Developing Frontiers Biomedical Informatics Capabilities

Russ Waitman, PhD
Associate Professor, Director Medical Informatics
Department of Biostatistics
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Outline

- Specific Aims 4, 3, 2, 1
- Aim 2 (HERON) status
- Immediate Focus on Aim 1 (RAVEN) and public website
  - Facilitate collaboration intra Frontiers and subsequently nationally
  - Facilitate measurement and evaluation for Lauren, Rick, and Walt
- Public Website
- Additional strategic informatics connections
Frontiers Biomedical Informatics Aims

1. Provide a HICTR portal for investigators to access clinical and translational research resources, track usage and outcomes, and provide informatics consultative services.

2. Create a platform, HERON (Healthcare Enterprise Repository for Ontological Narration), to integrate clinical and biomedical data for translational research.

3. Advance medical innovation by linking biological tissues to clinical phenotype and the pharmacokinetic and pharmacodynamic data generated by research cores in phase I and II clinical trials (addressing T1 translational research).

4. Leverage an active, engaged statewide telemedicine and Health Information Exchange (HIE) effort to enable community based translational research (addressing T2 translational research).
Aim 4: Leverage telemedicine and Health Information Exchange (HIE) for community based translational research

- **Good news:** The HITECH Act and “meaningful use” are a landmark event for Research and Health Information Technology
  - State Health Information Exchanges
  - Regional Extension Centers
  - Incentives (then penalties) for Providers
- **Bad News:** this is complicated by having two states so it will take time to unfold. But, this gives us time so our lessons learned locally can be applied regionally

- In years 1 and 2, the place we will probably have an impact is providing Telemedicine, CRIS, and REDCap for regional and rural research.
Aim 3: Link biological tissues to clinical phenotype and our research cores’ results

- Support Cancer Center, IAMi, and bridge to Lawrence Research
- **First focus:** Incorporate clinical pathology and biological tissue repositories with HERON and CRIS to improve cohort identification, clinical trial accrual, and improved clinical trial characterization
  - Aligned with existing enterprise objectives to improve biological tissue repository information systems
  - Clinical trial accrual identified by many as a weak point institutionally
  - Target both biological research specimens and routine clinical pathology
Aim 3 & 4 Progress

- Aim 3 starting with Biological Specimen Repository (BSR) integration with HERON
  - In alignment with supporting NCI designation for KUCC
  - BSR will also support CTSA

- Aim 4: purchased and will integrate Social Security Death Master File to show potential of integration with national/regional data sources
Aim 2: Create data “fishing” platform HERON

- Develop business agreements, policies, data use agreements and oversight.

- Implement open source NIH funded (i.e. i2b2) initiatives for accessing data.

- Transform data into information using the NLM UMLS Metathesaurus as our vocabulary source.

- Link clinical data sources to enhance their research utility.
Aim 2 HERON Progress

- September 2010 the hospital, clinics and university signed a master data sharing agreement to create the repository.
  - Executive Committee and Data Request Oversight Committee have met for almost a year providing guidance and defining process
- Low barrier to access de-id (IRB not required): sign system access agreement, view-only access is allowed but logged
- ~500,000,000 facts, 1.8 million patients, dense data on 250,000
- Process becoming stable (Sept -> Dec, Feb -> Apr, Apr -> June)
- New hardware installed
- Will upgrade to new version of i2b2 in the Fall (Ex: identify admission versus problem list diagnoses)
- Track progress: http://informatics.kumc.edu/work/roadmap
Aim #1: Create a Portal and Consult

- Bring together existing resources
  - Translational Technologies Resource Center
- Link to national resources
  - [www.vivo.org](http://www.vivo.org) – Facebook for researchers (also “Profiles”, Meet the Experts on Bibapp)
  - [www.eagle-i.org](http://www.eagle-i.org) – National resources (rodents, RNAi, MRI scanners to patient registries)
- ResearchMatch.org
- Develop tools to measure and track our investment
  - Pilot funding requests, electronic Institutional Review Board process
- Provide a hands on informatics consult service
  - Also organize existing resources
Why Portal versus Public Website?

- Having people login is key to customizing the experience and tracking (think Facebook)
- Similar to CTSAWeb versus CTSAWiki
- Can share more trusted investigators than the Wild West of the internet.
  - Price lists
  - Access to HERON
  - Quick links over time to the status of their research projects and funding requests
Public Website: frontiers.kumc.edu

- Developer: Karen Chinn
- Public Affairs: CJ Janovy
- Link to investigator portal
Public Website Informs Externally

Frontiers: The Heartland Institute for Clinical and Translational Research

KUMC Home > Frontiers > Researcher Resources > Clinical and Translational Research Education Center (CTREC)

Clinical and Translational Research Education Center (CTREC)

As HICTR's home for clinical and translational research training programs, The Clinical and Translational Research Education Center's (CTREC) mission is to accelerate clinical and translational research in the Midwest by recruiting and training a new cadre of highly productive, multidisciplinary clinical and translational investigators in Kansas and the Kansas City region.

The CTREC training programs will produce scientists capable of matching medical needs to basic science discoveries and scientists capable of transferring new findings to the clinical setting and to the community at large. By building on our recent success in clinical research training, including the establishment of a highly successful K30 Clinical Research Curriculum Program, a Master of Science in Clinical Research (MS-CR) degree, and a new Certificate in Clinical and Translational Research, the CTREC is designed to meet the growing demand for translational scientists nationally, but particularly in the Heartland.

CTREC Research training will be organized and supported through five training programs.

1. Pre-doctoral trainees will be able to receive more extensive training in the T32 Clinical and Translational Research Training Program (CTREC-T32).
Portal: Access + Measurement

VICTR Funding Requests

All VICTR funding requests are managed through StarBRITE. Research teams may petition for any amount of funding through our “Pick List” application.

Scientific justification and review level is triggered by the amount of funding requested through the “Pick List”
The Institutional Review Board (IRB) page displays all studies where you are the Primary Investigator, Contact, or are on the list of Key Study Personnel.

<table>
<thead>
<tr>
<th>ID</th>
<th>PI</th>
<th>STATUS</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>050926</td>
<td>Judith W. Dexheimer</td>
<td>Active</td>
<td>Implementation of Pneumococcal Vaccination Reminder System in the Emergency Department</td>
</tr>
<tr>
<td>090124</td>
<td>Thomas R. Campion</td>
<td>Active</td>
<td>Assessing Data Quality in Manual Entry of Blood Glucose Values</td>
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<tr>
<td>070078</td>
<td>Allison K. Beck (McCoy)</td>
<td>Inactive</td>
<td>Analysis of a Renal Dosing Monitor to Detect and Prevent Adverse Drug Events</td>
</tr>
<tr>
<td>071324</td>
<td>Josh F. Peterson</td>
<td>Inactive</td>
<td>Pre-Admission Medication List Verification Study</td>
</tr>
</tbody>
</table>
Price Checker

Price Checker is your source for quick access to frequently requested research discounted prices. If you do not find the price you need, or not sure if the procedure is what you need, submit a price request to the Department of Finance in FACTr My Pricing Requests.

Price Checker Features

- New items are added frequently
- Prices reflect Vanderbilt approved research discounted prices
- Price Checker includes some prices dependent on the location the service is provided
- Prices do not currently reflect prices for drugs or supplies related to procedures
- Prices are subject to change
Price Checker example
Aim 1 Prep: Portal for Informatics Tools

Welcome to Raven, the Biomedical Informatics Portal at KUMC. Raven's goal is to collect tools for translational research and connect informatics to our customers.

Currently, we provide the following tools:

- **CRIS**: a Comprehensive Research Information System
- **REDCap**: a web-based application to support case report form data capture for research studies
- **HERON**: the HICTR participant registry accessed through i2b2
- **TRAC**: our current development process

Ideas? Problems? Questions? Contact us at heron-admin@kumc.edu. Check Other contact information

If you have a project request, please use our convenient project request form.
REDCap, http://redcap.kumc.edu

- Self service tool to help investigators manage data
  - Piloted with Health of Public course this winter
  - 26 projects in production 52 in development
  - 136 users
- Re-purpose for CTSA tracking: surveys, forms, and data collection/evaluation.
- Lance Cummins-Brown with CTREC has taken lead with this approach
- Examples: Applications for KL2, request access to RAVEN
CTREC Applications

CTREC KL2 Application

This application packet will serve as your formal application for the CTREC - KL2 mentored career development award. You will be able to “Save & Return Later” which will allow you to save your progress and return where you left off to complete the survey in the future. Page limitations have been noted for certain sections. Please adhere to them as one of the criteria for KL2 review (and NIH review) is the ability to describe your research plan within the page limits.

1. The application consists of two parts:
   a. Online Application: The application consists of an electronic form completion and uploading documents. All documents should be uploaded in either word or pdf format.
   b. Support Packet: Applicants will be asked to download specific forms from the application that must be completed, signed and returned. Applicants will need to secure the signatures of their Primary Mentor's and department/division chair in addition to securing their letters of support. Applicants can upload these signature forms into their online application or e-mail them to Lance Cummins-Brown at lcummins-brown@kumc.edu.

All applications and forms must be completed and submitted by 5 pm on Friday July 1, 2011:

If you have any questions or difficulty with the application, please contact:
Lance Cummins-Brown at 913-945-6504 or by e-mail at lcummins-brown@kumc.edu

CTREC team evaluates applicants
With separate REDCap survey

KL2 Score Sheet

Please complete the KL2 Score Sheet for each applicant you have been asked to score.

Thank you!

1) Applicant Name

2) On a Scale of 1 - 9 (with 1 being the best score) Please score the Overall quality of the Candidate based on their ability to meet the KL2 Program objectives:

   • Potential to develop as an independent and productive clinical researcher who will be able to implement high quality clinical and translational research.
   • Ability to obtain independent funding in patient-oriented research and to develop a successful academic career
   * must provide value
Portal components: where are we?

- Moving to new portal
- Prototype at https://bluegill.kumc.edu/raven/
- Resolving technical issue of firewalls and isolating the clinical repository, HERON
- Applying for an account process as REDCap Survey
- https://redcap.kumc.edu/surveys/?s=bKaC6s
Central Authentication like myKUMC

KUMC Central Authentication Server (CAS) Login

This is the single point of sign-on to many KUMC-based web resources. After logging in below, you will be able to use other CAS-enabled sites without being prompted.

Userid:  
Password:  
LOGIN

CLOSE YOUR BROWSER to log out.

Forgot your password?

Do not bookmark this page. For assistance contact Customer Support at 913-588-7995.
We Need You to work with Us: Content
Dividing up Sections and Consulting

- Judy: CPH, Library, Telemedicine, Ethics (Steve Fennel)
- Gerry: TTRC, Bioinformatics, PK/PD, PMOC
- Russ: Regulatory, CTREC, Pilots, CTSU (Cathy Price) Evaluation, Biostats

- Had our first Frontiers Informatics Clinic this Tuesday
  - Biweekly, Tuesdays, 4pm in Dykes Library, room 1040
  - Informal session for HERON, REDCap
Evaluating National Resources

- Connecting to investigators: Judy
  - “Meet the Experts” KUMC Library a BibApp
  - vivoweb.org and Profiles also used
- Connecting to Translational Resources: Gerry
  - www.eagle-i.org
- Connecting to Patients for clinical Trials: Russ
  - Researchmatch.org
  - streamlining multisite IRB
- Later: evaluate support internal/external connections and research via wikis.
Additional Strategic Connections

- Google Fiber: engaging with Google, Kaufmann, and KU-L
- Steve Fennel directs KUMC Telecommunications Outreach
  - Potential for DemoDays and support for research
  - Staying abreast also of the KC Chamber of Commerce “Big 5 Ideas for Kansas City” initiative.
    - ... tripling the CTSA budget beat out the idea of an exotic petting zoo in the Crossroads
-Reached out as well to Cerner
  - They’ve recently started using i2b2 as well for data warehouses for their customers.
  - Potential for collaboration around informatics research and general support of translational research with HealthFacts