara
2:35 – 2:55pm ET	Introduction of New Steering Committee Members	
2:55 – 3:15pm ET	Presentation: ENACT: An Investigator-Centered Desktop Tool for Nationwide HER Research	Steven Reis
3:15 – 3:25pm ET	Pod Feedback Demonstration	Kerry James, CCOS
3:25 – 3:30pm ET	Request for Volunteers	Michael Kurilla
3:30pm ET	Adjourn	



2024-2025 Steering Committee Co-Chairs



Ruth O'Hara, PhD
Stanford University
UL1 Member
Co-Chair



Michael Kurilla, MD, PhD
Director, Division of Clinical Innovation
NCATS Co-Chair

Rotating off as Co-Chair, but remaining for 2024 as Past Co-Chair



Duane Mitchell, MD, PhD
University of Florida
Past Co-Chair



Continuing Steering Committee Members



Stephan Bour, PhD
Digital Infuzion
CCOS PI



Arleen Brown, MD, PhD
UCLA
UL1 Member



Stephanie Ezequiel, MPS
NCATS
*Executive Secretary to the
Steering Committee*



Daniel Ford, MD, MPH
Johns Hopkins University
TIN Representative



Melissa Haendel, PhD
University of Colorado
N3C Representative



Tesheia Johnson, MBA, MHS
Yale School of Medicine
Administrator Member



Jessica Kahn, MD, MPH
University of Cincinnati
UL1 Member



Duane Mitchell, MD, PhD
University of Florida
Past Co-Chair



Steven Reis, MD
University of Pittsburgh
ENACT Representative

Continuing Steering Committee Members



Doris Rubio, PhD
University of Pittsburgh
KL2 Member



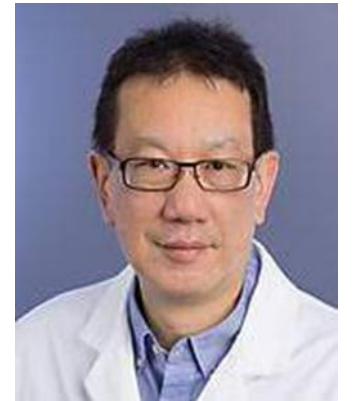
Kathryn Sandberg, PhD
Georgetown University
TL1 Member



Randall Urban, MD
UTMB Health
UL1 Member



Rosalind Wright, MD, MPH
Icahn School of Medicine at
Mount Sinai
UL1 Member



Theodore Wun MD, FACP
UC Davis Health
UL1 Member



Incoming Steering Committee Members



Grace McComsey, MD
Case Western Reserve
University
School of Medicine



Elizabeth Ofili, MD, MPH, FACC
Morehouse School of Medicine



Frederick "Gerry" Moeller, MD
Virginia Commonwealth University



Incoming Steering Committee Members (con't)



Mimi Kim, ScD
Albert Einstein College of
Medicine



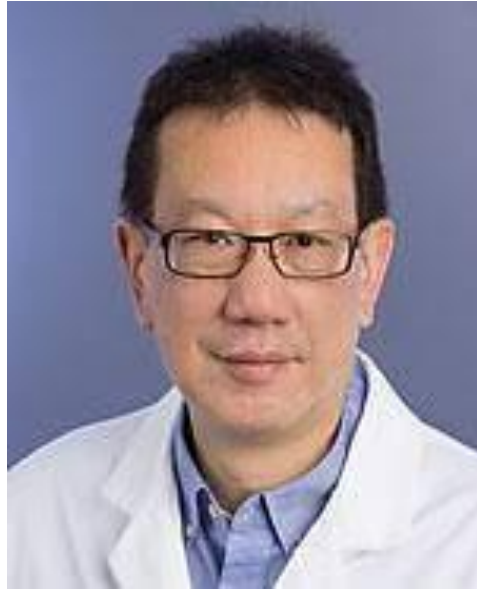
Vesna Garovic, MD, PhD
Mayo Clinic



Jennifer Kraschnewski, MD, MPH
Penn State College of Medicine



2025-2026 Steering Committee Co-Chairs



Theodore Wun MD, FACP

UC Davis Health

UL1 Member

Ted will also serve as the Chair of the Fall
2024 Annual Meeting Planning Team



Michael Kurilla, MD, PhD

Director, Division of Clinical Innovation

NCATS Co-Chair

Presentation: ENACT: An Investigator-Centered Desktop Tool for Nationwide EHR Research

Steven Reis



An investigator-centered desktop tool for nationwide EHR research

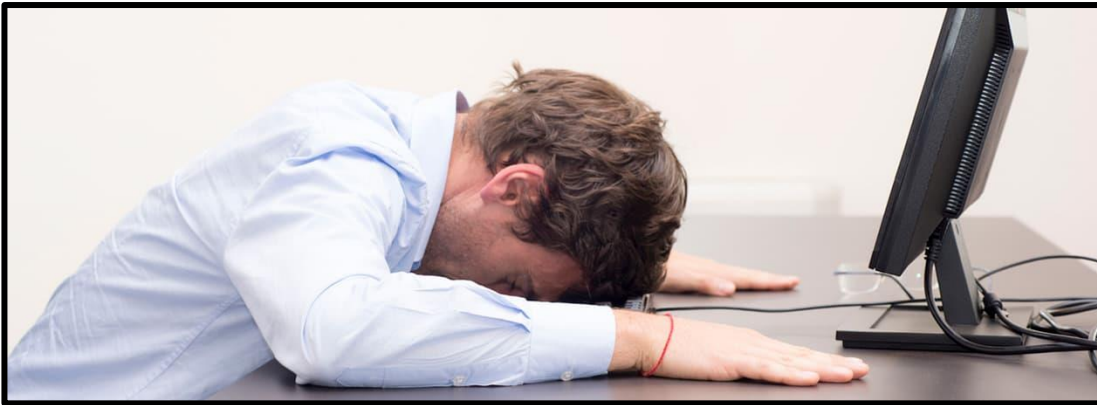
An investigator-centered desktop tool for nationwide EHR research



EHR Research

What We Heard from Your Investigators:

- ↓ barriers to access to quality Real World Data (RWD)
- ↑ ease of use
- Self-service (without informatics expertise)
- Generation of Real World Evidence (RWE)
- Informing clinical decision making



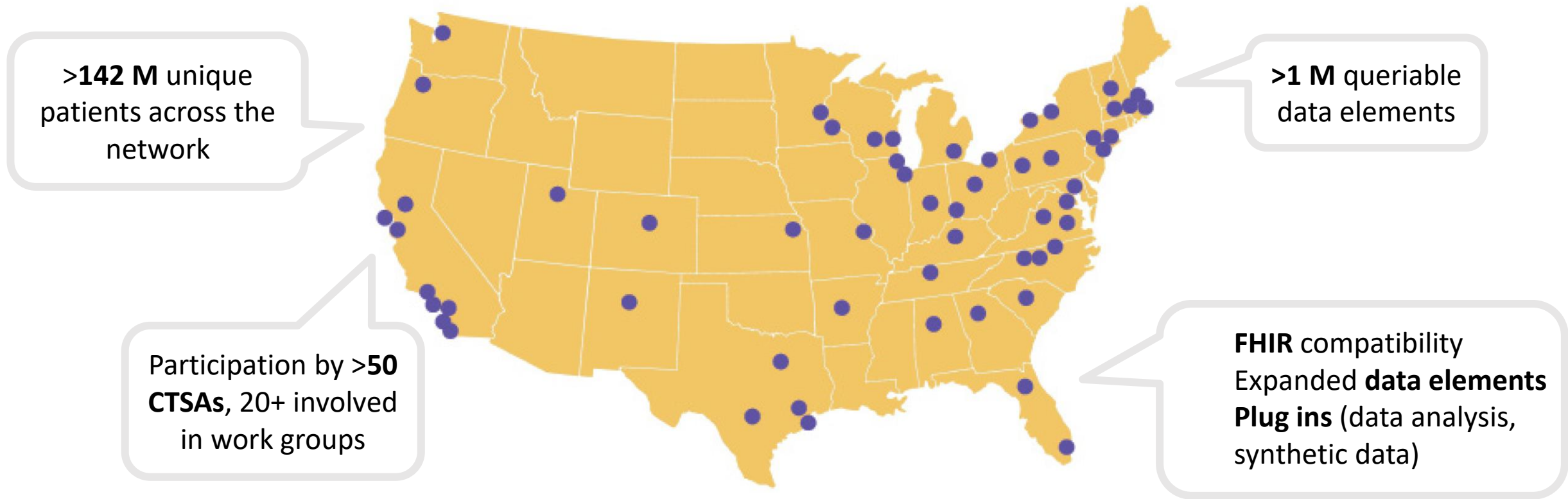
The ENACT Story

ENACT:

- Built for CTSA Hub Investigators
- Desktop Access to de-identified EHR Data
- Enables Research and Grant Applications
- Visualizes Data Quality and Completeness
- Informs Development of Informatics Tools



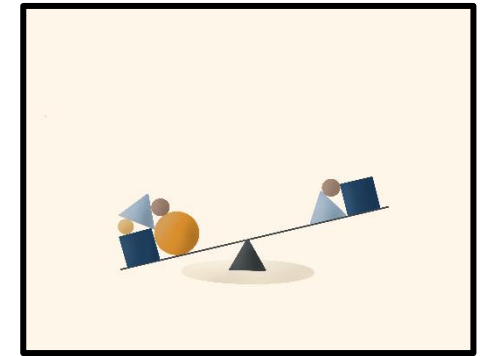
ENACT: A Federated Network Linking EHRs Across the Nation



Hubs Do Not Actively Transfer Their Entire EHR to a 3rd Party

What ENACT Offers

- **Research**
 - Patient Counts
 - Ephemeral Analytics Enclaves
 - Distributed Analytics
- **Resource for Educating Trainees**
 - KL2, TL1, Others
- **“Patients Like Mine”**



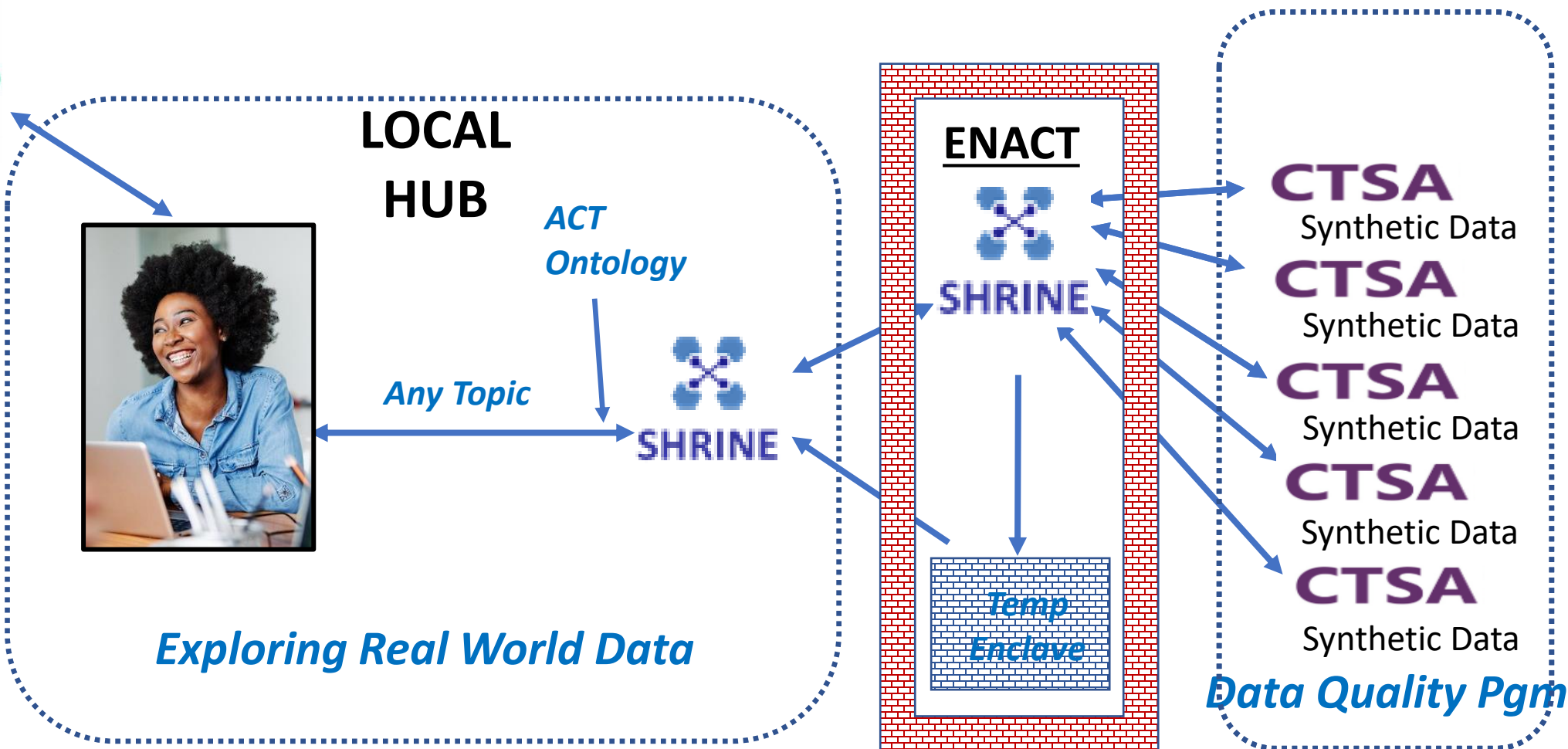
An Investigator-Centered Nationwide EHR Research Platform

I-Corps@NCATS



Federated Network

- **E**pidemiology
- **N**ew observations
- **A**ny Disease
- **C**linical decisions
- **T**est hypotheses



Three Use Cases

Question from a Researcher: Incidence of Myocarditis in Patients <20 with COVID

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EXPERT CONSENSUS DECISION PATHWAY

2022 ACC Expert Consensus Decision Pathway on Cardiovascular Sequelae of COVID-19 in Adults: Myocarditis and Other Myocardial Involvement, Post-Acute Sequelae of SARS-CoV-2 Infection, and Return to Play

A Report of the American College of Cardiology Solution Set Oversight Committee



Although a recent population-based study of young adults (aged <20 years) from 48 U.S. health care organizations estimated the incidence of myocarditis with COVID-19 at about 450 per million,²² prospective and retrospective studies of hospitalized patients, autopsy data, and CMR suggest that the overall incidence is higher. Fortunately, fulminant myocarditis appears to be quite rare.⁵³⁻⁵⁵

Incidence = .045%

?Incidence of Myocarditis in Patients <20 with COVID: ENACT

Name: Covid + viral myocarditis less than 20
Topic: covid
Criteria: **Find patients with** (Covid-19 Diagnosis)
[show more](#)
Status: **In Progress** - 26 sites with patients, up to 590 total patients ⓘ
Last Updated: 5/9/23 at 16:47:31 EDT

Name: Covid less than 20
Topic: covid
Criteria: **Find patients with** (Covid-19 Diagnosis)
[show more](#)
Status: **In Progress** - 26 sites with patients, up to 1,526,440 total patients ⓘ
Last Updated: 5/9/23 at 16:52:47 EDT

Incidence = .038%

(3 minute run time)

Question from a Patient

(60 yo, Diabetes, Jardiance Rx, No PAD, LE Amputation)

- Background
 - FDA Boxed Warning for canagliflozin (Invokana): increased risk of lower limb amputation (LLAs) (2017)
 - FDA removed Boxed Warning (2020)
- Question:
 - Does empagliflozin (Jardiance) have a (LLA) rate similar to canagliflozin (Invokana), as previously reported?

SGLT-2 inhibitors (SGLT2is)

SGLT2is	# patients <i>n</i>	# LLA <i>k</i>	LLA rate <i>r = k/n</i>	Odds Ratio	95 % CI
empagliflozin (Jardiance)	230,765	1,550	0.0067	0.94	[0.86, 1.04]
canagliflozin (Invokana)	77,015	825	0.0107	1.51	[1.35, 1.68]
bexagliflozin (Brenzavvy), dapagliflozin (Farxiga), or ertugliflozin (Steglatro)	84,165	600	0.0071	Control	

Conclusions:

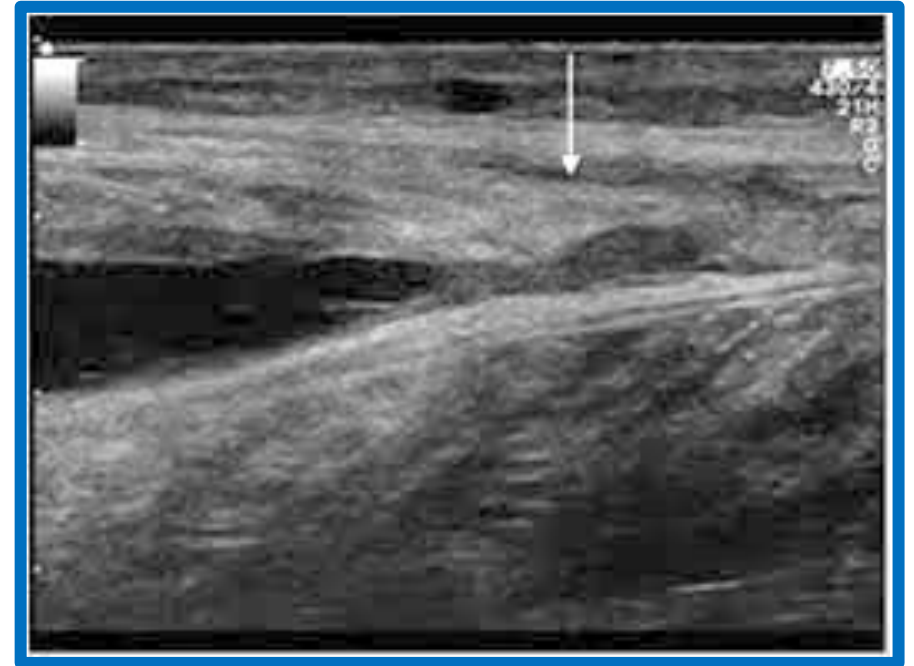
- **Canagliflozin (Invokana) is associated with a statistically significant 1.5-fold higher rate of Lower Limb Amputation.**
- **Empagliflozin (Jardiance) was not a/w increased LLA rate.**

“Patients Like Mine”

True Scenario:

A clinician concerned about the risk of deep venous thrombosis for a patient with a gastrocnemius tear (arrow) queried ENACT using the ICD-10 code for lower extremity muscle injury +/- DVT.

USN Right Gastrocnemius

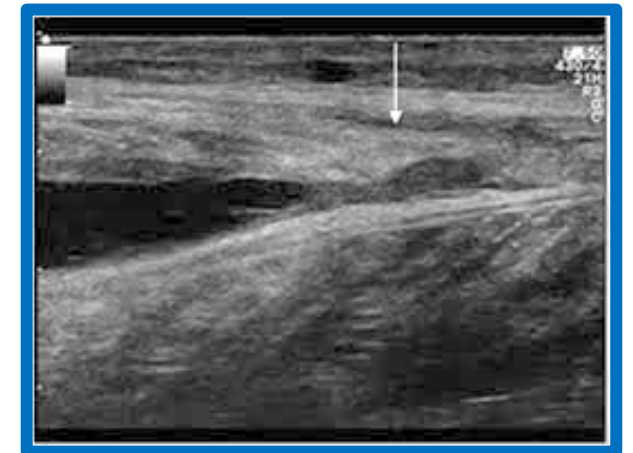


“Patients Like Mine”: Gastros Tear and DVT?

Group	# patients <i>n</i>	# DVT <i>k</i>	DVT rate $r = k / n$	Std err
Calf muscle injury group	974,785	17,730	0.0182	1.83197E-08
Control group (from literature)	100,000	67	0.0007	6.69551E-09

Finding: **26-fold risk for DVT**

ACTION: Referral for DVT evaluation





INNOVATION



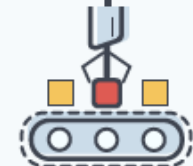
Inspiration



Creativity



Analysis



Technology



Development



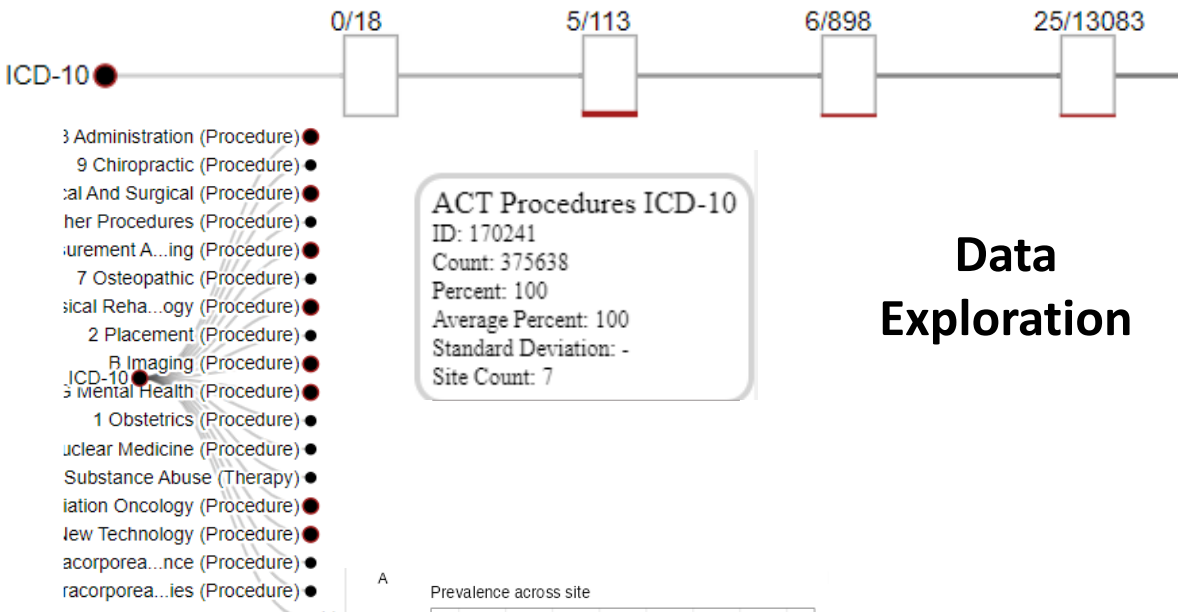
Teamwork



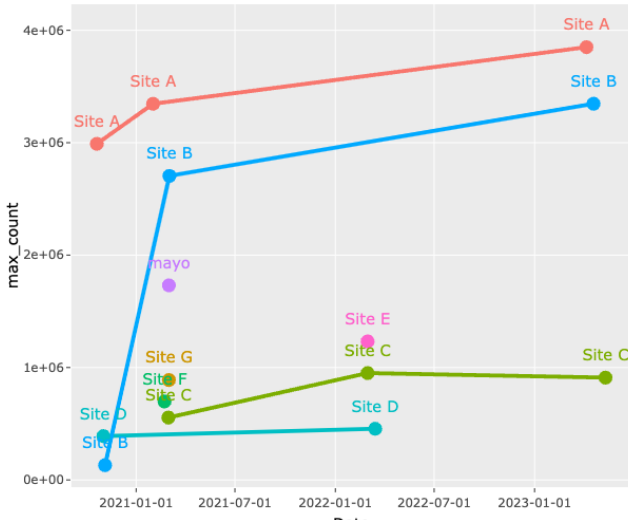
Success

Data Quality: a national + local resource

Data Quality Dashboard: site level comparison to the network

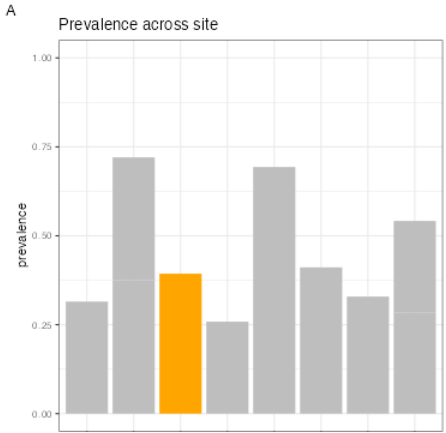


Data
Exploration



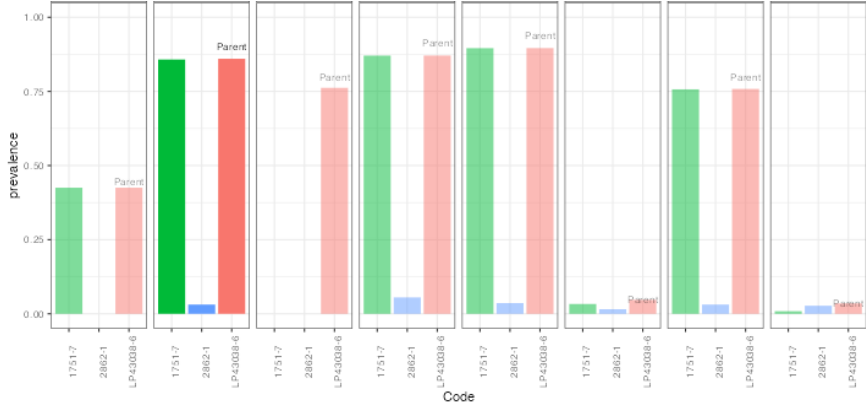
Trends across
regular data
refreshes

Prevalence of
Hemoglobin
A1C, by site



Outliers and
Averages

Prevalence of child nodes for albumin, by site

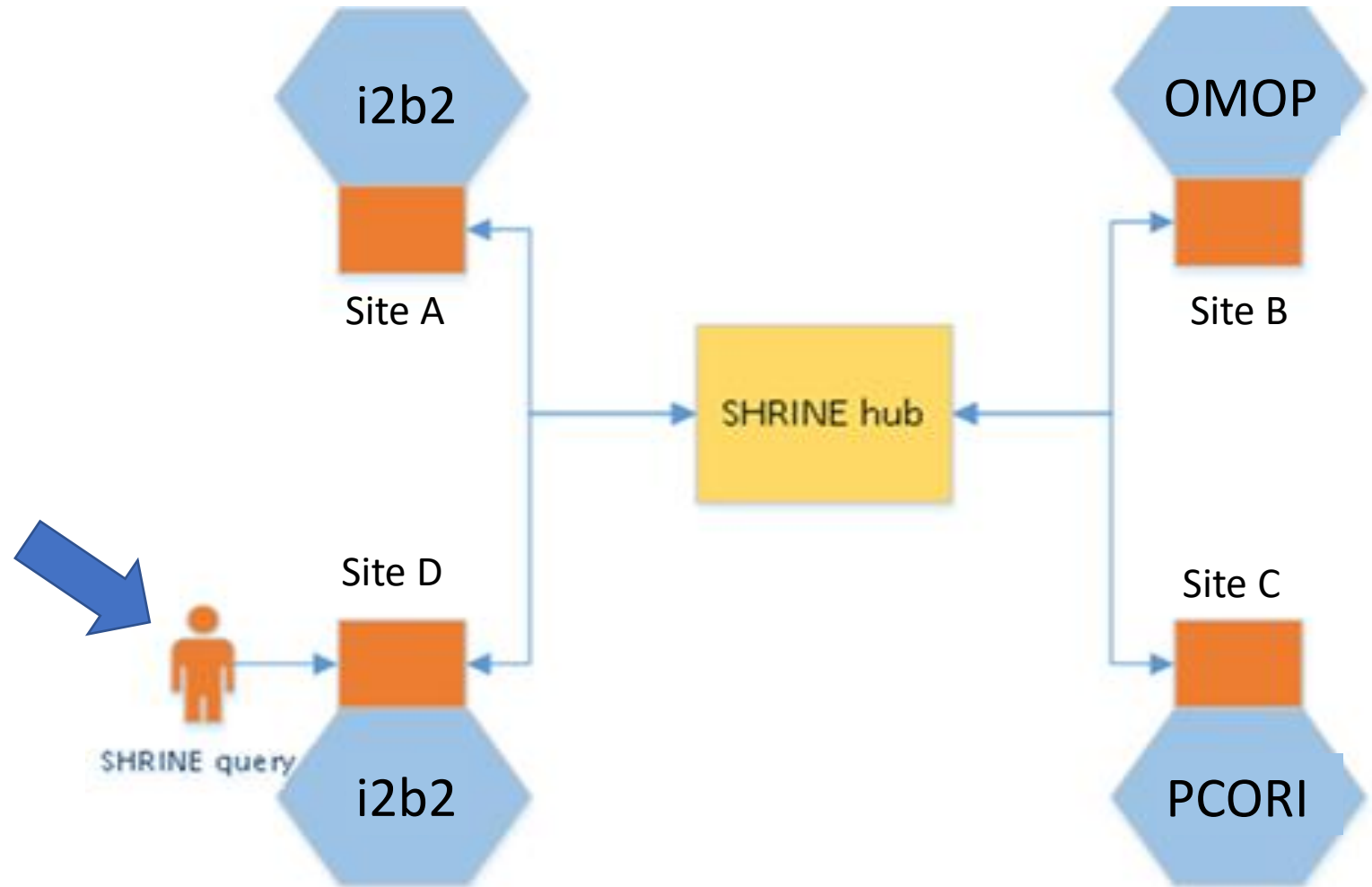


Data mapping
variation

Interoperability

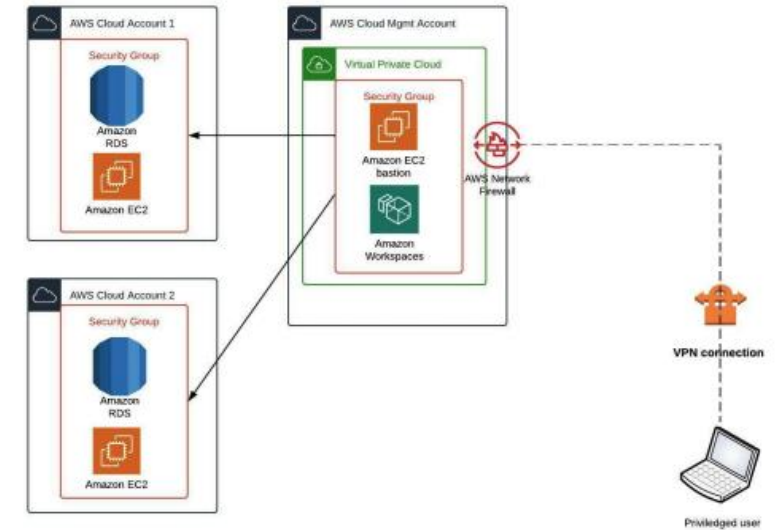
Interoperable ontologies

Additional work at a site with OMOP database: Install SHRINE adapter + ib2b with ENACT ontology software

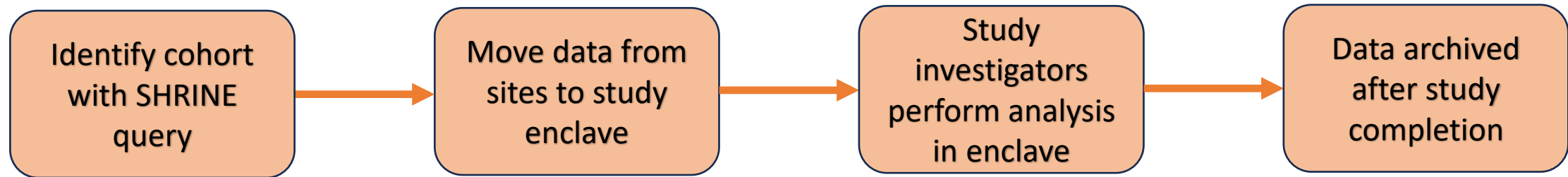


Ephemeral Analytics Enclaves

- Based on UCSD Enclave Design
- Study specific limited datasets
- Secure computation environments
- Analytics tools
- Enclaves and users isolated from each other
- Archived or deleted at study completion

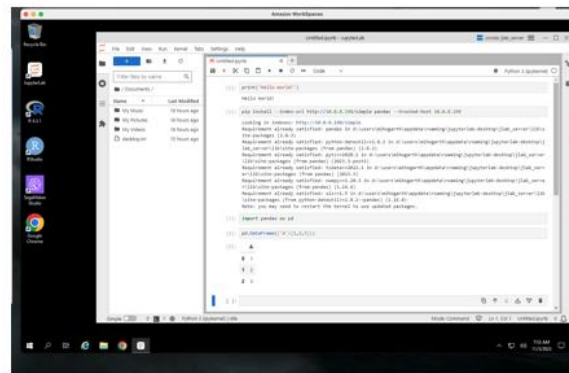


Ephemeral Enclaves

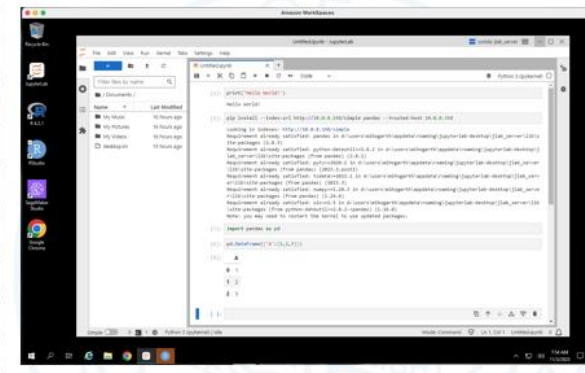


Enclave environment:

- AWS platform
- Python and R for analyses
- Promotes team science (data scientist, statistician, domain researcher)



RStudio



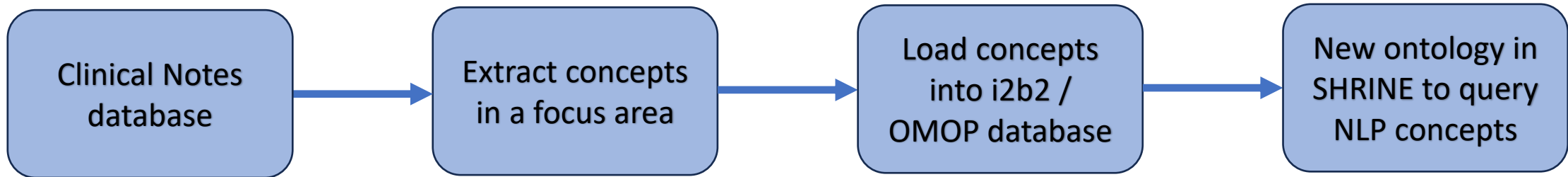
Jupyter Notebook

Examples of Ongoing Enclave Use Cases

- Characterizing incidence and causes of postpartum hemorrhage
- Validating machine learning model that predicts early progression of CKD to ESRD
- Application of causal inference models for repurposing drugs for dementia prevention

Natural Language Processing (NLP)

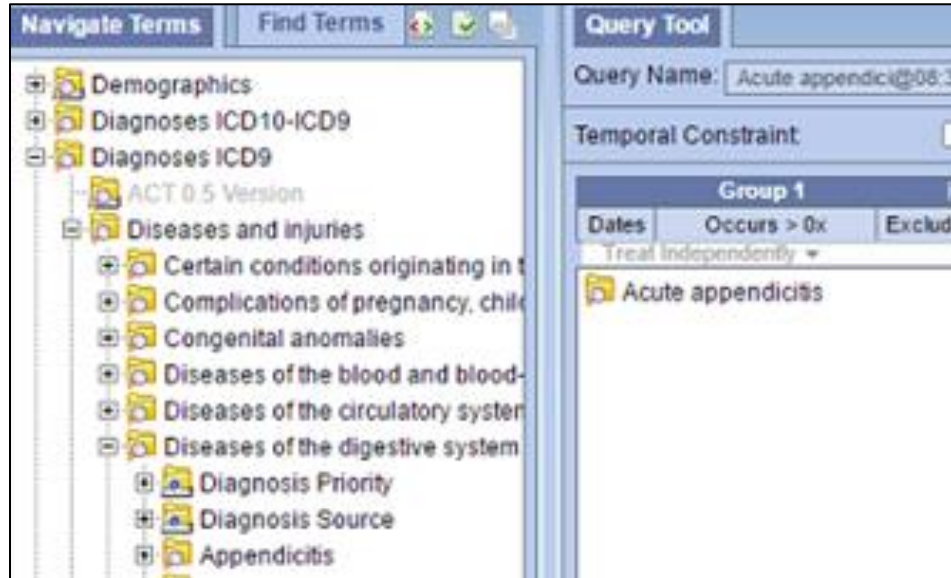
NLP working group consists of 12 sites where each site is developing a NLP pipeline to extract concepts for a focus area.



Focus areas:

- Rare diseases
- Headache
- Opioid Use Disorder
- Sleep
- SDOH – Housing instability
- Frailty
- ... more to come

Synthetic data (deployed in an i2b2 module)



Identify cohort using i2b2

Diagnosis	Age	Sex	Weight	Hgb
K35.20	34	F	58	12.3
K35.21	45	M	79	11.5
K35.30	24	F	86	14.6
K35.80	67	F	56	12.1

Diagnosis	Age	Sex	Weight	Hgb
K35.21	32	M	66	11.7
K35.30	55	F	81	12.9
K35.80	45	F	77	13.4
K35.80	18	M	54	17.1

Diagnosis	Age	Sex	Weight	Hgb
K35.30	44	F	83	13.4
K35.21	25	M	78	15.6
K35.21	34	M	65	12.4
K35.20	78	F	59	16.1
K35.30	39	F	66	13.6
K35.20	44	M	72	14.8
K35.30	55	M	81	16.7
K35.21	24	F	73	14.1

Create one or more datasets for analyses

Bottom Line

ENACT:

- Designed by investigators *for investigators*
- Hubs *do not transfer entire EHRs* to a third party
- Self-service *desktop EHR research* using patient counts
- Capacity for *complex EHR research*, NLP, AI using temporary enclaves
- *Does not rely* on writing code
- *Data Quality Program* for local + national use
- Will enable *clinical decision support*

Program Status

ENACT Rollout:

- De-identified *aggregated data*- available now
- *OMOP* interoperability- rolling out now
- Enclaves with *limited datasets*- use case testing, governance
- Enclaves with *PHI*- planning
- *Clinical decision support*- planning

An investigator-centered desktop tool for nationwide EHR research

An investigator-centered desktop tool for nationwide EHR research



EHR Research Platforms at CTSA hubs

Platform	Open to all CTSA's	Access to all patients	Federated Network	Data Transfer required	Analytical support	User friendly for non-informatics investigators	CDM Interoperability	Analyze large complex datasets	Automated Data Quality w Dashboard	NLP capable	Real-time, Interactive Query	Target user	Training time	Charge for running queries	Institutional control of data
ENACT	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Investigator Trainee	Minutes to an hour	No	Yes
PCORnet	No	Yes	Yes	No	Yes	No	No	Yes	No	Planned	No	Data scientist	-	Yes	Yes
N3C	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes*	Data scientist	Hours to days	No	No
TriNetX	No	Yes	Yes	No	?	Yes	No	?	?	No	Yes	General	-	No	?

Pod Submission Form Demonstration

Kerry James, CCOS

Overview of CTSA Pods

- The CTSA Pods are groups of 5-6 CTSA hubs convened with the goal of facilitating communication between NCATS, the CTSA Program Steering Committee (SC), and the CTSA Program hubs.
- There are currently 11 Pods.
- Each Pod is led by a current member of the SC.
- During the Pod meetings, Pod members are encouraged to discuss any CTSA Program related issues, questions, concerns, and suggestions they may have at their hub specifically or CTSA-wide.
- The Pod Lead will then communicate this feedback to the SC and NCATS via the Pod Submission Form and during SC meetings.

CTSA Pod Overview

- Pod Composition:
 - Pod Lead - a current SC member and UL1/UM1 PI of the 'lead hub' in the Pod
 - Pod Members - CTSA Program UL1/UM1 PIs from hubs in the Pod and Administrators (optional)
- Pod Lead Role:
 - Share information and updates from previous SC members
 - Gather ideas, questions, concerns and feedback from Pod members
 - Act on behalf of the Pod members by reporting ideas, questions, feedback to the SC and NCATS on a regular basis.
 - Summarize discussion points from Pod members on a variety of topics, projects, and NCATS activities, as requested by NCATS

CTSA Pod Assignments

University of Texas Medical Br Galveston

SC Pod Leader: Randy Urban

University of Michigan at Ann Arbor
Center for Clinical and Translational Sciences
(CCTS) at UTHealth Houston
University of Texas Hlth Science Center
University of Kansas Medical Center
Univ of Arkansas for Med Scis

University of Cincinnati

SC Pod Leader: Jessica Kahn

Indiana Univ-Purdue Univ at Indianapolis
University of Minnesota
University of Wisconsin-Madison
University of Florida
University of Iowa

Mount Sinai School of Medicine

SC Pod Leader: Rosalind Wright

University of Illinois at Chicago
Vanderbilt University Medical Center
Rockefeller University
Northwestern University at Chicago
Rutgers Biomedical and Health Sciences

Virginia Commonwealth University

SC Pod Leader: Frederick Gerry Moeller

New York University School of Medicine
Univ of Massachusetts Med Sch Worcester
Georgetown-Howard Universities Center for
Clinical and Translational Science
Yale University
University of Virginia

Albert Einstein College of Medicine

SC Pod Leader: Mimi Kim

Harvard Medical School
Columbia University
Washington University
University of Rochester
University of Chicago

Case Western Reserve University

SC Pod Leader: Grace McComsey

University of Kentucky
University of Alabama at Birmingham
Boston University Medical Campus
UT Southwestern Medical Center

CTSA Pod Assignments

University of California at Davis

SC Pod Leader: Theodore Wun

University of New Mexico Health Scis Ctr
University of California, San Francisco
University of Colorado Denver
University of Utah
University of Washington

Mayo Clinic Rochester

SC Pod Leader: Vesna Garovic

Tufts University Boston
Ohio State University
University of Southern California
Medical College of Wisconsin
University of California-Irvine

Pennsylvania State University

SC Pod Leader: Jennifer Kraschnewski

Weill Medical Coll of Cornell Univ
Johns Hopkins University
University of Pittsburgh at Pittsburgh
State University of New York at Buffalo
University of Pennsylvania

Emory University

SC Pod Leader: Elizabeth Ofilli

University of Miami School of Medicine
Univ of North Carolina Chapel Hill
Duke University
Medical University of South Carolina
Wake Forest University

University of California Los Angeles

SC Pod Leader: Arleen Brown

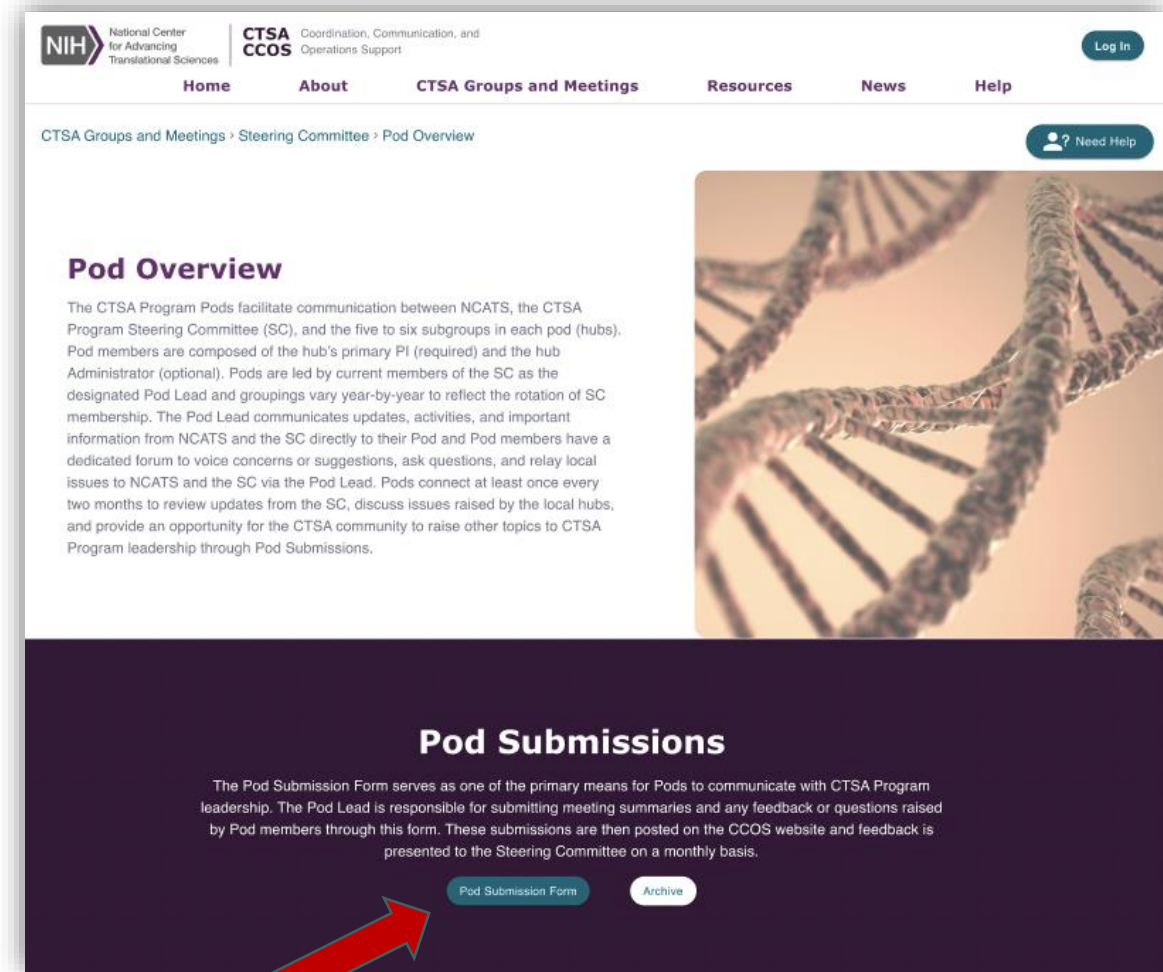
Stanford
University of California, San Diego
Scripps Research Institute
Oregon Health & Science University

Pod Submissions

- Pod Leads are asked to submit:
 - Pod meeting summary report
 - Pod feedback to the SC if any (e.g., questions, crowd-sourced topics, other feedback)
- Meeting summaries and feedback should be submitted in a timely manner – ideally within 4 weeks
- There is no specified meeting summary report format
- Meeting summaries and feedback will be publicly viewable
- Pod submission form is available on CCOS website

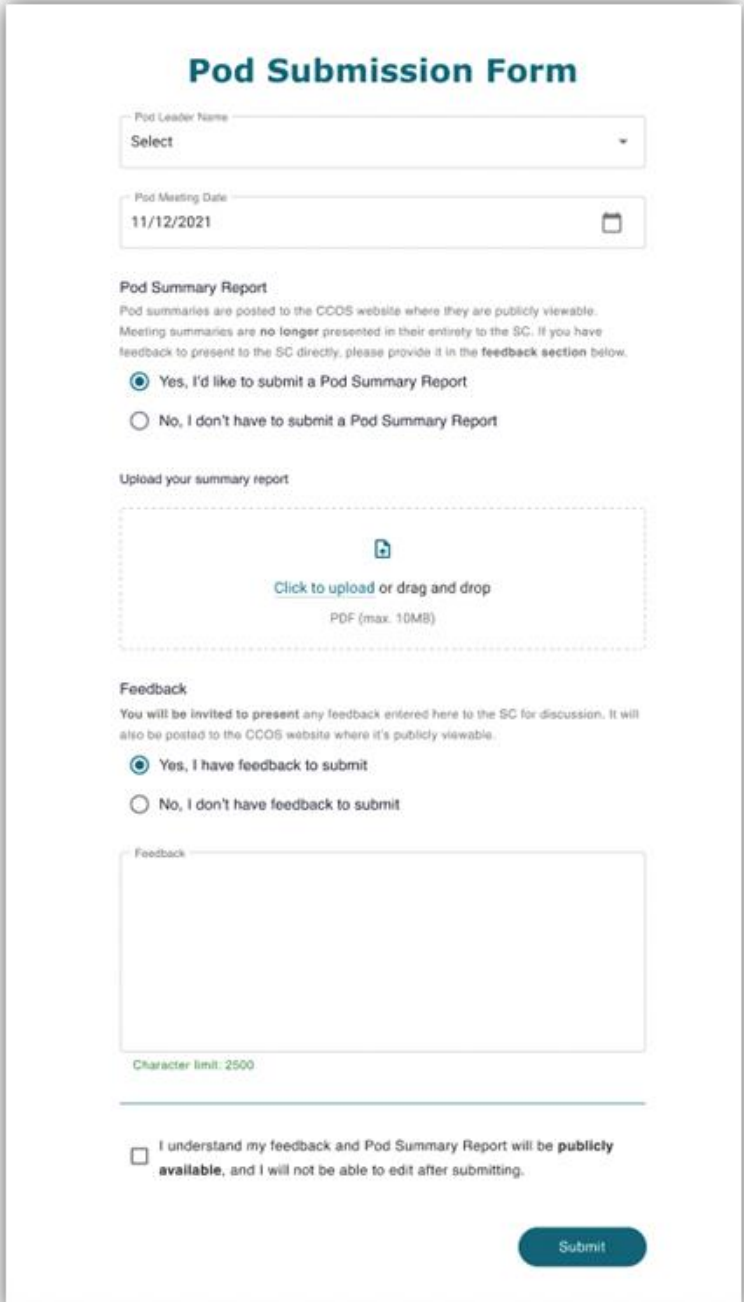
Pod Submission Steps

1. Login to your CCOS account
2. Once logged in, navigate to the [CTSA Program Steering Committee page](#).
3. Click '[Learn More](#)' under the Pods section to navigate to the Pods Overview page.
4. On the Pods Overview page, click the teal '[Pod Submission Form](#)' button to complete a Pod submission.



Pod Submission Steps

- Select your name under “Pod Lead”
- Enter the Pod meeting date
- Upload a PDF of Pod meeting summary report
- Enter or copy & paste text in the text box for the Pod feedback (2500 character limit)
- Click the check box and Submit



The screenshot shows a web form titled "Pod Submission Form". It includes a dropdown menu for "Pod Leader Name" with "Select" as the current option. Below it is a date picker for "Pod Meeting Date" showing "11/12/2021". A section titled "Pod Summary Report" contains explanatory text and two radio buttons: "Yes, I'd like to submit a Pod Summary Report" (selected) and "No, I don't have to submit a Pod Summary Report". This is followed by an upload area for the summary report, labeled "Upload your summary report", with a dashed box containing a file icon, the text "Click to upload or drag and drop", and "PDF (max. 10MB)". A "Feedback" section contains text about public availability and two radio buttons: "Yes, I have feedback to submit" (selected) and "No, I don't have feedback to submit". Below this is a large text area for feedback, with a "Character limit: 2500" note. At the bottom, there is a checkbox for "I understand my feedback and Pod Summary Report will be publicly available, and I will not be able to edit after submitting." and a blue "Submit" button.

Pod Submission Form

Pod Leader Name
Select

Pod Meeting Date
11/12/2021

Pod Summary Report
Pod summaries are posted to the CCOS website where they are publicly viewable. Meeting summaries are no longer presented in their entirety to the SC. If you have feedback to present to the SC directly, please provide it in the feedback section below.

☒ Yes, I'd like to submit a Pod Summary Report
☐ No, I don't have to submit a Pod Summary Report

Upload your summary report

Click to upload or drag and drop
PDF (max. 10MB)

Feedback
You will be invited to present any feedback entered here to the SC for discussion. It will also be posted to the CCOS website where it's publicly viewable.

☒ Yes, I have feedback to submit
☐ No, I don't have feedback to submit

Feedback
Character limit: 2500

☐ I understand my feedback and Pod Summary Report will be publicly available, and I will not be able to edit after submitting.

Submit

Pod Submission Archive

- To view or search for previous Pod Submissions go to the Pod Overview page
- Click “Archive” button
- Select the data range that you are interested in and hit ‘apply’

Pod Submissions

Search By: Search By selection needed: Start: End:

Sort By: Sort Order:

Pod Lead ↑	Institution ↓	Pod Meeting Date ↓	Summary Report ↓	Feedback? ↓	SC Discussion ↓
Prabodhan Fitzgerald	Institution	October 09, 2023	View PDF	Florem ipsum dolor dolor sit consectetur...	February 09, 2023
Prabodhan Fitzgerald	Institution	October 09, 2023	View PDF	Florem ipsum dolor dolor sit consectetur...	February 09, 2023

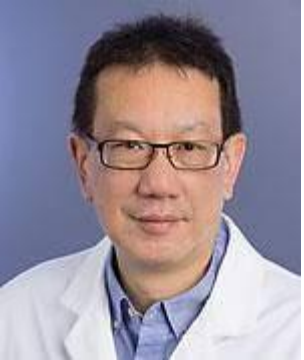
Who Can Submit in the Pod Submission Portal?

- Only Pod leads can submit content on the Pod submission form
- Please send CCOS names and emails of designated individuals who will submit on your behalf
 - You may email Steeringcmte@ccos.ctsa.io.

Pod Submission Links and Contacts

- Pod Overview page: <https://ccos-cc.ctsa.io/groups/steering-committee/pod-overview>
- Pod Submission page: <https://ccos-cc.ctsa.io/groups/steering-committee/pod-submission>
- CCOS Pod Contact: Lauren.fitzharris@icf.com and steeringcmte@ccos.ctsa.io
- Issues or errors with the Pod submission form: support@ccos.ctsa.io

Request for Volunteers



Ted Wun will be leading the planning committee for the In-Person Fall CTSA Meeting.

Are you interested in helping to plan this exciting, informative meeting?

We value your suggestions and hope you will become involved.

Please email Michael Kurilla at Michael.Kurilla@nih.gov or Ted Wun at twun@ucdavis.edu to express your interest.

NEXT MEETING

January 22, 2024
2:30-3:30pm ET



National Center
for Advancing
Translational Sciences

Adjourn

