

From Bench to Bedside and Beyond: Potential Uses of VIVO in an Academic Medical Center

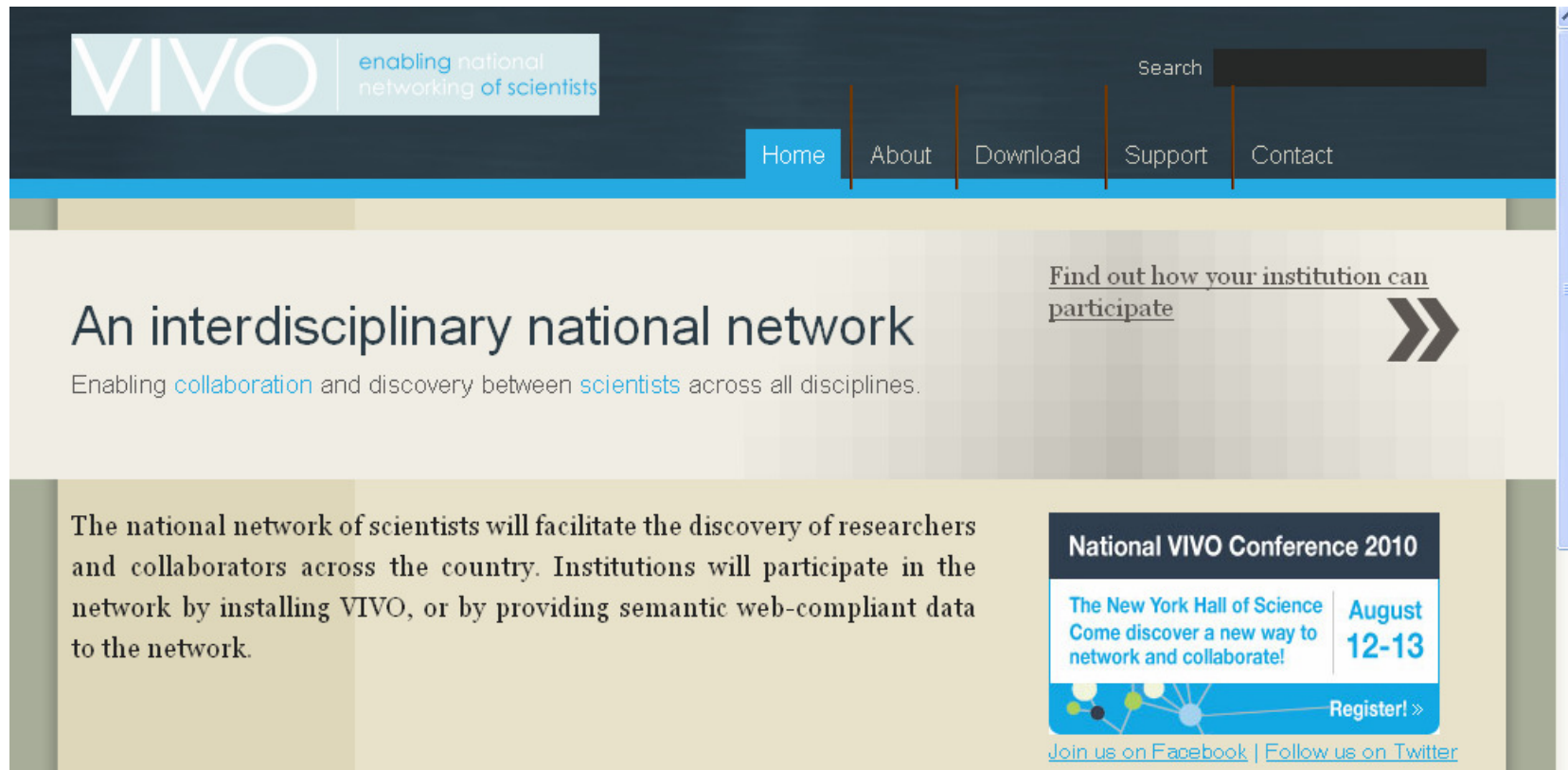
John C. Kairys, MD, FACS¹; Jack London, PhD²; Karl Steiner, PhD³

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²Research Professor Cancer Biology and Director, Informatics Shared Resources, Kimmel Cancer Center, Thomas Jefferson University

³Senior Associate Provost for Research Development and Professor, Electrical and Computer Engineering, University of Delaware

What is VIVO?



The screenshot shows the VIVO website homepage. At the top left is the VIVO logo with the tagline "enabling national networking of scientists". To the right is a search bar. Below the logo is a navigation menu with links for Home, About, Download, Support, and Contact. The main content area features a large heading "An interdisciplinary national network" followed by the text "Enabling collaboration and discovery between scientists across all disciplines." To the right of this text is a call-to-action button that says "Find out how your institution can participate" with a right-pointing arrow. Below this is a section titled "The national network of scientists will facilitate the discovery of researchers and collaborators across the country. Institutions will participate in the network by installing VIVO, or by providing semantic web-compliant data to the network." To the right of this text is a promotional box for the "National VIVO Conference 2010" held at "The New York Hall of Science" from "August 12-13". The box includes the text "Come discover a new way to network and collaborate!" and a "Register!" button with a right-pointing arrow. At the bottom of the box are links to "Join us on Facebook" and "Follow us on Twitter".

VIVO enabling national networking of scientists

Search

Home About Download Support Contact

An interdisciplinary national network

Enabling [collaboration](#) and discovery between [scientists](#) across all disciplines.

[Find out how your institution can participate](#)

The national network of scientists will facilitate the discovery of researchers and collaborators across the country. Institutions will participate in the network by installing VIVO, or by providing semantic web-compliant data to the network.

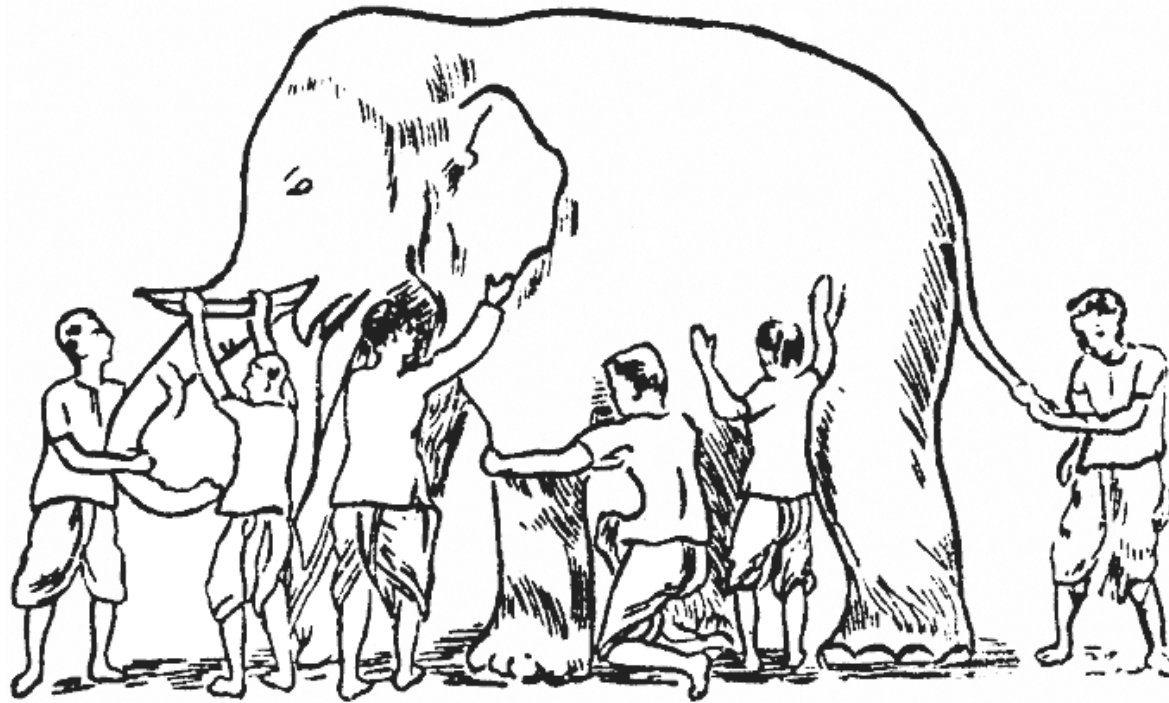
National VIVO Conference 2010

The New York Hall of Science
Come discover a new way to network and collaborate!

August 12-13

[Register!](#)

[Join us on Facebook](#) | [Follow us on Twitter](#)



<http://www.agileadvice.com/archives/BlindMenElephant.png>

Academic Medical Centers (AMC's)

- Highly complex organizations
- Data sources fragmented
- Research efforts varied
- Wide variety of personnel
- Many needs are the same, but...
- Needs of clinicians are different than basic scientists
 - Other measures besides publications and grants
 - Additional licensing and accreditation requirements
 - Direct interaction with public

At this meeting, I'm encouraged by...

- Focus on assessing faculty's needs
- Measurement of clinical interests
 - SNOMED
 - ICD-9
- CV management (although a “moderate” priority)
- Identity management
- Import/export of data across wide range of sources
- Commercial vendor interest

Other efforts to link researchers

- COS Enterprise
- COS Profiles
- COS Scholar Universe
- Profiles (Harvard)
- Collexis
- ScienceWire
- Expertise @ Maryland (UMD)
- CI KNOW (NW)
- Lattice Grid (NW)
- Loki (U of IA)
- Research Accelerator (Yale)
- Epernicus Solutions
- INDURE - Indiana Database of University Research Expertise
- Collaborative Partnership/Profile System

Courtesy of: Holly Falk-Krzesinski, PhD, Pamela L. Shaw, MS, MSLIS, and Laura Wimbiscus-Yoon, MS

Other efforts to link researchers (cont'd)

- MizzouLinks
- LinkedIn
- Yaffle (Memorial University, Newfoundland, Canada)
- SciVal Spotlight (Elsevier)
- InCites (Thomson Reuters)
- Research gateway - FRIP, Digital Vita (UPMC)
- Share - Confluence (CHOP)
- FEDS Database (UPenn)
- SoNIA - Social Network Image Animator (Stanford)
- Faculty Interest Database (TJU)
- Stanford Community Academic Profiles-CAP
- GENIUS (InfoEd)

Courtesy of: Holly Falk-Krzesinski, PhD, Pamela L. Shaw, MS, MSLIS, and Laura Wimbiscus-Yoon, MS

Other efforts to link researchers (cont'd)

- 2Collab (Elsevier)
- BioMed Experts (Collexis)
- CT SciNet
- PLoS ONE
- The Scientist Network

Barriers to success

- “Local” solutions only
- Too focused on one “group”
- Not embraced by national organizations
- Limited data available on site
- Lack of sound ontology
- Information not updated regularly

Barriers to success

- Not user-friendly
 - Manual data entry
 - Redundant data entry
 - Insufficient interfaces with internal/external systems
- Concerns of faculty
 - Lack of privacy
 - Lack of control
- No added “added value” for faculty or administrators
- Use is not mandatory

Barriers to success

- Faculty are in many “silos”
 - Different departments / schools
 - Different educational background / training
 - Lack of respect / trust / understanding
 - “But they are _____’s. What do they know?”
 - You don’t know who you don’t know
 - “Town vs. gown “syndrome

Breaking down barriers

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VIVO enabling national networking of scientists

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Home About Download Support Contact

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National VIVO Conference 2010

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Register! »

Join us on Facebook | Follow us on Twitter

Breaking down barriers - a suggestion (?)

VIVO enabling national networking of scientists

Search

Home About Download Support Contact

An interdisciplinary national network

Enabling collaboration and discovery between **scientists** across all disciplines.

experts (?)

Find out how your institution can participate [»](#)

The national network of scientists will facilitate the discovery of researchers and collaborators across the country. Institutions will participate in the network by installing VIVO, or by providing semantic web-compliant data to the network.

National VIVO Conference 2010

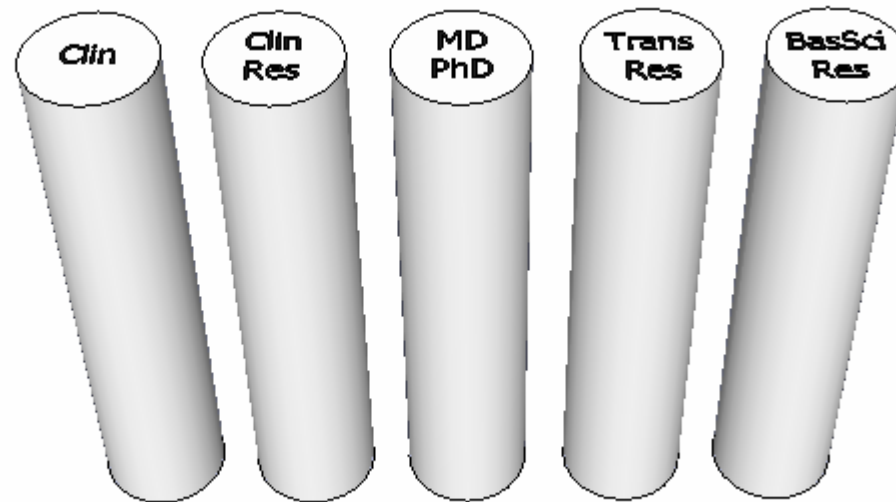
The New York Hall of Science
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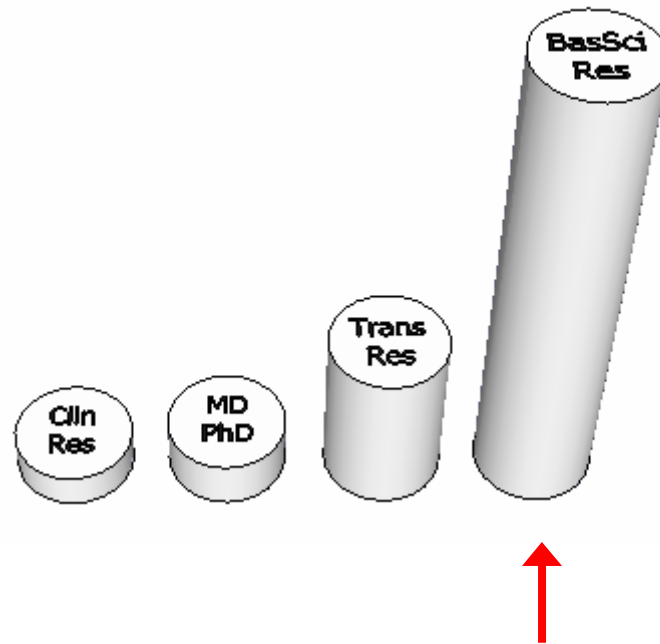
Register! [»](#)

[Join us on Facebook](#) | [Follow us on Twitter](#)

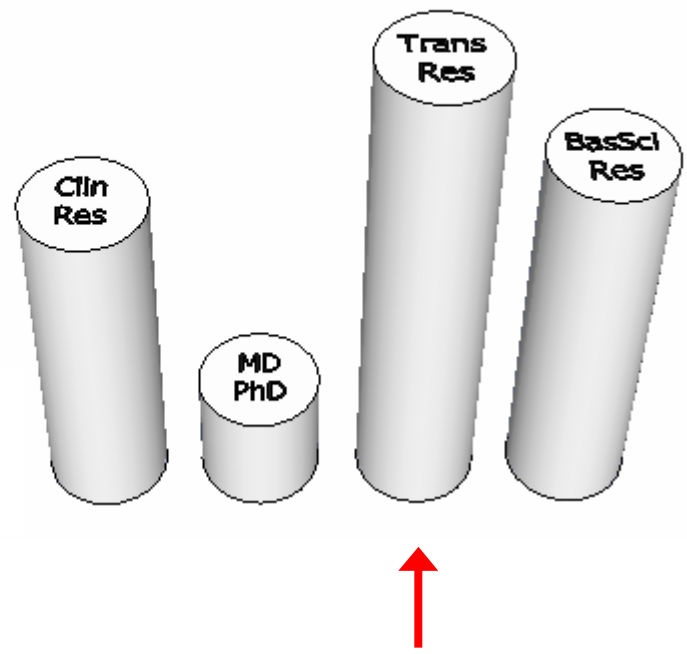
Silos - Who knows who?



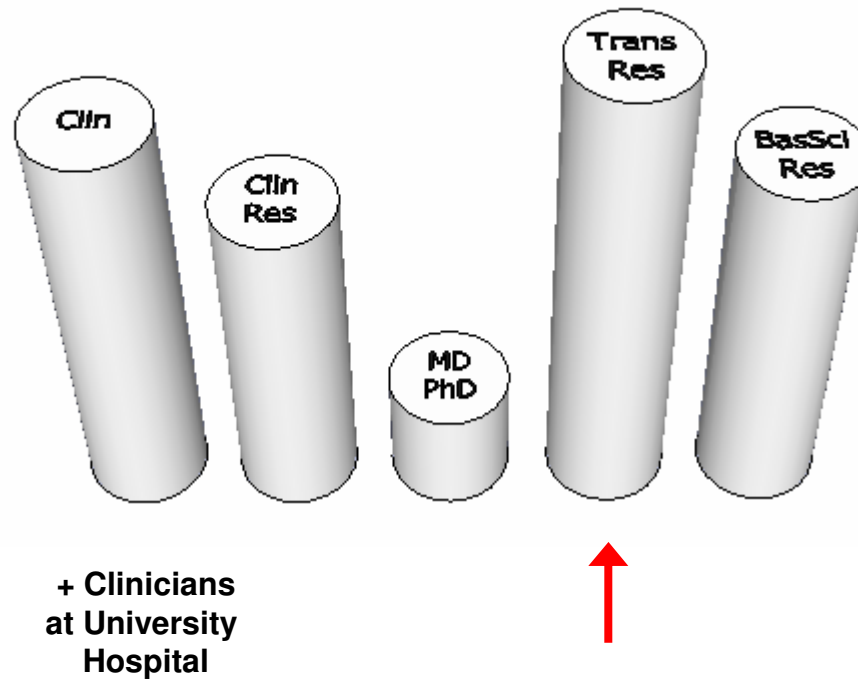
Basic Science Researcher



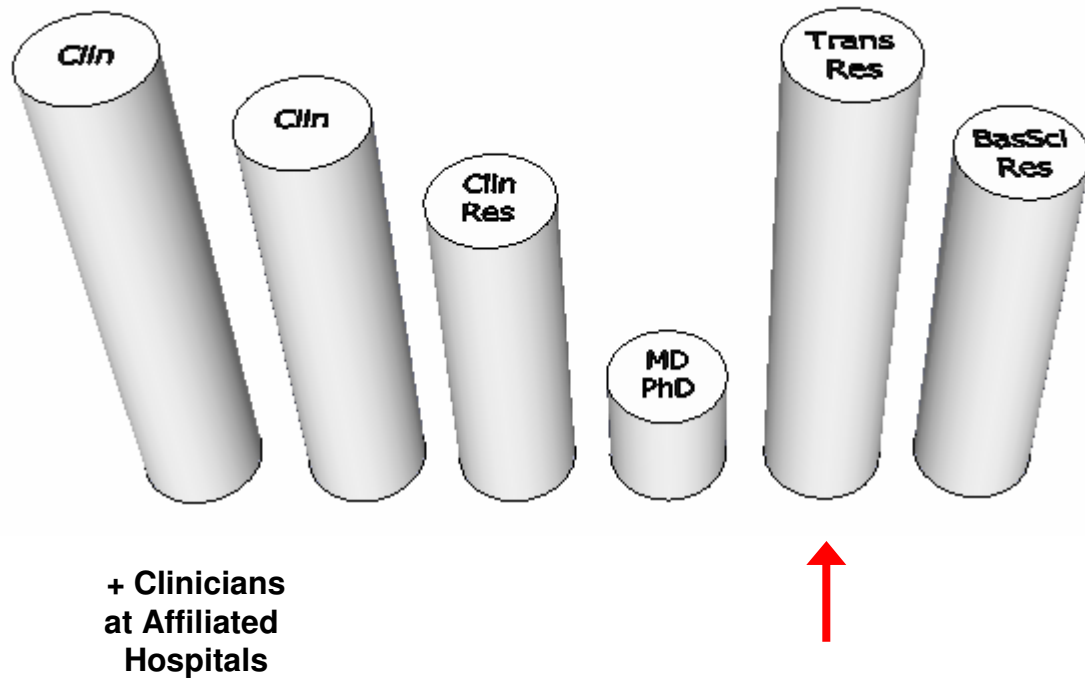
Translational Researcher



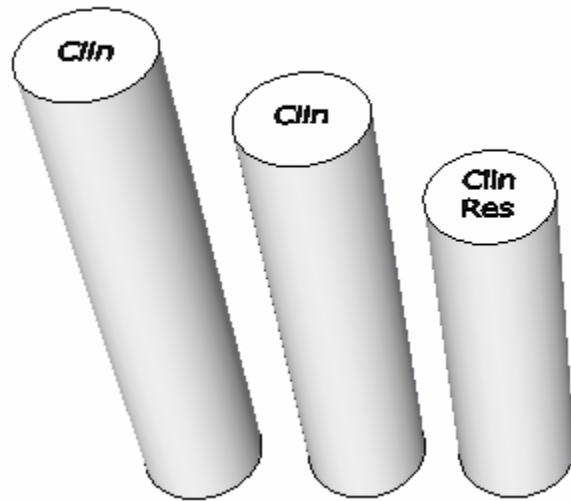
Translational Researcher (better)



Translational Researcher (better yet)



Affiliated Faculty (limited “network”?)



Affiliated
Hospitals



Identifying clinical collaborators

- Publications, research activity, and grants: not sufficient
- Measurement of clinical activity is needed
 - Faculty clinical / practice profiles
 - SNOMED
 - ICD-9
- Clinical trials databases
 - Who has participated before?
 - Types and numbers of patients treated?

Who benefits from this collaboration?

- Researchers → enhanced accrual for clinical trials
- Clinical faculty → enhanced scholarship / promotion
- Affiliated institutions → increased prestige
- Primary institution → strengthened affiliate network
- Faculty affairs office → improves faculty scholarship
- GME programs → meet accreditation requirements
- GME/UME learners → better education
- Patients → better care

Everyone!!

Drivers for VIVO adoption

- Soliciting research collaborations alone is not sufficient
- Must be useful for other purposes
- One KEY driver: Curriculum Vitae
 - Common need for all faculty

Current issues with CV data

- Duplicated in many different databases
- Synchronization is poor
 - For any one change, multiple data sources must be updated
 - Leads to inconsistent state of data
- Personal CV is best chance of being “authoritative data source”
 - But, it is not networked or available to others!

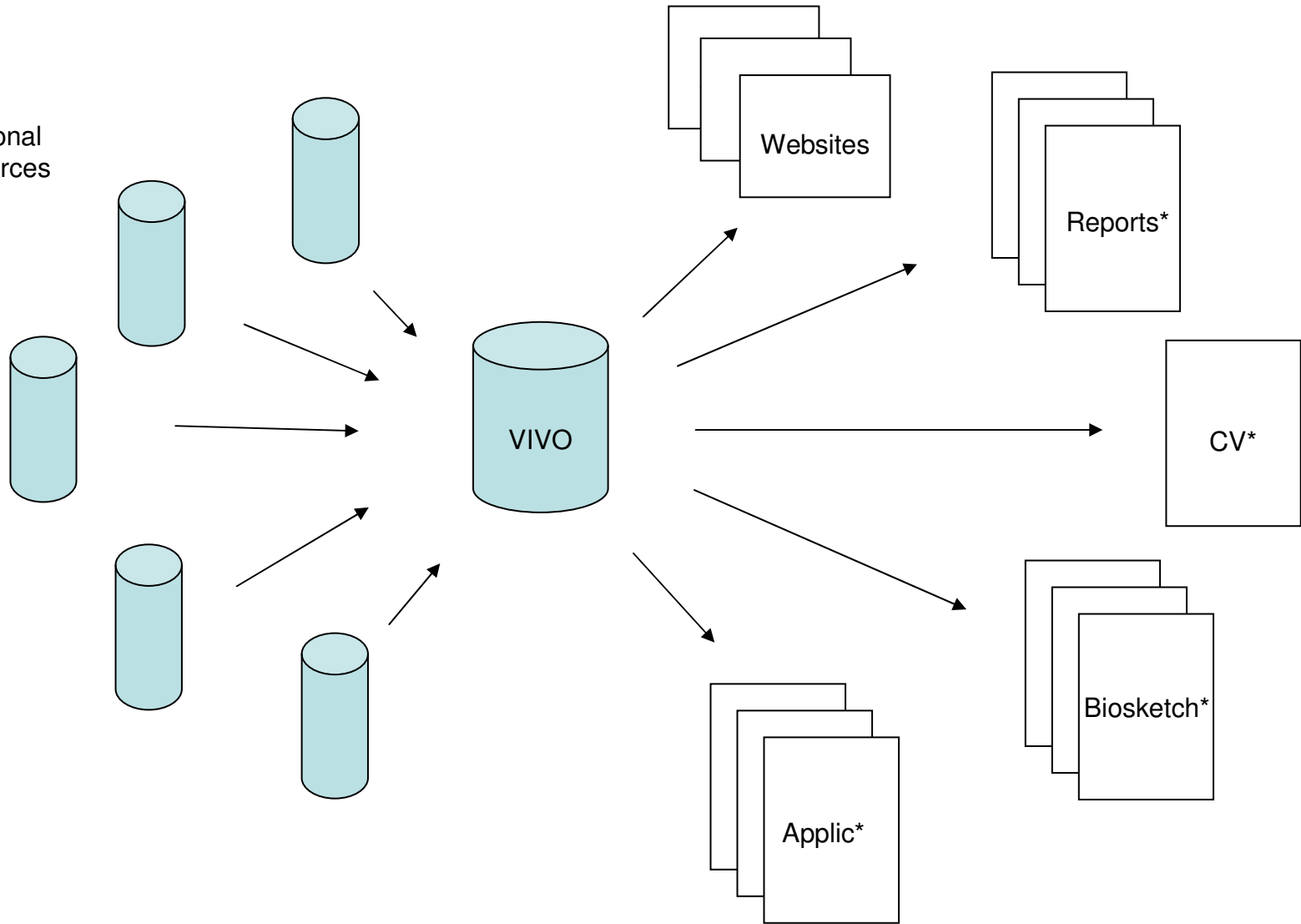
Where is my “CV” data stored?

- Word processing document (primary source)
- University - Faculty Interest Database
- University - Faculty Affairs Office
- Hospital - Medical Staff Office
- Hospital / Practice Group website
- University website
- Cancer Center website
- Alumni website
- Several professional sites

The VIVO model

- “Ingest” data from multiple different sources
- Use ontology to organize and relate data
- Pass information out to other sites
- Share with other institutions

Institutional data sources



Opportunities to export faculty data

- Professional organization (application)
- Faculty Affairs Office (appointment, promotion)
- University / hospital / practice / personal website
- NIH biosketch
- Annual department report
- Annual performance review
 - Require use of CV / custom report?

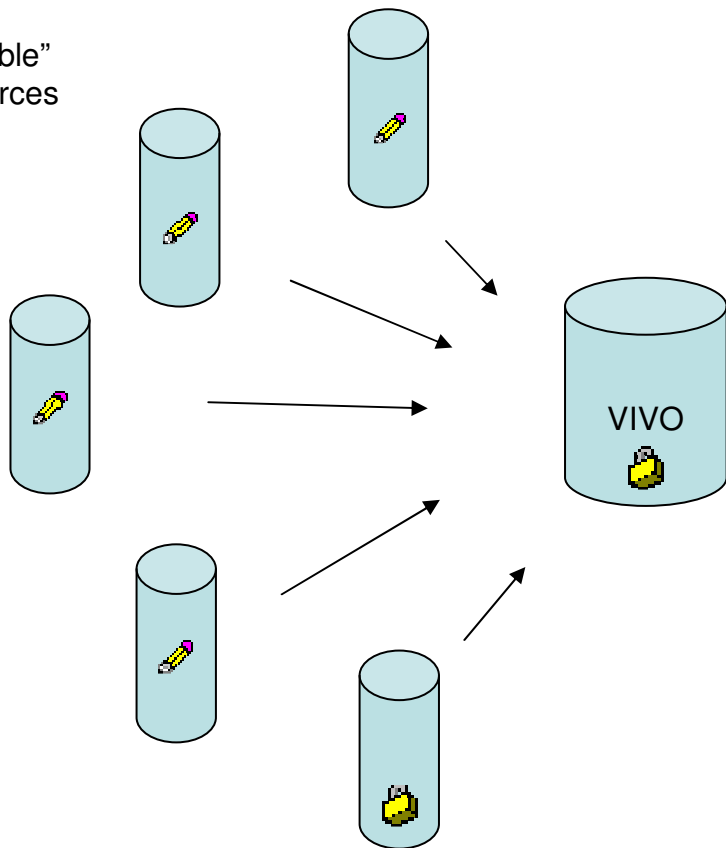
Opportunities to export faculty data

- ACGME (accreditation site visit, q 2-5 yr)
- State licensing board (application, renewal q 2 yr)
- Hospital Medical Staff Office (appointment, re-credentialing q 2 yr)
- CME reports (yearly)

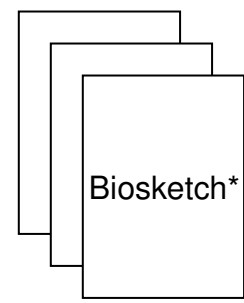
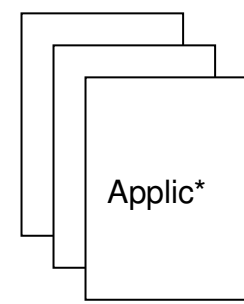
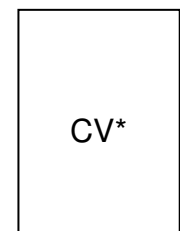
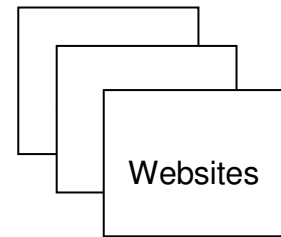
Updating data

- VIVO is not the definitive “source” of data
- Must be ingested from other sources
- How does this data get updated?

“Updatable”
data sources



“Non-updatable”
data source



My “concern” for a VIVO website ...



John C. Kairys, MD, FACS

Associate Dean for GME and Affiliations
Assistant Professor of Surgery
Vice Chair for Education, Department of Surgery

To edit this info, go to the:
[Faculty Affairs website](#)

Clinical Office:

1100 Walnut Street, 5th floor
Philadelphia, PA 19107
Tel: 215-955-5528

To edit this info, go to the:
[Practice Group website](#)

Administrative Office:

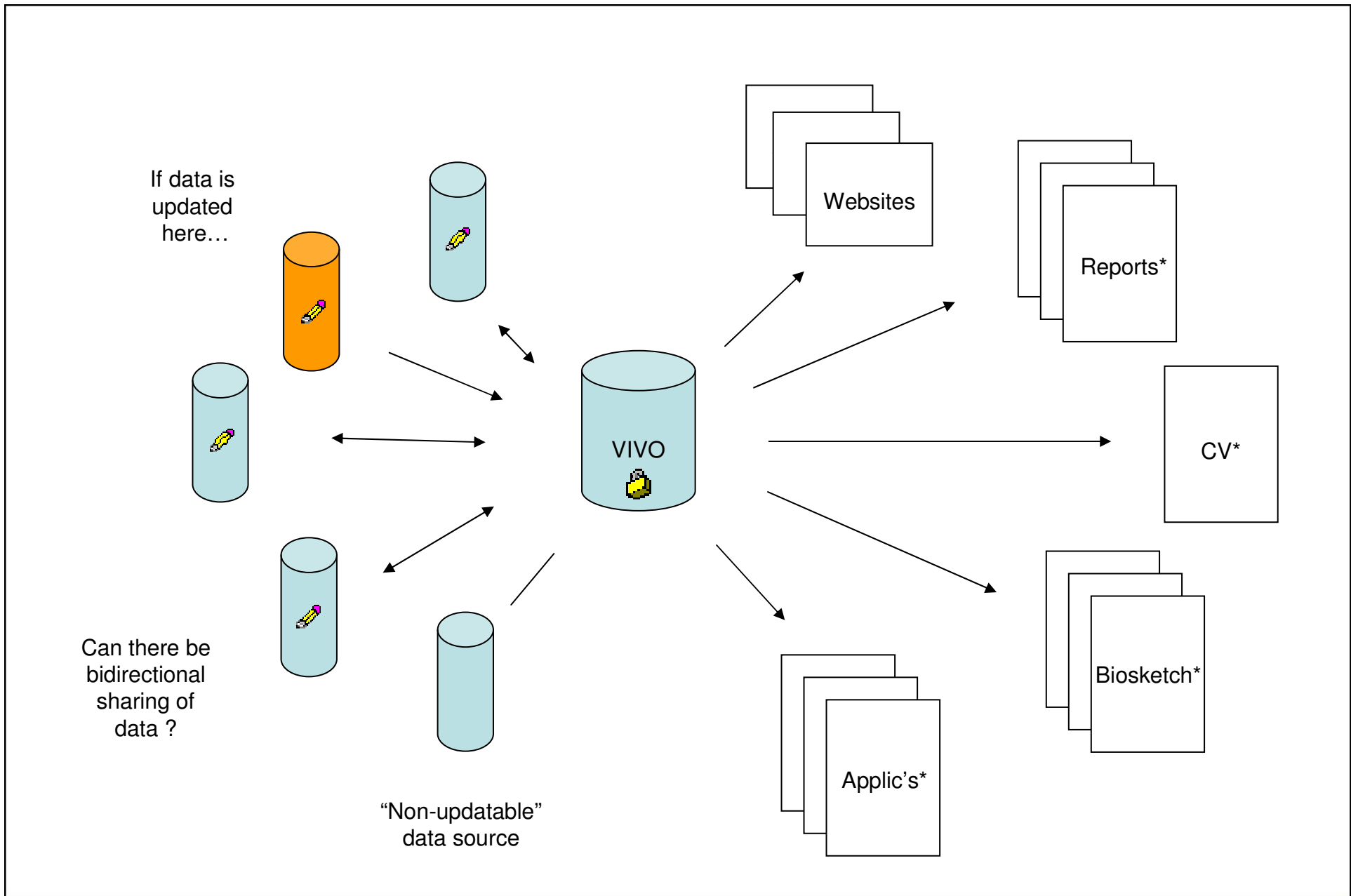
1025 Walnut Street, Room 108
Philadelphia, PA 19107
215-955-0293

To edit this info, go to the:
[University Directory website](#)


Clinical Interests:

Dr. Kairys is a Board certified General Surgeon with a practice limited to endocrine surgery. He specializes...

To edit this info, go to the:
[Faculty Interest website](#)



Digital Vita - Brilliant!


Research Gateway | digital vita  welcome, John Kairys [Sign Out](#) | [Help](#) | [My Settings](#)

[Home](#) [My Information](#) **[My Documents](#)** [My Colleagues](#) [Search](#)

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Use this page to create, edit and delete different types of biographical documents. Once you have created a document, you will be able to select the information items to be included. You cannot edit individual items. Please do that via the [My Information](#) page.

My Online Profile View my Online Profile Edit my Online Profile	Curriculum Vitae View Curriculum Vitae RTF [Word] PDF Edit Curriculum Vitae	NIH Biosketch Test Create new biosketch named: <input type="text"/> <input type="button" value="OK"/>	Faculty Evaluation Form View SODM Evaluation RTF [Word]
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 CLINICAL + TRANSLATIONAL SCIENCE INSTITUTE [Contact](#)

Commercial options

- Activity Insight (Digital Measures)
- Data360
- Collexis (product in development?)

File storage is highly desirable

- Upload files related to CV
 - Certificates, diplomas, licenses
 - Journal articles, presentations, handouts
 - Teaching evaluations
- Privacy/security concerns
 - Accessible only to user, but could be downloaded, emailed, or shared with a collaborator, if desired
- Access to your documents from anywhere
- Provide documentation for your educational “portfolio”

My Jefferson Portfolio

[Open All](#) | [Close All](#)

Personal Info	>
Education	>
Residency / Fellowship Training	>
Board Certification	>
Licensure	>
Faculty Appointments	>
Administrative / Hospital Appointments	>
Honors / Awards	>
Membership - Professional and Scientific Societies	>
Committees - Professional and Scientific Societies	>
Committees - TJUH / JMC / Affiliated Hospitals	>
Organizing Roles in Scientific Meetings	>
Editorial Positions	>
Bibliography	>

My Jefferson Portfolio

[Open All](#) | [Close All](#)

Personal Info



Name:	John C. Kairys	Edit
Home Address:	700 S. Park Dr. Westmont, NJ 08108	
Work Address 1:	1025 Walnut St. Room 108, College Building Philadelphia, PA 19107	
Work Address 2:	1100 Walnut St. 5th Floor Philadelphia, PA 19107	

Education



08/1984 - 06/1988	M.D., Medicine, Jefferson Medical College, Philadelphia, PA	Edit
09/1980 - 06/1984	A.B., Biochemistry, Harvard College, Cambridge, MA	Edit
		Add

Residency / Fellowship Training



1989 - 1993	Resident, General Surgery, Thomas Jefferson University Hospital, Philadelphia, PA	Edit
1988 - 1989	Intern, General Surgery, Thomas Jefferson University Hospital, Philadelphia, PA	Edit
		Add

My Jefferson Portfolio

[Open All](#) | [Close All](#)

Personal Info >

Education >

Residency / Fellowship Training >

Board Certification ^

2004 - present

American Board of Surgery, Re-certified: 2004



Edit

Add

Licensure >

Faculty Appointments >

Administrative / Hospital Appointments >

Honors / Awards >

Membership - Professional and Scientific Societies >

Committees - Professional and Scientific Societies >

Organizing Roles in Scientific Meetings >

Editorial Positions >

Bibliography >

Options:

Open

Send to ...

Documentation of life-long learning

- Maintain a life-long record of all academic accomplishments
 - No time limits for data retention
- ACGME: “Learning Portfolio”
 - Learning experiences
 - Clinical activities
 - Personal reflection
- ABMS: Record for “Maintenance of Certification”
 - Clinical activities
 - CME activities and scanned documents

Documentation of life-long learning

- Create VIVO accounts as graduate/medical students
 - Basic CV
 - Use as counseling / mentoring tool
 - Pull data for structured applications (i.e. AMCAS, ERAS)
- Graduate training (basic science or residency/fellowship)
 - Learning portfolio
 - Use as a counseling / mentoring tool
- Faculty
 - Annual performance review, etc.

Documentation of life-long learning

- ACGME outcomes project
 - Measure of how good a training program is
 - Requires longitudinal tracking of graduates' performance
 - Clinical activities
 - Board certification
 - Academic success (promotions, positions held)
 - Participation in national organizations
 - Publications
 - Grants
 - VIVO could enable this across institutions

Documentation of life-long learning

- For alumni of educational programs or faculty at AMC's
 - Transfer VIVO record to next place of employment (portability)
 - If no VIVO installation available, offer to maintain their CV as a free service
 - Sign of good will
 - Keep them part of your community

Continued relationship with alumni

- When searching for collaborators, highlight alumni of university / post-graduate programs / hospital
 - May be more likely to get a reply to inquiry from alumnus than from a “cold call”
 - Engage alumni in multi-institutional studies
 - Opportunity for professional development and scholarship
- Keep alumni informed of current research
- Potential for increasing directed giving

Enabling Social Networking

- Bill Gates - The Road Ahead (1995)
 - “The [information] highway will not only make it easier to keep up with distant friends, it will also enable us to find new companions. Friendships formed across the network will lead naturally to getting together in person.”
- Partially true
- Many interactions are limited to a few messages with little follow-up
- Could VIVO enable face-to-face interactions?

Enabling Social Networking

- Need to leverage what we do as professionals
 - What's different about us?
 - We attend regional / national meetings...
- If VIVO can track conferences we attended, why not track conferences that we plan to attend?

Educational Portfolio >

Meetings / Faculty Development / CME >

Upcoming Meetings / Faculty Development / CME / Reunions ^

[-] 10/12/2010 - 10/16/2010

American College of Surgeons

San Francisco, CA

[Edit](#)

[+] **CME Info**

[+] **Meeting Details**

[-] **My Colleagues**

[-] **JMC 1984-1988**

[Steve D'Orazio, MD](#) Attending meeting

[Laurie Karl, MD](#) [Cupertino, CA](#)

[-] **General Surgery Residency 1988-1993**

[Thomas Bauer, MD](#) Attending meeting

[W. Bradford Carter, MD](#) Attending meeting, [Presenting](#)

[Robert Tripp, MD](#) Tentatively attending meeting

[-] **TJU Faculty 1993-present**

[Herbert Cohn, MD](#) Attending meeting

[Send a message](#)

Educational Portfolio >

Meetings / Faculty Development / CME >

Upcoming Meetings / Faculty Development / CME / Reunions ^

<input type="checkbox"/> 10/12/2010 - 10/16/2010	American College of Surgeons	San Francisco, CA	Edit
<input type="checkbox"/> CME Info			
<input type="checkbox"/> Meeting Details			
<input type="checkbox"/> My Colleagues			
<input type="checkbox"/> JMC 1984-1988			
<input type="checkbox"/> Steve D'Orazio, MD	Attending meeting		
<input type="checkbox"/> Laurie Karl, MD	Cupertino, CA		
<input type="checkbox"/> General Surgery Residency 1988-1993			
<input type="checkbox"/> Thomas Bauer, MD	Attending meeting		
<input type="checkbox"/> W. Bradford Carter, MD	Attending meeting, Presenting		
<input type="checkbox"/> Robert Tripp, MD	Tentatively attending meeting		
<input type="checkbox"/> TJU Faculty 1993-present			
<input type="checkbox"/> Herbert Cohn, MD	Attending meeting		
<input type="button" value="Send a message"/>			



Thank you

Questions or comments:

John C. Kairys, MD, FACS

john.kairys@jefferson.edu