

# UC TrialQuest

Bringing 5 UCs Together to Share  
Clinical Trial Data

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**B**iomolecular  
**R**esearch  
**A**cceleration  
**I**ntegration &  
**D**evelopment

# What is UC BRAID?



- Network of 5 UC Health campuses
- Reduces barriers
- Leverages resources
- Accelerates research through [collaboration](#)

Rachael Sak, RN, MPH, Director, UC BRAID  
David Grady, Program Coordinator

# UC BRAID Initiatives

**UC ReX** — UC-wide database of 14.5 million+ de-identified patient records

**Biobanking** — Implementing eConsent, preparing for NPRM

**Child Health** — Breaking down barriers to improve pediatric research

**IRB Reliance** — Charting the path toward Single IRB

# Problem...

No means of identifying clinical trials  
in real-time across the 5 UC  
academic medical centers

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Acceleration, Integration & Development



# Why not use ClinicalTrials.gov?

- Frequently out-of-date
- Incomplete records
- Erroneous information

# IRB Records as “Source of Truth”

- Institutional Review Boards review clinical trials to ensure human subjects’ protection
- Records updated daily
- Can be leveraged to minimize duplicative reviews if a study has been approved at another campus

# Enter UC TrialQuest

- Deployed in July 2014
- Database of over 4,500 clinical trials across 5 UC Health campuses
- Simple web-based searches designed to mimic industry-leading search engines
- Contains submission date, campus, status, study title, sponsor, PI



```
function updatePhotoDescription() {  
  if (descriptions.length > (page * 9) + (currentpage - 1) * 9) {  
    document.getElementById("photo" + i).innerHTML = descriptions[i];  
  }  
}  
  
function updateAllImages() {  
  var i = 1;  
  while (i < 10) {  
    var elementId = "foto" + i;  
    var elementIdBig = "bigImage" + i;  
    document.getElementById(elementId).innerHTML = descriptions[i];  
    document.getElementById(elementIdBig).innerHTML = descriptions[i];  
    i++;  
  }  
}
```

# UC BRAID Partnered with the Research Technology Team at UCSF's CTSI

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# UCSF Clinical and Translational Science Institute (CTSI)

The Clinical & Translational Science Institute (CTSI) at UCSF facilitates the rapid translation of research to improvements in patient and community health.



Clinical and Translational Science Institute / CTSI

Accelerating Research to Improve Health

UCSF

# **Who and What is TrialQuest For?**

# Phase 1: Use Cases

- Focus on research administration processes
- Allow contract negotiators to share terms, budgets
- Provide data foundation to enable analyses of UC clinical trial portfolio
- Identify opportunities for **Single-IRB**, mitigating redundant IRB reviews



# What is Single-IRB?

In the traditional model, an IRB review is required at each institution where a study takes place.

***5 sites = 5 full IRB reviews***

Single-IRB allows one IRB to serve as the IRB of Record while other institutions rely on that single review.

***5 sites = 1 IRB review***

# Single-IRB

- Mandated by NIH starting in May 2017
- Reduces duplicative reviews, saving taxpayer dollars and speeding trial activation
- Saves PIs and study teams significant effort

# UC TrialQuest

Demo

# How We Got There...





# Obtaining Data

1. Garnered support for data sharing from all 5 UC Health campus IRBs
2. Enlisted help of campus technology teams to generate weekly reports containing the last 3 years of clinical trials:
  - Pending approval
  - Approved & underway
  - Inactive

**Anirvan Chatterjee**

Director of Data Strategy, CTSI, UCSF

**But it wasn't easy...**

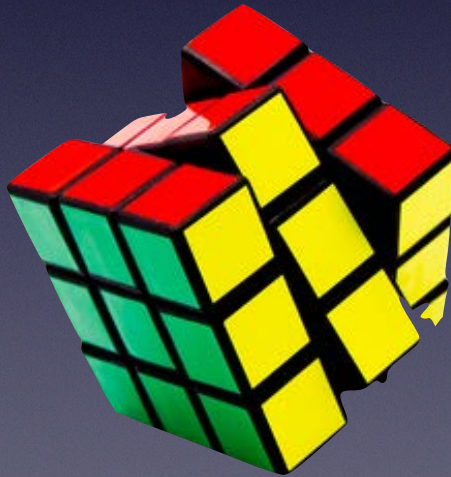


# Technical Challenges

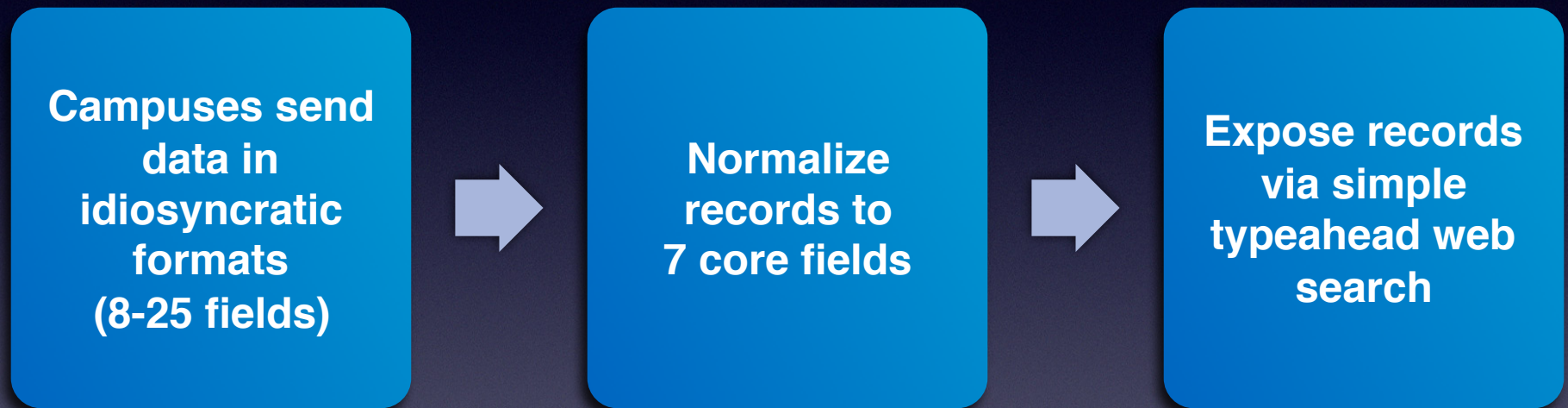
- 5 UC Health campuses use different IRB systems with no common ontology
- Data fields expressed differently between campuses
- Campuses' inability to export data in a common format

# Solution:

Accept data in whatever  
formats available



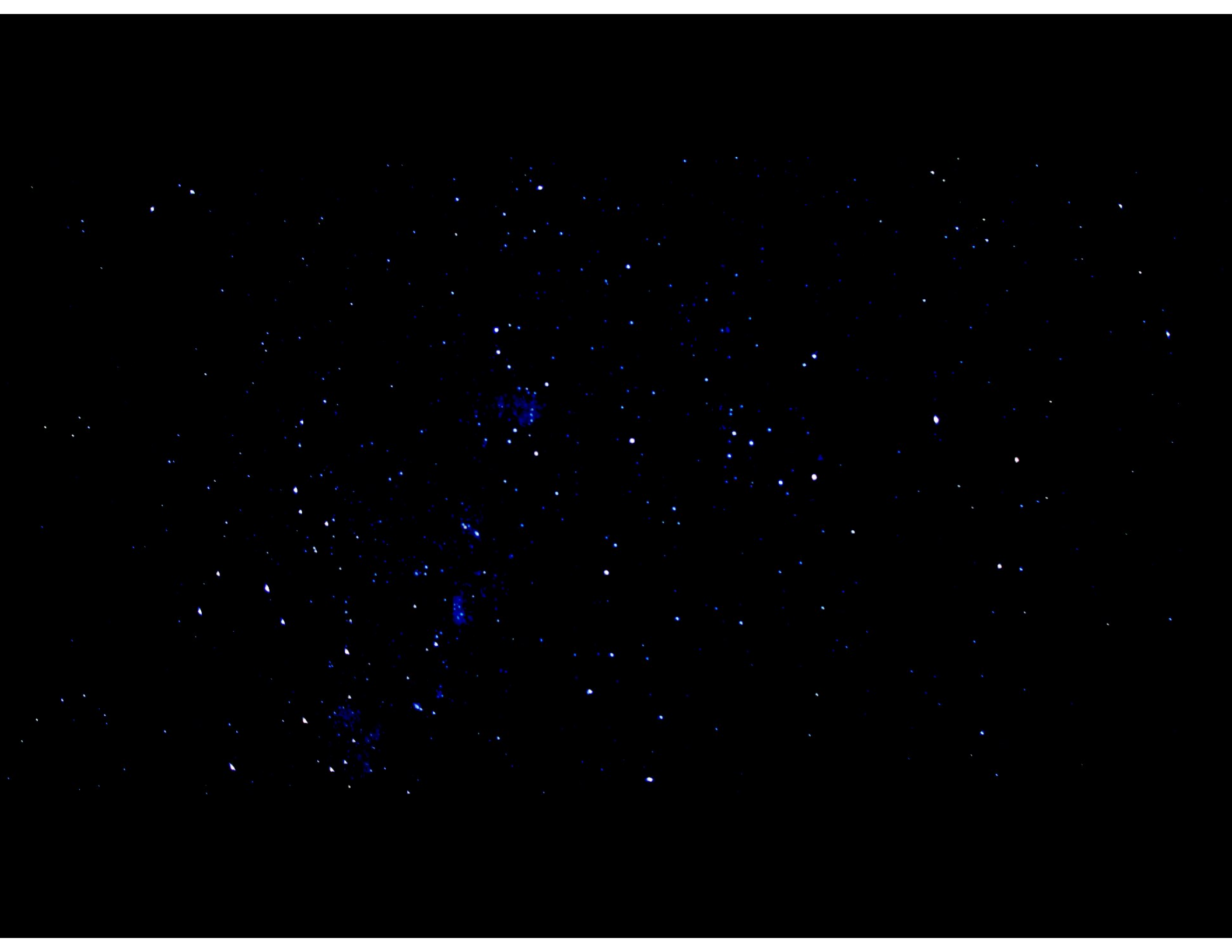
# Backend Data Workflow



# Front End

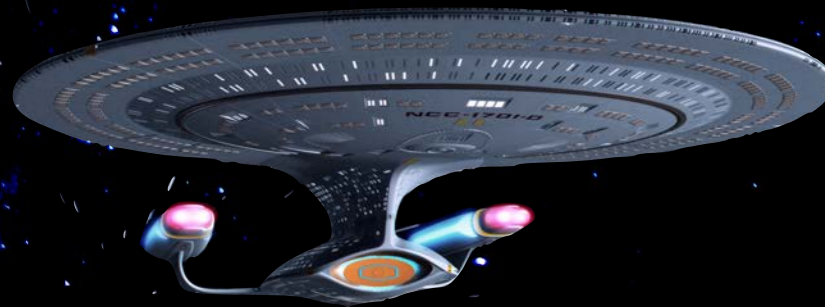
Goal: Make it incredibly easy for end users to find what they need

- Bootstrap web framework
- Data saved as a single JSON file
- DataTables.js to show/search records from JSON file
  - Plugins for CSV/XLS/PDF export and typeahead search highlighting
- Google Analytics to understand application usage



# TrialQuest

## The Next Generation







**New Focus on  
Researchers  
&  
Study Teams**

# Phase 2 Enhancements

- Single sign-on across all UC campuses
- Synonym support:
  - Researchers looking for specific genes in clinical trial titles can use any notation for a given gene (e.g., HER2 = ERBB2)
  - Searching by generic drug name also returns brand name drugs, and vice versa

# Phase 2 Enhancements (cont.)

- “Best Match” links added to studies without a [ClinicalTrials.gov](#) #
- “Click to Rely” feature
- Modular underlying structure to facilitate adding new campuses or sharing the tool with other institutions

# Phase II Features Demo

Engage!

**We couldn't have done it  
without you!**



# Contributions of UC-wide Technology Infrastructure

- Report generation and automated IRB data
- Competitive virtual machine hosting
- Single sign-on via Shibboleth to support all campuses
- Identity and Access Management
- Systems administration and security monitoring
- Firewall rules



# Future Plans

- Rollout Phase II this month. Collect feedback and analytics
- Include more types of studies, not just clinical trials
- Expand to include all 10 UC campuses
- Improve “Best Match” links to ClinicalTrials.gov
- More automated reporting and data import

# Partnerships and Thanks

- UC Office of the President/CIO's Office
- UC Santa Cruz Hosts
- UCSF CTSI Research Technology Team – Anirvan Chatterjee, Eric Meeks, Leslie Yuan
- Eric Mah, UCSD
- UC IRB Directors and Staff
- UC BRAID Contracting Workgroup
- UC BRAID/CTSA Communications Workgroup
- Kristen McCaleb, Megan Laurance





# And of course...

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# Campus technology and research information systems teams!

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**UC TrialQuest:**  
Winner of the 2016  
Larry L. Sautter  
Gold Award

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**Available at:**  
**[trialquest.ucsf.edu](http://trialquest.ucsf.edu)**

**End of this month!**

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# Questions?



[www.ucbraid.org](http://www.ucbraid.org)

innovation • collaboration • acceleration

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