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# Institute of Clinical and Translational Sciences News, Vol. 2, Issue 9

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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**

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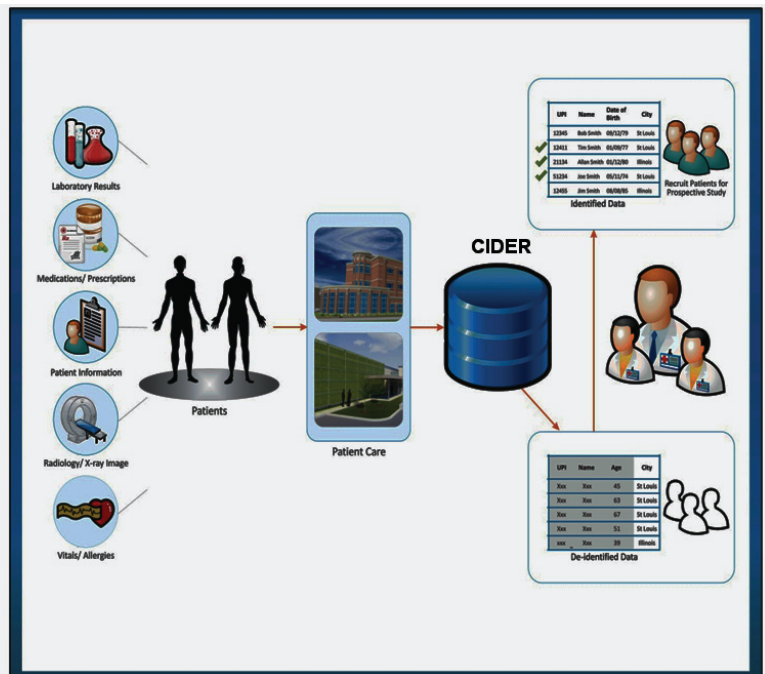
## Center for Biomedical Informatics Launches CIDER

by Rakesh Nagarajan, MD, PhD, Director, and George Bijoy, MBA, PMP, Program Manager, Center for Biomedical Informatics

### Background

The goal of clinical and translational research is to rapidly convert novel advances in basic science to improvements in patient care and to relay findings from clinical studies employing such new and increasingly customized diagnostics and therapeutics back to the bench for further refinement of our understanding of the disease process. To realize this aim, the physician-scientist must be able to integrate diverse and complex biomedical data sets that include clinical information obtained from the patient with the results of routine laboratory tests, imaging, biospecimens, molecular profiling (e.g. microarray analysis, proteomics, lipidomics, etc.), and genome annotation information. This data must be co-analyzed and visualized to gain a comprehensive understanding of underlying processes occurring in multi-factorial diseases. Furthermore, access to all of this information and findings from analyses must be seamlessly available to physicians, clinician-scientists, and bench scientists to reduce the barrier between basic science and clinical research.

Currently, one of the biggest barriers of performing clinical and translational research is the acquisition of patient data from clinical records in a way that is effective as well as protective. While data on individual patients may be acquired and recorded manually by viewing such individuals' data in a hospital's Electronic Medical Record (EMR), this method of data collection and review is not feasible for many studies. More importantly, this activity currently poses significant privacy and confidentiality risks to participants. More seamless but regulated electronic access to patient data would not only broaden the scope of the research data thereby improving the integrity and generalization of the research conclusions greatly but would also minimize the privacy and confidentiality risks significantly.



### Clinical Investigation Data Exploration Repository (CIDER)

To address these needs, the Center for Biomedical Informatics (CBMI) has developed a research patient data warehouse, termed Clinical Investigation Data Exploration Repository (CIDER) that currently contains inpatient data from almost 5 million patients. Information such as demographics, laboratory results, medication orders, procedures, and diagnoses may be queried discretely. In addition, text documents are currently being loaded into CIDER, allowing researchers to perform free text (e.g. 'Google like') searches on clinical documents like radiology or surgical pathology reports. Future plans include: a) querying outpatient data from Touchworks and NextGen; b) providing query capabil-

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ity to data in free text documents in structured fashion (e.g. find all patients who have evidence of smoking two or more packs per day) using natural language processing techniques; and c) providing access to imaging studies.

CIDER is currently authorized for use by BJC HealthCare and Washington University investigators with access to anonymized, de-identified but coded, and limited data from Barnes-Jewish Hospital and St. Louis Children's Hospital. Approvals for access to data from all BJC HealthCare facilities (e.g. Missouri Baptist Medical Center and Christian Hospital) are ongoing. In addition, it is anticipated that CIDER may be used to identify participants who may be recruited to active studies or trials. This activity would only be permitted after the Washington University Human Research Protections Office has approved participant recruitment using CIDER on an individual study basis.

All users of the CIDER system are first required to complete HIPAA training. All CIDER users must also complete a one hour mandatory class that provides an overview of CIDER and the user's responsibilities to ensure data security. Users may also attend an optional two hour hands-on-training that immediately follows to learn how to use the CIDER web application to answer clinical research questions. Additional resources to the CIDER project as well as links to training information are available as follows:

CIDER Overview - <http://cbmi.wustl.edu/html/CIDER.html>

Frequently Asked Questions- <http://wiki2m1.cbmi.wucon.wustl.edu/ciderwiki/FAQs>

CIDER Training Schedule- <http://portal.wusm.wustl.edu/cbmi/endusers/Lists/Calendar/CIDER%20Trainings.aspx>

CIDER Training Sign Up (Please click 'Respond to this Survey' to sign-up) –  
<http://portal.wusm.wustl.edu/cbmi/endusers/Lists/CIDER%20Training%20RSVP/overview.aspx>

CIDER User's Manual – <http://wiki2m1.cbmi.wucon.wustl.edu/ciderwiki/CIDER%20User%20Manual>

For more information, contact the Center for Biomedical Informatics Help Desk at [help@bmi.wustl.edu](mailto:help@bmi.wustl.edu).

## Past Events

- During January, 74 faculty from Washington University and ICTS partner institutions participated as reviewers for the 82 proposals that were submitted in our third round of the **ICTS/BJHF Pilot Funding Program**. Final awards will be announced in the next ICTS News.
- The **ICTS External Advisory Board** annual meeting was held at Washington University on February 2nd. The Board provides advice and direction on ICTS functions and activities to ICTS leaders, its Governing Council, and its Executive Committee. Its members are from universities with CTSA's including Yale, Indiana, University of Pittsburgh, University of Pennsylvania, University of Alabama-Birmingham, and the Oregon Health and Science University and the Kaiser Permanente Center for Health Research.
- The **ICTS Center for Clinical Research Ethics (CCRE)** hosted **Jonathan Moreno, PhD**, who speak about "*Human Experiments and National Security*." **Dr. Moreno** is the David and Lyn Silfen University Professor, and Professor of Medical Ethics and of History and Sociology of Science at University of Pennsylvania. His lecture on March 1st to approximately 60 ICTS faculty, staff, and clinical research trainees included an overview of human experiments that governments have conducted and ethical issues raised for medical researchers and society. Dr. Moreno is both a Senior Fellow at the University of Pennsylvania's **Center for Bioethics** and the **Center for American Progress** in Washington, DC, where he edits the magazine *Science Progress*. He was a member of President Barack Obama's transition team for the Department of Health and Human Services. His edited anthology, **Progress in Bioethics** (2010), is the first collection of papers on bioethics and progressivism.

## Our Community, Our Health and the St. Louis Regional Health Commission Partner for a Skills Building Workshop

by Emma Ilori, MPH

February 10<sup>th</sup> marked the second workshop in the quarterly *Our Community, Our Health* conference series. *Our Community, Our Health* is a collaborative effort to engage the St. Louis community in partnerships to address local health disparities.

Conducted in collaboration with the Regional Health Commission, this skills building workshop focused on the new Community/University Health Research Partnerships (CUHRP) grants program and offered strategies to develop successful community-academic relationships. William H. Danforth, MD, Chancellor Emeritus from Washington University, and Philip O. Alderson, MD, Vice President of the Health Sciences Center and Dean of the School of Medicine at Saint Louis University, opened the event with a warm welcome to the audience of over 150 community and academic attendees.

Key topics of importance that emerged in group discussions by participants at the inaugural *Our Community, Our Health* October 2009 conference were revisited, including transparency in partnerships, cultural competency education for researchers, community input early and often, on-going programs not threatened by variations in funding, financial investment in our community, and trust building. Presentations at the workshop included:

- “Successful Collaborations” by Kendra Copanas, Executive Director, Maternal Child and Family Health, and Ricardo Wray, PhD, Associate Professor, School of Public Health, Saint Louis University;
- “Keys to Successful Partnerships” by Vetta Sanders-Thompson, PhD, Associate Professor, George Warren Brown School of Social Work, Washington University;
- “Tips for Grant Writing” by Karen Dodson, Director and Managing Editor of Academic Publishing Services, Washington University School of Medicine; and

managing editor of the American Journal of Physiology: Endocrinology and Metabolism; and

- “Responsible Conduct in Research” by Dan Bustillos, JD, PhD, Assistant Professor, Albert Gnaegi Center for Healthcare Ethics, Saint Louis University.

The afternoon ended with a review of the CUHRP grant criteria by Mikki Brewster, MSW, and closing remarks by Robert Freund, CEO, St. Louis Regional Health Commission, and the co-chairs of *Our Community, Our Health* -- Consuelo Wilkins, MD, Associate Professor, School of Medicine, Washington University, and Darcy Scharff, PhD, Associate Dean of Academic Affairs and Associate Professor, Saint Louis University School of Public Health.

Many of the attendees were applicants to the CUHRP grants program which requires partnership between a Washington University or Saint Louis University faculty member and a principal investigator from a local, community-based organization. In addition to the presentations, there was time allotted for questions and answers regarding the funding program. Letters of Intent were submitted in January and full applications were due on March 26, 2010 to the Regional Health Commission.

The next *Our Community, Our Health* workshop will be held on May 21, 2010 in collaboration with the “[Sharing Responsibilities, Improving Community Health](#),” Greater St. Louis Community Health Speaker Series sponsored by Saint Louis University.

To learn more about *Our Community, Our Health*, visit <http://ourcommunity-ourhealth.org>. To join the mailing list, email [ocoh@dom.wustl.edu](mailto:ocoh@dom.wustl.edu).

## St. Louis Community/University Health Research Partnerships (CUHRP) Update

Washington University, Saint Louis University and BJC HealthCare have partnered to establish and provide funding for research collaborations between community-based organizations in St. Louis city and county and faculty members at Washington University and Saint Louis University. This program is being coordinated by the St. Louis Regional Health Commission (RHC). 57 Letters of Intent were received for the January 8<sup>th</sup> deadline and 43 proposals were submitted by the March 26<sup>th</sup> deadline. Following steps and dates include:

- |   |                |
|---|----------------|
| • Review by Scientific Panel and Grant Awards Panel | April/May 2010 |
| • Anticipated Award Announcement                    | June 2010      |
| • Anticipated Award Start Date                      | July 1, 2010   |

For more information contact Angela Fleming, Community Partnerships Director, St. Louis Regional Health Commission at (314) 446-6454 x1011 or [afleming@stlrhc.org](mailto:afleming@stlrhc.org) or visit the website at <http://www.stlrhc.org>.

## ICTS Announces New KL2 Scholars

The ICTS welcomes 6 new clinical research scholars to the ICTS Center for Clinical Research Training KL2 2010 cohort. The ICTS KL2 Career Development Awards are aimed at fellows, post-doctoral scholars, and junior faculty who are committed to multidisciplinary careers in clinical and translational research. Scholars must devote 75% of their time to clinical research training over the course of two to three years. The scholar's department must be committed to protecting the 75% effort for research activities. Each scholar works toward a degree in clinical investigation (MSCI) or public health (MPH or MSPH), or undertakes individualized coursework that furthers their research training. The scholars each have two mentors, a primary and secondary, from different disciplines to advise them and oversee their progress. The program is funded by the NIH CTSA grant KL2 RR024995, the Institute of Clinical and Translational Sciences, Barnes-Jewish Hospital Foundation, and the St. Louis Children's Hospital. The new scholars join a cohort of 12 continuing scholars. Those selected to the program beginning July 2010 include the following individuals from Washington University:

**Lori R. Holtz**, MD, Instructor in Pediatrics, Division of Pediatric Gastroenterology

*Research Topic:* Epidemiology of Newly Discovered Astroviruses

*Mentors:* David Wang, PhD, Assistant Professor of Molecular Microbiology  
Phillip I. Tarr, MD, Melvin E. Carnahan Professor of Pediatrics

**Brian R. Lindman**, MD, Instructor in Medicine, Cardiovascular Division

*Research Topic:* Medical Therapy for the Treatment of Aortic Stenosis: Role of PDE5 Inhibition

*Mentors:* Douglas L. Mann, MD, FACC, FACC, Tobias and Hortense Lewin Professor of Medicine, Cardiovascular Division  
Brian F. Gage, MD, MSc, Associate Professor of Medicine, Division of General Medical Sciences

**Yanina Pepino de Gruey**, PhD, Fellow, Department of Medicine, Division of Geriatrics and Nutritional Science

*Research Topic:* CD36 Involvement on Fat Taste Perception and Preferences in Humans

*Mentors:* Nada A. Abumrad, PhD, Dr. Robert C. Atkins Professor of Obesity Research in Medicine  
Todd S. Braver, PhD, Professor of Psychology

**Sandi Pruitt**, PhD, Fellow, Department of Medicine, Division of Health Behavior Research

*Research Topic:* Role of Diagnostic and Treatment Delays in Late-stage Colorectal Cancer

*Mentors:* Nicholas O. Davidson, MD, DSc, Professor of Medicine, Division of Gastroenterology  
Mario Schootman, PhD, Associate Professor of Epidemiology and Medicine, Division of Health Behavior Research

**Katherine A. Stamatakis**, PhD, MPH, Assistant Professor of Surgery, Cancer Prevention and Control Division; Siteman Cancer Center

*Research Topic:* Enhancing Local Public Health Capacity in Evidence-Based Cancer Prevention

*Mentors:* Ross C. Brownson, PhD, Professor of Epidemiology, George Warren Brown School of Social Work  
Graham A. Colditz, MD, DrPH, FAFPHM, Niess-Gain Professor in the School of Medicine, Department of Surgery

**Seth A. Strope**, MD, MPH, Assistant Professor of Surgery, Division of Urologic Surgery

*Research Topic:* Increasing Efficiency of Surveillance Imaging for Urinary Tract Cancer Survivors

*Mentors:* Mario Schootman, PhD, Associate Professor of Epidemiology and Medicine, Division of Health Behavior Research  
Jay F. Piccirillo, MD, FACS, Professor of Otolaryngology

## Have You Met?

## Richard LeDuc

Richard LeDuc, PhD, Co-director of the ICTS Proteomics and Mass Spectrometry (PMSP) Core, spends his day processing data for ICTS users, refining proteomics analysis algorithms, and applying statistical models for quantitative proteomics. Rich is a bioinformaticist who works on clinical and basic science proteomics projects. Examples of ongoing translational projects are 1) the characterization of interactomes (see Nittis et al. *Molecular and Cellular Proteomics*, published ahead of print), 2) identification of protein biomarkers in clinical samples, 3) studying cancer in human xenograft models, and 4) analyzing quantitative phosphoproteomics experiments. The identification and quantification of hundreds of proteins in complex protein samples provides researchers with high-content data sets which may contain candidate biomarkers, insights into disease mechanisms, or modes of drug action.

A major goal of Rich's analyses is to identify sources of variation that will confound the identification of disease biomarkers and/or mechanism-associated proteins. Proteomics, as with other high-content data strategies for hypothesis generation (genomics, transcriptomics and metabolomics) requires significant resources and funding. Thus, carefully-planned pilot studies are essential to acquire statistically significant data to justify additional resources for larger studies. In the past year, Rich has applied and validated hierarchical statistical models that address the difficult issue of the minimum size and scope of a proteomics study that is needed to produce conclusive preliminary results.

Currently, investigators meet and plan experiments with Rich and the PMSP team to select an experimental design that balances available funds with

predicted statistical power. Once the data are acquired, Rich and the PMSP senior staff process the results to deliver protein identifications and modifications, quantification, network and pathways analysis, and inferential statistical information. Iterative meetings occur with Rich and the senior staff to review data critically, plan future studies, and prepare materials for publication. Rich's diverse knowledge of molecular biology, mass spectrometry, statistics, and bioinformatics is key to the planning and execution of proteomics experiments for the PMSP.



Rich often finds people puzzled when they learn he has a PhD in crop sciences from the University of Illinois at Urbana-Champaign. He explains that the 'formulas' used "to get a higher yield from hybrid corn" are common to both fields. While at U of I, Rich worked under Neil L. Kelleher, PhD, one of the pioneers of "top down" proteomics and developed one of the major software packages that is currently used for the analysis of mass spectrometric data of intact proteins. Rich also has a master's degree in biology and bachelor degrees in molecular biology and psychology. He came to Washington University in 2008 from Champaign. He and his wife, Ann, and their 3-year old daughter, Elizabeth, are happy to be back in St. Louis, where they are closer to family. Rich spends much of his free time playing with or reading to his daughter.

To contact Rich, email him at [rleduc@wustl.edu](mailto:rleduc@wustl.edu) or call (314) 362-9135. To learn more about how the PMSP core can assist you with your research project, see the [ICTS website](http://www.icts.wustl.edu) or email [help@proteomics.wustl.edu](mailto:help@proteomics.wustl.edu).

## In the News

- The Washington University ICTS Clinical Research Training Center is again hosting the National Predoctoral Clinical Training Conference on Monday and Tuesday, May 3 and 4th. The keynote speaker will be [Barbara Alving, MD](#), Director, National Center for Research Resources, National Institutes of Health. If you would like more information or to learn how to register please visit: <http://www.nationalpredocmtg.org/index.html>
- Current KL2 Scholar, Allison Wright Willis, MD, Assistant Professor of Neurology at Washington University published an article in [Neuroepidemiology](#) about her research on Parkinson Disease. "Geographic and Ethnic Variation in Parkinson Disease: A Population-Based Study of US Medicare Beneficiaries," is co-authored with Evanoff BA, Lian M, Criswell SR, and Racette BA. This unique study design amalgamates concepts in Neurology, Epidemiology, Environmental Science, and Public Health in order to understand the spatial distribution of Parkinson Disease with respect to potential environmental neurotoxins.
- The April 2010 national CTSA newsletter can be found at <http://www.ncrr.nih.gov/ctsa/newsletter/currentissue/>. Also learn more about upcoming events, workshops, and intra-CTSA university initiatives at the CTSA website at <http://www.ctsaweb.org/>

## Events & Announcements

**April 13 (1:00–3:00 p.m.)**

**ICTS CRTC Career Development Lecture**  
*“Getting Things Done in the Midst of Chaos”*

**Susan R. Johns, MD**, Professor of Obstetrics & Gynecology, University of Iowa

Wohl Auditorium, Lower Level Wohl Hospital, 4950 Children’s Place, Washington University Medical School Campus. Reservations not required. For more information, contact Julie Headrick at (314) 454-8957 or [jheadric@dom.wustl.edu](mailto:jheadric@dom.wustl.edu)

**April 13 (5:30-7:30 p.m.)**

**Institute for Public Health Lecture**

*“US Racial-Ethnic Disparities: 21st Century Challenges and Opportunities”*

- **Sherman James, PhD**, Susan Bennett King Professor of Public Policy, Professor of Sociology, Community and Family Medicine, and African and African American Studies, Duke University
- **Roderick Jones, EdD, MPA**, President and CEO, Grace Hill Settlement House
- **William Tate, PhD**, Edward Mallinckrodt Distinguished University Professor in Arts & Sciences, Washington University

Missouri History Musuem in Forest Park. Reservations not required. For more information, visit <http://publichealth.wustl.edu/news/Pages/Events.aspx>

**April 29 (Noon–1:00 p.m.)**

**ICTS CARS Brown Bag Seminar**

*“Enhancing Effective Recruitment: Eliminating Barriers and Optimizing Communication to Achieve Diverse Recruitment Goals”*

- **Monique M. Williams, MD**, Assistant Professor of Medicine and Psychiatry, Director of the African American Outreach Satellite at the Alzheimer’s Disease Research Center, Washington University

Holden Auditorium, Farrell Learning and Teaching Center, Washington University Medical School Campus. Registration preferred due to limited seating. WU attendees register via HRMS Self Service, Training & Development. Non-WU attendees email [ICTS@wustl.edu](mailto:ICTS@wustl.edu) or call 314-362-9829.

**April 15th (4:00–5:00 p.m.)**

**Technology Commercialization Seminar**  
*“Public Disclosures and Protecting Your Intellectual Property”*

Moore Auditorium (1st Floor, North Building) Washington University Medical School Campus

Seminar also to be Broadcast on the Danforth Campus (Room TBD)

For information contact Allison Rader at 314-747-0908 or [arader@dom.wustl.edu](mailto:arader@dom.wustl.edu)

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**ICTS NAVIGATOR**  
 Connecting You to the  
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The ICTS would like to introduce our new ICTS Research Navigator:

**Sally Anderson, RN, BSN, CCRC**

Sally’s role is to support ICTS investigators through the clinical and translational and research process and help members draw upon ICTS Cores and services -- from protocol development to publication of results.



For assistance in navigating through the research process, contact Sally at (314) 747-8155 or [ICTSnavigator@wustl.edu](mailto:ICTSnavigator@wustl.edu).