Nutritional data from innovative ‘summer camp’ research program open to the public thanks to new Indiana CTSI database tool

July 10, 2012

Data that has been used for years to set adolescent calcium intake recommendations are publicly available for the first time to research scientists worldwide thanks to a collaborative project between computer scientists at Indiana University and Purdue University supported by the Indiana Clinical and Translational Sciences Institute.

Camp Calcium, an innovative program that provides a fun and educational summer camp environment to children age 11 to 15 -- while also carefully monitoring calcium metabolism and absorption rates to inform international health standards -- was established in 1990 by Connie M. Weaver, Ph.D., deputy director of the Indiana CTSI and Distinguished Professor and chair of nutrition science at Purdue University. Data from the project have been a key factor used by many global health experts in setting their nation’s childhood calcium recommendations, including the Institute of Medicine guidelines employed by the United States and Canada.

“This is the first time all the published data -- as well as all associated articles -- have been collected together in a public forum,” Dr. Weaver said of the project, which includes comprehensive statistics from more than 20 years' worth of data analysis from the camps, including links to all relevant publications and other supplemental information. “I can easily envision dietary guidance committees all over the world using these data, as well as other researchers studying calcium in children.”

The database technology -- originally developed by computer scientists at the Saul Rosen Center for Advanced Computing at Purdue University -- was implemented at the Indiana CTSI by the Advanced Biomedical Information Technology Core -- centered at Indiana University -- in collaboration with Rosen Center scientists. Funds for the project were provided by a supplemental grant to the Indiana Clinical and Translational Sciences Institute from the National Institutes of Health Clinical and Translational Science Award program in fall 2011. The Camp Calcium database will serve as a model for future data collection projects hosted by the Indiana CTSI that require the ability to share information across multiple laboratories or institutions.

Dr. Weaver, who is a member of the Institute of Medicine, said that Marietta L. Harrison, Ph.D., associate vice president for research and director of the Oncological Sciences Center at Purdue and co-primary investigator on the CTSA supplement grant, quickly identified Camp Calcium as the perfect pilot project, which includes comprehensive statistics from more than 20 years’ worth of data analysis from the camps, including links to all relevant publications and other supplemental information. “I can easily envision dietary guidance committees all over the world using these data, as well as other researchers studying calcium in children.”

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Begun in the late 1980s, Camp Calcium developed during a time when Dr. Weaver’s own children were enrolled in summer camp. In order to overcome the challenges involved in measuring calcium intake and absorption in adolescents -- a proposition that requires many young, rebellious clinical trial participants to agree to six weeks of strict physical monitoring and a controlled diet -- she proposed the non-traditional idea of creating a summer camp. Over the past 22 years, the program has grown from 14 teen girls its first year -- plus counselors, who also served as clinical trial participants -- to a powerhouse tradition whose most recent six-week event boasted 70 participants. The project has also expanded from one focused on girls only to trials that have recruited boys and girls in four ethnic and racial groups from across Indiana and five neighboring states. Data is collected using medical imaging technology, such as a bone density scanner, and by taking physical specimens, such as blood and urine samples.

“Ours first groups of kids especially were middle- to low-income children who
may or may not have had an opportunity to go to summer camp,” said Berdine R. Martin, a research associate in the Purdue College of Health and Human Sciences who has helped organize the camp since it began. "They're also exposed to the university environment; it's a chance to come to campus and learn about what college students do."

More than 500 children have participated in the 11 camps held since 1990, with volunteer recruitment efforts going through groups such as Indianapolis Public Schools and Chinese American Service League in Chicago. To keep campers educated and entertained, Dr. Weaver said organizers take advantage of many departments and laboratories across Purdue, with past camps featuring activities such as a visit to an engineering wind tunnel lab, an introduction to veterinary science, and chemistry and physics shows. Camp Calcium has been funded by three major NIH centers, with the most recent support from the Eunice Kennedy Shriver National Institute of Child Health and Human Development.

As the pilot for the larger integration of advanced database capabilities into the system, Camp Calcium is the first of many dynamic, interactive databases expected to be added to the Indiana CTSI HUB, said Ann Christine Catlin, a research scientist at the Rosen Center and director of Purdue’s HUB database development group, who has led the development of 30 advanced medical and scientific databases though dozens of collaborative projects with research groups across the globe, including eight built upon HUBZero, a platform for scientific collaboration developed by Purdue. HUBZero is used by the Indiana CTSI to power its website, grants management system, clinical trials database and various research, collaboration and analysis tools.

Additional HUBZero projects include the Collaboration for Pharmacetical Engineering and Science (pharmaHUB); the IU Simon Cancer Center-Purdue Cancer Care Engineering project (ccEHUB); the George E. Brown Jr. Network for Earthquake Engineering Simulation (NEEShub); catalyzeCareHUB, a project of the Regenstrief Center for Healthcare Engineering; and nanoHUB, a resource for nanoscience and nanotechnology created by the National Science Foundation-funded Network for Computational Nanotechnology.

“This is a very general database technology that has been developed over the last few years and has been used across many different HUBs to build research databases,” Dr. Catlin said. “The fact it’s integrated so tightly with HUB technology allows Indiana CTSI developers to build and integrate new capabilities into the system.”

Features include the ability to instantly manipulate information by category and create on-the-fly data visualizations such as line graphs. It’s possible to create both secure, login-protected databases -- for use by select research team members -- and completely open databases in which anyone may access the information, such as the Camp Calcium project. (All personal, identifiable information on individual campers has been has eliminated from the public data.) A user-friendly version, in which data may be imported straight from a traditional Excel document and instantly populate an online table, is under development.

"For the past 20 years, we've basically been managing everything by email attachments and Microsoft spreadsheets," Dr. Weaver said. "Now that we've got this new tool, I'm eager to see the Indiana CTSI provide the same capabilities to many other interdisciplinary and inter-institutional projects."

The Camp Calcium database is available on the Indiana CTSI HUB. To learn more about the database project’s development, including a list of all research team members, visit the Camp Calcium database project page.

To learn how the new Indiana CTSI HUB database system can support your research project, email info@indianactsi.org.

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Scientist to lead study on the use of telehealth to assist veterans with mild brain injury

July 10, 2012

As a rehabilitation scientist at the Richard L. Roudebush VA Medical Center in Indianapolis, Jacob Kean, Ph.D., understands the cost of service on America’s veterans. But as number of soldiers returning from Iraq and Afghanistan with traumatic brain injury continues to rise, he noted that one of the military’s most effective tools for helping veterans manage their condition long-distance wasn’t being fully used.

A visiting assistant research professor of physical medicine and rehabilitation at the IU School of Medicine and a research scientist at the Roudebush VA Medical Center, Dr. Kean is the recipient of a five-year, $920,000 career development award from the Department of Veterans Affairs Rehabilitation Research and Development Service to leverage the VA’s telehealth system for veterans suffering from the chronic symptoms of mild traumatic brain injury. The system will be piloted at five hospitals serving veterans and active duty soldiers in the South and Midwest, including the Walter Reed National Military Medical Center in Bethesda, Md.

Dr. Kean’s research developed from earlier work supported by a Project Development Team grant and Young Investigator Award (K Award) from the Indiana Clinical and Translational Science Institute. He also serves as a core member of the IUPUI Signature Center for Brain Rehabilitation, Advanced Imaging and Neuroscience.

“There have been many other studies on mild brain injury symptoms, but none on self-management related to the condition,” Dr. Kean says. “Our health care system has never considered brain injury to be a chronic condition, but victims experience lifelong consequences, including neuro-degeneration and other progressive problems.” An estimated 180,000 recent war veterans have returned from service with mild to moderate brain injury, with 10 to 20 percent demonstrating persistence symptoms such as chronic headaches, lack of concentration, depression, sleeplessness and re-experiencing past trauma.

In addition to Walter Reed, the system will be tested at the Roudebush VA Medical Center in Indianapolis; Michael E. DeBakey VA Medical Center in Houston, Texas; Brooke Army Medical Center in San Antonio, Texas; and Hunter Holmes McGuire Veterans Administration Medical Center in Richmond, Va.

The first 18 months of the grant period will go toward building a conceptual framework for measuring self-management in veterans, including interviews with veteran’s and experts in self-management and mild brain injury.

This data will inform an “adaptive algorithm” to test patients for qualities that suggest whether they are effective or ineffective self-managers. Potential indicators might include whether a patient is skilled at sticking to medications or getting regular exercise.

“It may be that the patient will get an iPad in a waiting room and answer five to eight questions, which in turn are informed by an algorithm that includes 200 questions,” Dr. Kean said. “So, in a span of two minutes, they’re measured against a broad continuum” — whether physical functioning or mental health or some other quality determined to affect self-management — “using an ultra-brief assessment that’s very precise and provides data that informs the clinical interaction.”

The aim will be to give physicians and care managers more information about mild brain injury patients’ self-management skills in order to “steer them toward take that next step” in controlling their condition. A patient with strong self-management skills but poor self-efficacy — the belief that he can achieve
meaningful change -- may be given an appointment with a psychologist. Another patient whose profile suggests she is good at making healthy life changes but struggles to maintain them may be steered toward a peer support program.

“We know there are super self-managers and there are very poor self-managers, but first we need to conceptualize self-management to understand whether the steps we’re asking our veterans to take are going in the right direction or the wrong direction,” Dr. Kean said.

Integrating the assessment with the VA’s extensive telehealth system could also enable innovative test delivery methods, such as using text-messaging to assess veterans before they even set foot in the hospital. The VA has placed an increased emphasis on telehealth over the past several years to reduce the burden on hospitals while also delivering high-quality health care that does not require frequent visits to a hospital, a step many veterans resist because of time lost to travel and waiting rooms, as well as lack of access to transportation. The system also enables closer disease monitoring during a time when veteran’s hospitals are increasingly concerned about the danger of missed early warning signs and their patients’ troubles making the transition from military to civilian life.

Among collaborators on the project are David Xavier Cifu, M.D., national director of the Physical Medicine and Rehabilitation Program Office at the Department of Veterans Affairs, who also serves as a physiatrist at Hunter Holmes McGuire. The primary mentor on the project is Kurt Kroenke, M.D., Chancellors Professor of Medicine at the IU School of Medicine, a research scientist with the Center of Excellence on Implementing Evidence-Based Practice at the Roudebush VA Medical Center and an investigator at the Regenstrief Institute.

Additional co-mentors include James Malec, Ph.D., professor of physical medicine and rehabilitation at the IU School of Medicine and research director for the Rehabilitation Hospital of Indiana; Linda Williams, M.D., associate professor of neurology and anesthesia at the IU School of Medicine and director of the VA Stroke Quality Enhancement Research Initiative Center; Patrick Monahan, Ph.D., associate professor of biostatistics at the IU School of Medicine; and Teresa Damush, Ph.D., associate research professor of medicine at the IU School of Medicine, research scientist at IU Center for Aging Research and Regenstrief Institute, and implementation research coordinator at the VA Stroke QUERI Center. Other team members include Elaine Skopelja, MALS, associate librarian at the Ruth Lilly Medical Library at the IU School of Medicine.

Dr. Kean said the greatest challenge for the research team will be adapting a telehealth system that up until now has been brought to bear on chronic conditions that require regular physical measures -- such as collecting weight and blood pressure data from special scales and blood pressure cuffs that connect to the phone or Internet -- to one that can effectively process self-reported statements from patients about their health.

“Traditionally, telemedicine has been used to collect objective measures,” Dr. Kean said, noting that the condition now under investigation will require processing answers to questions the system -- as well as many soldiers -- continues to struggle with.

“Mild brain injury, by contrast, generally involves measuring symptoms related to feelings and emotions,” he said.

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Young investigator awardees network, share research at annual translational science conference

July 10, 2012

More than a dozen Indiana CTSI investigators traveled to Washington, D.C. April 18 to 20 to present their research and learn more about the ways in which translational science can accelerate research and advance health care nationwide during "Translational Science 2012: Improving Health Through Research and Training," the annual conference of the Association for Clinical and Translational Science.

The investigators were able to participate in the event due to their selection in the Indiana Clinical and Translational Science Institute’s Young Investigator (K Scholars) award program, a fellowship program that provides career development and research support to investigators working on promising research projects in the early phases of their careers. The conference provided an opportunity to learn about their fellow investigators’ research projects, explore the role of mentorship in enhancing translational research and learn from influential figures in the field of translational science.

“I thought the highlight of the conference was the session on mentoring,” said Catherine Mosher, Ph.D., assistant professor of psychology at Indiana University-Purdue University Indianapolis. “We had the opportunity to evaluate and discuss our mentoring relationships in small groups as well as potential mentoring challenges in a large group setting. It was the most thorough and helpful session on mentoring that I have ever attended.”

Dr. Mosher, whose poster presentation focused on her work developing, evaluating and disseminating internet-based interventions to improve the physical and psychological well-being of lung cancer patients and their family caregivers, also noted the event presented an opportunity to “meet scientists from around the country, including those conducting work similar to my own,” as well as get to know her own colleagues at the IU School of Medicine. She also pointed out the conference presented useful information about new initiatives that focus on clinical and translational science, such as the Patient-Centered Outcomes Research Institute.

Joshua Shrout, Ph.D., assistant professor of microbiology at the University of Notre Dame, also commented on the opportunity presented by the trip to network with colleagues from inside and outside his own institution and field of study.

“It was great to interact more with my Indiana CTSI colleagues,” said Dr. Shrout whose work focuses on studying how the bacteria Pseudomonas aeruginosa colonizes and coordinates behavior to establish infections. “I was able to get to know most of the Indiana attendees much better as we learn much more about research that differs from my own — the breadth of both clinical and fundamental research was good.”

Zhanxiang Wang, M.D., Ph.D., assistant research professor of pediatrics (endocrinology/diabetes) at the IU School of Medicine, agreed.

“As a basic research scientist, I had more opportunities to be exposed to more clinic-related researches,” said Dr. Wang, whose research focuses on the value of readily available nutritional supplements in restoring or augmenting beta cell function in humans with diabetes.

Several also pointed out to the chance to hear a keynote presentation by Francis Collins, M.D., Ph.D., director of the National Institutes of Health, as a highlight of the conference.

“Dr. Collin’s detailing specific initiatives and translational areas being promoted by the NIH was of great interest, but his answers to questions from the audience really held people's attention,” Dr. Shrout said. He provided a
pragmatic and optimistic view of the future of medical sciences research.”

“The talk by Dr. Collins really gave us a good understanding of other opportunities,” added Ragini Vittal, Ph.D., assistant research professor of medicine (pulmonary) at the IU School of Medicine investigating the testing and development of an anti-fibrotic therapeutic agent for the treatment of idiopathic pulmonary fibrosis.

Dr. Vittal who also noted the conference presented the chance to meet and learn more about other “prominent personalities” from the Indiana CTSI.

These personalities included Anantha Shekhar, M.D., Ph.D., director of the Indiana CTSI, who was inducted as president of ACTS during the conference, and Kurt Kroenke, M.D., director of the Indiana CTSI Research Education, Training and Career Development Program, who received the group’s 2012 Distinguished Educator Award. Also honored during the visit was Christopher Callahan, M.D., director of the IU Center for Aging Research and Cornelius and Yvonne Pettinga Professor in Aging Research at the IU School of Medicine, who received the 2012 National Award for Career Achievement and Contribution to Clinical and Translational Science.

Additional Indiana CTSI leadership and program managers joining the investigators on their trip included Linda DiMeglio, M.D., M.P.H., director of career development Research Education, Training and Career Development Program at the Indiana CTSI and associate professor of pediatrics at the IU School of Medicine; Colleen Gabauer, Ed.D., program manager for the Predoctoral Training Program at the Indiana CTSI and director of Office of Interdisciplinary Graduate Programs at Purdue University; Carrie Hansel, program coordinator for the Translational Science Degree Program at the Indiana CTSI; R. Mark Payne, M.D., director of the Translational Science Training Program at the Indiana CTSI and professor of pediatrics and medicine and molecular genetics at the IU School of Medicine; Tammy Sajdyk, Ph.D., translational sciences research officer at the Indiana CTSI; and Jon Story, Ph.D., director of the Predoctoral Training Program at the Indiana CTSI and professor of nutritional science and associate dean of the graduate school at Purdue University.

A complete list of Indiana CTSI K Awardees participating in the trip includes Shawn Ahlfeld, M.D., assistant professor of clinical pediatrics (neonatal-perinatal medicine) at the IU School of Medicine; John Breinholt, M.D., assistant professor of clinical pediatric (cardiology) at the IU School of Medicine; Jon Duke, M.D., M.S., assistant professor of medicine and knowledge informatics and translation at the IU School of Medicine; Laura Hays, R.N., Ph.D., visiting assistant scientist in adult health at the IU School of Nursing; Shoji Ichikawa, Ph.D., assistant research professor of medicine (endocrinology) at the IU School of Medicine; Philip Johnson, Ph.D., assistant professor of psychiatry at the IU School of Medicine; Elaine Lipscomb, Ph.D., assistant research professor of medicine at the IU School of Medicine; Melissa Kacena, Ph.D., assistant professor of orthopaedic surgery at the IU School of Medicine; Catherine Mosher, Ph.D., assistant professor of psychology at IUPUI; Julie Otte, Ph.D., R.N., O.C.N., visiting assistant scientist at the IU School of Nursing; Brian Samuels, M.D., Ph.D., assistant professor of ophthalmology and cellular and integrative physiology at the IU School of Medicine; Joshua Shrout, Ph.D., assistant professor of microbiology at the University of Notre Dame; Margie Snyder, Pharm.D., assistant professor of pharmacy at Purdue University; Ragini Vittal, Ph.D., assistant research professor of medicine (pulmonary) at the IU School of Medicine; Zhanxiang Wang, M.D., Ph.D., assistant research professor of pediatrics (endocrinology/diabetes) at the IU School of Medicine; and Clark Wells, Ph.D., assistant professor of biochemistry and molecular biology at the IU School of Medicine.
Indiana CTSI Opportunities — July 2012

Research Invention and Scientific Commercialization (RISC) Program — applications open

The Indiana CTSI Research Invention and Scientific Commercialization grant program aims to foster and encourage cutting-edge scientific breakthroughs and technology development that will serve as the foundation for new business enterprises and/or promote the advancement of translational research or health related objectives. Projects with strong and immediate potential to develop into commercialization of inventions, technologies or other intellectual property will be given funding priority.

Eligible applicants must be Indiana University faculty members who have filed a disclosure with the IU Research and Technology Corp. Applications to this program are limited to $25,000 and are typically for one year or less. Approximately four to five awards are made under this CTSI mechanism each year.

This is an open request for applications. There is no due date.

To access complete application information, including complete eligibility guidelines and submission forms, visit www.indianactsi.org/grants. Log in using your institutional username and password and select “Research Invention and Scientific Commercialization (RISC) Program.” For more information, contact 317-278-2874 or info@indianactsi.org.

Indiana Project Development Team pilot grants — applications open

The Project Development Team program is a unique pilot project program found only at the Indiana CTSI. A Project Development Team is a committee of multidisciplinary researchers who assist investigators in developing ideas/hypotheses into well-designed translational research projects. The teams serve as “one stop shops” by providing investigators access to protocol development; pilot funding; biostatistics; IRB/regulatory and nursing support – as well as facilitating access to core resources and potential collaborators on the IU (IU School of Medicine, IUPUI and IU-Bloomington), Purdue and Notre Dame campuses.

Eligible applicants include faculty at IU, Purdue and Notre Dame. The Indiana CTSI has 10 Project Development Teams, including programs focused on preclinical sciences, clinical sciences, pediatric sciences, behavior and population sciences, imaging sciences, community and urban health, networks, complex systems and health; and program project planning. There are also two Project Development Team specifically designed to facilitate research at Purdue and Notre Dame.

This is an open request for applications. There is no due date.

To access complete application information, including eligibility guidelines, submission forms and a proposals presentation checklist, visit www.indianactsi.org/grants. Log in using your institutional username and password and select “CTSI Project Development Teams --2012.03.” For more information, email info@indianactsi.org.

Mark Your Calendars: 2012 Fall Core Pilot grants open in August

The Indiana CTSI Fall Core Pilot Grant program will fund up to $10,000 in services provided by Indiana CTSI-designated core facilities. Faculty at Indiana University (IU School of Medicine, IUPUI, IU-Bloomington), Purdue University and the University of Notre Dame are eligible to apply.

Additional information will be available at indianactsi.org/grants in August.

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Panel Discussion: Ethical and Scientific Issues in Studying the Safety of Approved Drugs

The IU Center for Bioethics will co-host a panel presentation on the “Ethical and Scientific Issues in Studying the Safety of Approved Drugs” from 3 to 4 p.m. Wednesday, July 11, at the Health Information and Translational Science (HITS) Building, Room 1110.

Panel presenters are Sir Alasdair Breckenridge, chair of the Medicines and Healthcare Products Regulatory Agency, London, U.K.; Bruce Psaty, M.D., Ph.D., professor of medicine, epidemiology and health services and co-director of the Cardiovascular Health Research Unit at the University of Washington; and Eric Meslin, Ph.D., director of the IU Center for Bioethics and associate dean for bioethics at the IU School of Medicine. Breckenridge, Psaty and Meslin were members of the Institute of Medicine Committee on Ethical and Scientific Issues in Studying the Safety of Approved Drugs, whose recently published report is the focus of the panel.

This event is co-hosted by the IU Center for Bioethics; Indiana Clinical and Translational Sciences Institute; Regenstrief Institute; Office of the Executive Associate Dean of Research, IU School of Medicine; and the Indiana Institute for Personalized Medicine.

For more information, visit www.indianactsi.org/events/details/499 or contact Eva Jackson at 317-278-4034 or evajacks@iupui.edu.

CTSA Webinars on Collaboration Tools and Public-Private Partnerships

The CTSA Consortium Coordinating Center (C4) will host two webinar events in July:

12 p.m. July 13: The CTSA Tool Shop Webinar Series will present a webinar by the Oregon Health and Science University on ShareCenter, an open-source tool developed that facilitates organic sharing across boundaries. The National Center for Research Resources (NCRR) and National Center for Accelerating Translational Sciences (NCATS) funded this tool’s development to provide the CTSA Consortium with a convenient web platform for networking, exchanging resources and collaborating. CTSA personnel can use ShareCenter to connect and share with each other, while CTSA centers can set up the open-source package, which includes a version optimized for research networks, or create their own private “channel” on CTSA ShareCenter. To register, visit https://www1.gotomeeting.com/register/299034192.

2 p.m. July 25: Melanie Leitner, Ph.D., of Prize4Life and Barbara Mittelman, M.D., of the NIH Program on Public-Private Partnerships, will deliver presentations as part of the CTSA Public-Private Partnerships Webinar Series. This series is produced by the CTSA Public-Private Partnerships Key Function Committee to enable academic health centers and universities the opportunity to share best practices and expertise related to partnerships that facilitate discoveries into treatments. To register, visit student.gototraining.com/r/2186262661609244160 or call 1-877-568-4109 and use the registration code 224-128-092. Questions to Jody Sachs at 301-435-0802 or sachjsig@mail.nih.gov.

Fourth Annual Indiana CTSI Meeting — Aug. 31

The fourth annual meeting of the Indiana Clinical and Translational Sciences Institute will be Friday, Aug. 31. This annual event will take place at University Place Conference Center and Hotel on the IUPUI campus in downtown Indianapolis. The highlight of the program will be plenary talks by leaders from the National Institutes of Health (NIH), Patient-Centered Outcomes Research Institute (PCORI), Center for Medicare and Medicaid Services (CMS) and elsewhere that will provide insights into how biomedical research is evolving nationally. It will also provide an opportunity to learn more about the Indiana CTSI, participate in poster presentations and breakout sessions, and meet new colleagues and collaborators.

This is a free event and is open to anyone who wants to learn more about the Indiana CTSI and its programs. A complete agenda and registration information will be available at www.indianactsi.org. For more information, contact info@indianactsi.org.

To see photos and explore presentations from previous annual meeting events, visit Indiana CTSI News Center and select the drop down menu item labeled “Meetings.”

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{comments on}