

# HERON Training Approaches at the University of Kansas Medical Center

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# Overview: Motive

HERON, a self-serve system for searching clinical observational data at University of Kansas Medical Center, poses challenges

- Data confusion
  - Different organization of data than in the EMR
  - Date confusion
    - De-identification
    - Date ranges differ per data source
  - Incorrect data analysis
  - Tyranny of Choice
    - Integrating various sources of data (EMR, Billing, registries)
- Research in silos
- Time constraints for learning a new system

Corrupt the youth of America to use Informatics

# Training topics

- General i2b2 training
  - How to search
  - Same financial encounter
  - Temporal queries
  - Analysis tools
- Data sources and limitations within HERON
  - Date ranges for data sources in HERON
  - National standards (LOINC, ICD9, CPT, etc.)
- Requesting data
  - Data request processes for patient recruitment versus for analysis
- Raw HERON data
  - Data delivery methods
  - Data structure
  - General SQL and data manipulation

# How is information presented?

- Online resources
  - Help pages
  - Training videos
  - Presentation videos
  - Who's using HERON page
  - Query status page
- Help tab and help links in the HERON tool
- Annual Fishing Trip, an intensive training workshop
- Lunch and Learns
- Group presentations
- Train the trainers (research coordinators)
- Master of Clinical Research Course

# Lunch and Learns

Lunch and Learns on 1<sup>st</sup> and 3<sup>rd</sup> Tuesdays of each month

These training clinics provide assistance for investigators using HERON or REDCap. HERON allows you to explore clinical data from multiple systems, such as O2 (Epic EMR), billing data (IDX), KUH Tumor Registry, Biospecimen Repository, University HealthSystems Consortium, and more. Use HERON to kick start your research: chart review, participant recruitment, quality analysis, and prospective studies.

# Help inks within HERON

## HERON Research Data Repository

[KUMC Home](#) > [Frontiers](#) > [HERON](#)

### i2b2 Query and Analysis Tool

[Start HERON search](#)

[Who's Using HERON?](#)

[How busy is HERON?](#)

### Training/Help

[HERON Introduction](#)

[HERON Training Videos](#)

[HERON FAQ](#)

[Lunch and Learn Clinic](#)

[Request a Consultation](#)

### Investigator Requests

[HERON Sponsorship Request](#)

[HERON Data Usage Request](#)

[Frontiers Participant Registry \(RRRC\) Request](#)

### Oversight

[DROC Review Forms](#)

[Usage Audit Report](#)

### Other Tools

[REDCap](#)



## HERON Research Data Repository

HERON (Healthcare Enterprise Repository for Ontological Narration) is a search discovery tool that allows KUMC faculty members to search de-identified data from various hospital and medical center sources that include but are not limited to:

- Epic/O2 (the hospital electronic medical record),
- IDX (the clinical billing system),
- KU Hospital Cancer Registry,
- KU Biospecimen Repository,
- REDCap (selected projects),
- Social Security Death Index, and
- University HealthSystem Consortium (Quality Measure Data).

By combining the various data sources, researchers can look at the data in new ways not available when viewing data in one source at a time.

### HERON research impact

HERON is supported in part by funds from CTSA Award #UL1TR000001 and Patient-Centered Outcomes Research Institute (PCORI) Program Award #CDRN-1306-04631

### HERON Access Criteria

1. You are a qualified faculty member or are sponsored by a faculty member. Access to de-identified data is non-human subjects research and does not require approval by the HSC/IRB.

Tamara McMahon (tmcmahon)

1.  KUMC Faculty?  
or  
 executive?
2.  **Human subjects training is complete and current?**
3.  **Signed system access agreement?**

### Human Subjects Training

Our records show *Human Subjects Research* completed 2015-06-25 17:44:41; expires 2018-06-24 17:44:41.

### Data Use Agreement

The [HERON Data Use Agreement](#) must be signed by all study team members before extracted data can be released.

### Problems? Questions? Ideas?

Let us know what you think:  
[Gripe/Praise](#)

### Citing HERON

Any publication that results from a project utilizing HERON should cite grant support (CTSA Award # [UL1TR000001](#)) and HERON:

*Expressing observations from electronic medical record flowsheets in an i2b2 based clinical data repository to support research and quality improvement.*

# Help Links within HERON

i2b2 Query & Analysis Tool Project: HERON Wiese Slough (data through January 2017) User: Tamara McMahon Find Patients | Analysis Tools | Message Log | i2b2 Help | HERON Help | Gripe | Logout

Navigate Terms Find **Help**

## Training Videos

If you need help getting used to the basics of using HERON, don't worry, we have some video demonstrations for you. Watching these three takes just over 10 minutes.

- Simple Search: "Introduction on creating and executing a simple search. Video demonstrates browsing and searching for terms in addition to placing concepts into groups for searching."
- Interface Overview: "Introduction to functionality available in the HERON interface including options to focus or expand your search."
- Temporal Constraints: "Introduction to independent search constraint and the same financial encounter constraint."

## HERON Contents Summary

Click here for the HERON blog article that summarizes the amount and sources of information that can be queried.

## FAQs

If you're asking yourself one of these questions, check out the HERON FAQs page for answers.

- Can I access HERON off campus?
- How do I search HERON? (see above)
- What data is in HERON? (see above)
- How is the data de-identified?
- Can I get more than just the number of patients that meet my search criteria?
- How do I get a list of patients I can contact who meet my search criteria?
- I need help...what do I do?

## Running Previously Constructed Queries:

If you want to re-run a previous query, don't drag and drop it into one of the big "Group" panels used for constructing queries. Instead, drop into the "Query Name" field above those panels.

## Query Tool

Query Name: \_\_\_\_\_

Temporal Constraint:

Group 1			Group 2			Group 3		
Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude
Treat Independently ▾			Treat Independently ▾			Treat Independently ▾		
drop a term on here								

Run Query Clear 0 Groups

Show Query Status Graph Results Query Report

# General HERON

HERON introduction: <http://frontiersresearch.org/frontiers/HERON-introduction>

HERON training videos: <http://frontiersresearch.org/frontiers/informatics-training-videos>

FAQ: <http://frontiersresearch.org/frontiers/HERON-FAQs>

Understanding physician notes: <http://frontiersresearch.org/frontiers/physician-notes>

HERON Wiki: <https://informatics.kumc.edu/work/>

Who is using HERON?

Promotes collaboration through a list of HERON users with affiliated department

How busy is HERON?

List of currently active searches, completed searches, and search errors



# General HERON

How to sponsor someone for HERON access

<http://frontiersresearch.org/frontiers/HERON-Sponsorship>

How to request data

<http://frontiersresearch.org/frontiers/data-set-instructions>

How to search for members of the Frontiers Research Participant Registry

<http://frontiersresearch.org/frontiers/participant-registry>

How to prepare a REDCap project for integration into HERON

<https://informatics.kumc.edu/work/blog/2013/11/redcap-to-heron>

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# HERON Data

Receiving HERON data:

<http://frontiersresearch.org/frontiers/HERON-data-receipt>

Format of raw data:

<https://informatics.kumc.edu/work/wiki/HERONTrainingMaterials/HeronDataSet>

Transformed values:

<https://informatics.kumc.edu/work/wiki/HERONTrainingMaterials/HeronTransformedValuesSimple>

Using SQLite in R:

<https://informatics.kumc.edu/work/wiki/HowToUseRForHeronSQLiteDataFile>

R packages for using HERON data:

<https://informatics.kumc.edu/work/wiki/HowToInstallRPackages>

# HERON Fishing Trips

These pages include the workshop agenda and links to recorded portions of the annual HERON Fishing Trip (a training workshop). We allow for in-person and remote attendance to all portions of the workshop except the hands-on portion.

2016: <http://frontiersresearch.org/frontiers/2016FishingTrip>

2015: <http://frontiersresearch.org/frontiers/2015FishingTrip>

2014: <http://frontiersresearch.org/frontiers/FishingTrip2014>

2013: <http://frontiersresearch.org/frontiers/FishingTrip2013>

# Course: Master of Clinical Research

## Independent Studies

- Spring 2015:  
<https://informatics.gpcnetwork.org/trac/Project/wiki/HERONIndependentStudy>
- Spring 2016:  
<https://informatics.gpcnetwork.org/trac/Project/wiki/MIIIndependentStudy2016>

## Fall 2016 PVRM868 Biomedical Informatics Driven Clinical Research Class

- One exam focuses on how to use i2b2 for identifying
- One exam assessing SQL and manipulating the EAV data from HERON
- <https://informatics.gpcnetwork.org/trac/Project/wiki/PVRM868BiomedicalInformaticsDrivenClinicalResearch2016>