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# Institute of Clinical and Translational Sciences News, January-February 2012

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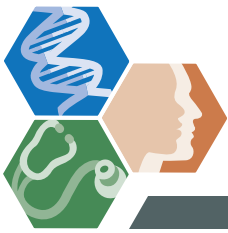
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## Scientific Collaboration: The Good News

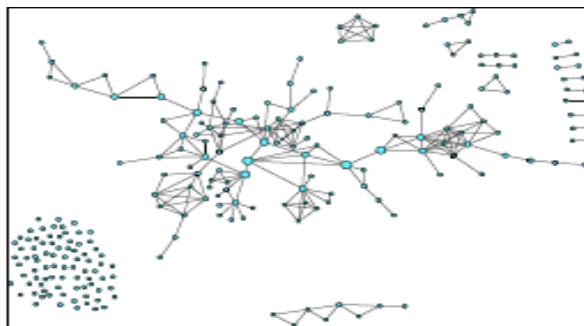
A major goal of the ICTS is to promote and facilitate collaborative research across disciplines. To evaluate the success of this goal, the ICTS Tracking & Evaluation (T&E) team measured collaboration at each of three interconnected phases: 1) grant development and submission; 2) active scientific collaboration; and 3) scientific publication.

Grant development and submission: Data from all proposals submitted by Washington University (WU) ICTS investigators was analyzed. In 2007 19% of the submissions included multiple ICTS investigators while nearly 15% included investigators from more than one discipline. In contrast, in 2010 nearly 36% included multiple investigators with 30% being cross-disciplinary.

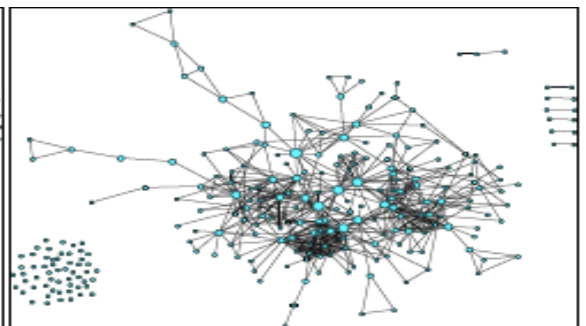
This growth in proposal submission collaboration can be seen more clearly by examining the network of ICTS grant collaborations. T&E analyzed the 387 members who joined the ICTS in the first year to allow for the longest follow-up. In the network graphics below, nodes (circles) represent ICTS members and the lines represent shared grant submissions for 2007 and 2010. The graphic clearly shows a tighter collaboration network among these investigators after 4 years of CTSA funding. Network statistics confirm this.

ICTS Grant Network (members who joined in the first year)

Before ICTS (2007)



Now (2010)



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### Grant Citation

Investigators using ICTS cores and services to support their research should acknowledge the CTSA Grant **UL1 RR024992**

ICTS scholars and trainees should acknowledge the CTSA linked grant **KL2 RR024994** or **TL1 RR024995**

## Washington University's New Center for High Performance Computing (CHPC)

By Fred W. Prior, PhD

As many of us are painfully aware, the amount of data our research produces is growing at a tremendous rate. Having computing and storage capacity sufficient to keep up with this growth is a daunting challenge, but a challenge we must meet. The goal of the new Washington University Center for High Performance Computing (CHPC) is to provide state of the art computing capabilities to support such research needs.

CHPC provides the ICTS community with access to High Performance Computing resources and the expertise necessary to tackle any computationally intensive scientific project. CHPC offers the following services (see <http://www.chpc.wustl.edu/> for details):

- Access to a professionally managed High Performance Computing System (1856 high speed processors configured in both a distribute processing cluster and 7 high capacity, large memory symmetric multiprocessing units; 6,016 GB of high speed Memory; and 9 TB of internal high speed shared storage);
- Usage of 28 pre-installed software packages that support molecular modeling, genomic analysis, advanced imaging, statistics, and mathematical analysis (see complete list at <http://chpc.wustl.edu/software.html>);
- Support for user access and the ability to request new software be added to the system;
- Consultation with CHPC staff on parallel computing and software optimization;
- Easy access to parallel computing through MATLAB, based on a 128-worker license for the MATLAB Distributed Computing Server and the MATLAB Parallel Computing Toolbox

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## CHPC; from page 1

Some members of the user community have requested access to high volume storage to support data centric applications such as genomic analysis or imaging. As an option, CHPC can lease storage on a large-scale BlueArc storage array. This includes full backup (provide 2x the usable storage), and guaranteed availability of your data PLUS access to the 55TB high-speed cache that is directly connected to the supercomputer. So you can store your research data safely and use the shared, high speed cache when you process your data. Again, this is an option only for those users who need the storage. Otherwise, every user gets a storage allocation on the 9TB high-speed storage pool inside the supercomputer.

### Background

Funded by an NIH grant, an IBM high performance computing system (often referred to as a supercomputer) was installed in the WU School of Medicine's (SOM) data center in December 2009 and put into operation in January 2010. During its first 2 years of limited operation, the system has run over 1.3M jobs for 200 users from both WU campuses. This represents over 10,000,000 CPU-hours of processing capacity or the equivalent of running your PC continuously for 1,100 years.

In November 2011, the WU SOM Executive Faculty voted to create a university-wide Center for High Performance Computing and approved a funding model that makes the facility cost effective for all users. As a university-wide resource, CHPC must operate in a manner that permits full transparency and user community management involvement to help ensure the center continues to meet the needs of all users. Two committees are currently being formed:

- 1) CPHC Governing Board - open to one representative for each member entity, includes the center director, will elect its own chairperson, will meet at least annually to review and approve budget/fee structure, and will approve operating policies;
- 2) CPHC Engineering Committee - chaired by system manager, will include faculty and staff members knowledgeable in high performance computing and parallel processing, and will guide the system manager and system administrator in establishing the best technical direction for center operations.

The CPHC Director, Fred W. Prior, PhD, Associate Professor of Radiology, is also the Associate Director of the ICTS Center for Bio-medical Informatics (CBMI). The CHPC staff will work with CBMI personnel and other ICTS cores to help provide seamless support for data management, storage, processing, and results distribution. The CPHC services are eligible for support under the ICTS JIT Core Usage Funding Program. ([http://icts.wustl.edu/funding/jit\\_core\\_usage\\_funding\\_program.aspx](http://icts.wustl.edu/funding/jit_core_usage_funding_program.aspx))

The measure of value of any resource is the extent to which it is used. CHPC's success is measured by the publications produced by our user community, by the new grant funding that is awarded, and by the resulting outcomes to advance research discoveries because investigators have ready access to high end computing capabilities.

Additional information about the CPHC can be accessed at <http://www.chpc.wustl.edu/> or you may contact: Center Director, Fred Prior PhD, [priorf@mir.wustl.edu](mailto:priorf@mir.wustl.edu), (314)747-0331 or System Manager, Malcolm Tobias PhD, [mtobias@wustl.edu](mailto:mtobias@wustl.edu), (314) 362-1594.

## Open House for Art @ HealthStreet

By Dan Martin

What a great success we had on the evening of January 12, 2012! Despite wicked winds and swirling snow, there was a full house for the Art@HealthStreet awards reception and open house. We welcomed more than 60 community members, including teachers, St. Louis Public School administrators, contest judges, student participants and their families. After a brief overview of HealthStreet, we presented the winners with their awards and certificates signed by the Mayor of St. Louis, Francis Slay. Additionally, all students received a personalized participation certificate.

Hot cider helped to warm the soul and the large bowls of bananas, apples and oranges were gobbled up as everyone mingled and viewed all 151 pieces of art hung on the walls. Great conversations were had about health, art and education. The kids were extremely proud to show off their works of art.

Thanks to the ICTS for providing the awards for the winners, to the WU Program in Occupational Therapy for their support, and to Linda Kraiberg with the St. Louis Public Schools, and ALL of the art teachers for their partnership and commitment to this program.



## Have You Met? Jina Loduca

Jina Y. Loduca, RN, BSN, Nurse Administrator for the Clinical Research Unit (CRU) in the ICTS Center for Applied Research Sciences (CARS), says the most exciting aspect of her job is being involved in cutting edge clinical research by assisting investigators and their clinical research study teams. She says, "It is pretty amazing!" Jina was appointed as the CRU Nurse Administrator in January 2011 following the retirement of Lois Davis, RN, MSN. Yi Zhang, RN, JD, CARS Operations Officer, confirms that hiring Jina into this role was an excellent decision as "Jina already has done an outstanding job during her first year by increasing Unit efficiencies through scheduling and staffing adjustments. She has also continued the work to develop better communication processes with the research teams and emphasizes a customer-friendly service orientation among the CRU staff."



The CRU is primarily used to conduct inpatient and outpatient intensive research studies and provides research beds, research nursing and technician support, and routine supplies. CRU nurses have a range of special skills and knowledge to implement and execute a large number of diverse and complex study protocols. The CRU is located within ~7,500 square feet of dedicated inpatient and outpatient space on the 4th and 5th floors of Barnard Hospital at the Washington University Medical Center. This space includes a 12 bed semi-private in-patient unit, a 2 bed and 4 chair/bed outpatient area, waiting room, nurses' station, lab processing/storage facility, body composition analyses space housing 2 dual energy x-ray absorptiometers, metabolic kitchen, and conference room. Jina supervises 13 nurses, 4 assistants and 7 nutrition staff. Bettina Mittendorfer, PhD is the Director of the CRU, making daily unit rounds and providing consultation and training services, while Samuel Klein, MD (CARS Director) provides overall medical supervision.

Along with her passion for being involved in clinical research, Jina brings to the job a strong science, nursing, and clinical research background. She graduated with a BA in Chemistry from Saint Louis University (SLU) and then worked as a research technician in the Department of Neurological Surgery at Washington University (WU). She then decided to enroll full time in SLU's two year nursing program. After receiving her nursing degree she began pharmaceutical research at Monsanto as a research chemist. In 1996, Jina came back to WU and worked with Dr. Kevin Yarasheski in the Department of Medicine as a research coordinator participating in the NIH Claude Pepper Center studies in the elderly population. For some of these studies she used CRU (the General Clinical Research Center (GCRC) prior to September 2007) services. In 2000, while raising small children, Jina took a nursing position under the Barnes-Jewish Hospital weekend option program and stayed there until 2006 when she made the transition back to WU and clinical research working the night shift on the GCRC until her recent appointment as the CRU Nurse Administrator.

Jina's three children are now 9, 12, and 14, and though they still keep her busy, she has transitioned well from working nights to her new CRU day-time role. Jina was born in South Korea but has lived in St. Louis most of her life. She enjoys spending time with her husband and children as well as fitting in time for reading and gardening. Musical talent runs in the family as Jina plays the piano and each of her children also play a musical instrument.

For more information about the CRU see the ICTS website (<http://icts.wustl.edu/cores/iru.aspx>) or contact Jina at [loducaj@wusm.wustl.edu](mailto:loducaj@wusm.wustl.edu) or (314) 747-3595.

### National CTSA Update

#### Dissolution of the National Center for Research Resources (NCRR)

On December 23, 2011, President Obama signed the Fiscal Year 2012 Omnibus Appropriations bill and as part of this legislation, the NIH National Center for Research Resources (NCRR) was dissolved and the National Center for Advancing Translational Sciences (NCATS) was established. NCRR's various programs have been transferred to other NIH Institutes and Centers. The Clinical and Translational Science Awards will now be administered under the new National Center for Advancing Translational Sciences (<http://ncats.nih.gov/>).

Keep up with national CTSA news at:

<http://www.ctsacentral.org/>

### Annual Conference "Translational Science 2012"

**Improving Health Through  
Research and Training  
April 18-20, 2012, Washington, D.C.**

Co-sponsored by: Society for Clinical and Translational Science, Association for Clinical Research Training, American Federation for Medical Research, Duke University School of Medicine

Visit [www.TranslationalScienceMeeting.org](http://www.TranslationalScienceMeeting.org) for information.



## Scientific Collaboration; from Page 1

Active Scientific Collaboration: In Spring, 2011, T&E developed and distributed the ICTS Research Collaboration Survey to better understand the active and ongoing collaborative research partnerships of ICTS members. The survey included demographic, collaboration network, and general attitude and satisfaction questions. A total of 737 ICTS members responded to the survey (71% response rate). Respondents reported 143 different disciplines with which they most closely identified their current work; 10% of respondents were from an ICTS partner institution outside of WU. Analysis of this data indicated a strong tendency for ICTS members to collaborate with other ICTS members and provided insight about barriers to collaboration. The executive summary of this survey can be found at <http://www.icts.wustl.edu/about/2011CollabES.pdf>.

Scientific Publications: Administrative data and data obtained from Scopus were used to examine publication and co-authorship patterns for ICTS members from 2007 to 2010 (types of publications included articles, conferences papers, reviews and short surveys). Over the 4 year time period:

- 24.1% of publications had multiple ICTS investigators (increase from 15.6% in 2007 to 28.6% in 2010)
- 16.5% of publications had ICTS investigators represent more than one discipline (increase from 10.1% in 2007 to 19.0% in 2010)

During the first 4 years of CTSA funding, we can see a general trend towards greater publication collaboration and interdisciplinary co-authorship teams.

In summary, analysis of administrative and survey data collected from ICTS members shows a consistent pattern. During the first 4 years of CTSA funding, ICTS members became more likely to collaborate with other ICTS members, and with other CTSA scientists. These collaborations have also become more interdisciplinary, both in terms of grant and journal co-authorship teams. When asked about scientific collaboration and transdisciplinary research, ICTS members report strong support and satisfaction, and believe that such collaborations have improved their scientific work. The most dramatic evidence for new and increased research collaboration is shown in new proposal submissions, an indicator of collaboration that can generally be measured before any resulting research output such as publications.

The result of this collaborative data analysis was included in the WU CTSA competitive renewal application submitted in June 2011. Trends in proposal submissions and publications will be evaluated on an annual basis. The ICTS member collaboration survey will be issued again in 2013 to continue to track and evaluate changes in collaboration activities.

## Research Core Highlights

### New Equipment-WU Tissue Culture Support Center (TCSC)

Seahorse Biosciences extracellular flux technology allows the quantification of the 2 major energy yielding pathways in the cell-mitochondrial respiration and glycolysis. XF analyzers in the 24 and 96 well formats and all associated consumables are now available for use at the TCSC core facility. For more information contact Teri Davidson at 314-362-3622 or [davidson@genetics.wustl.edu](mailto:davidson@genetics.wustl.edu).  
(To increase awareness of additional resources the ICTS highlights core services outside of the ICTS umbrella.)

## Tips & Tools from Becker Library

### Manage Your Data

The California Digital Library (CDL) has compiled a wealth of information about Data Management including guidelines about data management and sharing policies by funding agencies, as well as helpful information for taking care of your data across the research lifecycle (creating data, organizing, managing, and sharing). The CDL resources are available at <http://www.cdlib.org/services/uc3/datamanagement/>.

You might consider sharing data by depositing research data in appropriate repositories such as GenBank or GEO at NCBI or with publishers of journals who are willing to post the data. Sharing of research data can lead to more rapid analysis and identification of genetic contributions to diseases and medical conditions. One study, "Sharing detailed research data is associated with increased citation rate," demonstrated a correlation between shared research data and increased citation impact.<sup>1</sup>

<sup>1</sup>"Strategies for Enhancing the Impact of Research." Becker Medical Library. Web. 06 Feb. 2012. <<http://becker.wustl.edu/impact/assessment/strategies.html>>.

## Upcoming Events

### ICTS Brown Bag Seminars

#### Dates for 2012 Spring Seminars

March 21 (flyer attached), April 26, and May 22, 2012

### ICTS Brown Bag 2 Seminars for Behavioral Research

#### Dates for 2012 Spring Seminars

March 14 (flyer attached), and May 9, 2012

Holden Auditorium, Farrell Learning & Teaching Center, WU Medical Center Campus. Register via HRMS Self Service, Training & Development. Non-WU staff email [ICTS@wustl.edu](mailto:ICTS@wustl.edu). For more information, call 314-747-8155.

### Technology Commercialization Seminar Series

#### Focus on Innovation & Entrepreneurship

Sponsored by: WU Office of Technology Management

### "Analytical Critique on Industry Drug Development"

Kenneth I. Katin, PhD

March 15, 2012

2:30pm

Holden Auditorium, Farrell Learning & Teaching Center, WU Medical Center Campus. No registration required.

## Research Navigator

Inquiries directed to the ICTS Research Navigator, via e-mail or phone, are currently being monitored by the ICTS Administrative Core staff and triaged to the appropriate expert.

To learn about services, visit the ICTS Cores and Resources website or contact the ICTS at 314-362-9829 or [ICTSNavigator@wustl.edu](mailto:ICTSNavigator@wustl.edu) for assistance.

### Attention ICTS LINC Members:

The next LINC meeting will take place from 12:00 to 1:00pm in BJC1H Room 10A/B on March 30th. Hope to see you there!

**The Brown Bag 2 Seminar Series**  
**(for Behavioral Research)**

Hosted by the Division of Health Behavior Research and Institute of Clinical & Translational Sciences

*“Behavioral Research: What Project Coordinators Need to Know to Navigate the Scientific Review Process”*

Presented by:

*Stephen Ristvedt, PhD, Chair of the Behavioral Science Subcommittee of the Protocol Review and Monitoring Committee of the Alvin J. Siteman Cancer Center; and Mitch Sommers, PhD, Chair of the Institutional Review Board Behavioral Subcommittee*

**Wednesday, March 14, 2012**

**12:00 pm to 1:00 pm**

**Farrell Learning and Teaching Center  
Holden Auditorium**

*Wash U Employees please register via HRMS, Employee Self-Service, Training and Development, Research Course Enrollment, Behavioral Research Brown Bag, Session 1203*

*If non-Wash U please RSVP to [ifischer@dom.wustl.edu](mailto:ifischer@dom.wustl.edu)  
Please RSVP due to limited room capacity.*

**The Brown Bag Seminar Series**

Hosted by the Institute of Clinical & Translational Sciences

*“Introduction to RED CAP: A generalized database geared toward research”*

Presented by:

*Kevan Essmyer, BS, Division of Biostatistics*

**Wednesday, March 21, 2012**

**12:00 pm to 1:00 pm**

**Farrell Learning and Teaching Center  
Holden Auditorium**

*Wash U Employees please register via HRMS, Employee Self-Service, Training and Development, Research Course Enrollment, Research Coordinator Brown Bag, Session 1203*

*If non-Wash U please RSVP to [ICTS@wustl.edu](mailto:ICTS@wustl.edu)  
Please RSVP due to limited room capacity.*



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SCHOOL OF MEDICINE