Director's Corner by Ronald J. Sokol, MD

Welcome to CCTSI Connections, the electronic newsletter from the Colorado Clinical and Translational Sciences Institute. CCTSI Connections will contain important CTSA updates, cutting-edge research being conducted within the CCTSI, highlights from CCTSI core programs, and funding and education opportunities. Our goal is to provide you with the latest news and enable you to best use the CCTSI resources. We hope that this format meets your needs, and we are open to suggestions and story ideas. If you have information you would like included in a future newsletter, please contact Natascha Palmer at natascha.palmer@ucdenver.edu. Please feel free to share this newsletter widely with colleagues.

Lastly, remind your colleagues that if they are not already members of the CCTSI they should register at http://cctsi.ucdenver.edu and click on the membership button ASAP.

Upcoming Events & Important Dates

Biostats Seminars

Basics of Time to Event Analysis
July 26, 2010 from 3-4pm
Education 2 North, Room 2303

Informatics Seminars

REDCap Tutorial
July 22, 2010 from 1-2:30pm
Building 500 3rd floor conf room

Pilot Awards’ Deadlines

The annual Request for Applications for the CCTSI Pilot Grants Program is now available. The program consists of the 1) CO-Pilot Awards for Clinical and Translational Research; 2) Child and Maternal Health Pilot Awards; and 3) Community Engagement Pilot Awards for encouraging Community-Academic Partnerships. These pilot grants will provide a total of $700,000 of funds for translational research with effective start dates of January 1, 2011. Like last year, Letters of Intent, where required, are due in early September and applications are due in early October. Precise key dates for each program are listed in each program’s RFA.

The RFAs for the three pilot programs can be found on the CCTSI website. Please note that in order to apply for any of the pilot grants, one is now required to register as a member of the CCTSI. CCTSI membership registration is fast and easy, thus allowing you access to training, funding and other resources and tools.

You can obtain more information about CCTSI and these funding opportunities by visiting http://cctsi.ucdenver.edu/Funding. If you have specific questions regarding the three pilot programs please contact the point people listed below. For other questions, feel free to contact the CCTSI office at 720-848-7100.

- For questions regarding the CO-Pilot Awards for Clinical and Translational Research contact Sarah Stallings at 720-848-5519 or sarah.stallings@ucdenver.edu
- For questions regarding the Child and Maternal Health Pilot Awards contact Bonnie Savone at 303-724-1602 or bonnie.savone@ucdenver.edu
- For questions regarding the Community Engagement Pilot Awards for encouraging Community-Academic Partnerships contact Dee Smyth at 303-724-2447 or dee.smyth@ucdenver.edu
K to R Transition (KTR) Program
The KTR Program, a new CCTSI pilot program, provides the opportunity for current K awardees or equivalent to submit their R type (or R equivalent) grant proposals for internal review prior to submission to the funding agency.

To apply to the KTR program, participants must have a K award or equivalent and plan to submit an R type application or equivalent. Also a letter of intent, due Friday, July 23, 2010, is required requesting your name, department, mentor, grant type, agency, abstract and specific aims for the proposal.

Participants of this program will receive insight into the grant review process and help to improve the science and format of their proposal. For additional information regarding the KTR Program, please contact Maggie Wierman, MD, KTR Director at margaret.wierman@ucdenver.edu

CCTSI Grand Rounds Series (Save the Date)
The CCTSI Grand Rounds Series was launched this spring when Barbara Alving, MD from NIH came and spoke at AMC. The series will take place three times a year (fall, winter & spring), from 12-1pm with lunch provided. Upcoming speaker dates are as follows:

Dan Theorescu, MD, AMC Cancer Center Director --- Tuesday, October 26, 2010; 12-1pm at AMC room: TBD
Dan Maysys, MD, Vanderbilt Biomedicine Informatics --- Thursday, February 3, 2011; 12-1pm at AMC room: TBD
Nanette Santoro, MD, AMC Obstetrics & Gynecology Chair --- Thursday, May 12, 2011; 12-1pm at AMC room: TBD

First Annual Ethics Conference
"Financial Conflicts of Interest In Translational Research: Ethical & Regulatory Issues," featuring keynote speaker Jeremy Sugarman, MA, MPH, MD, Berman Bioethics Institute, Johns Hopkins University, is scheduled for Thursday, October 14, 2010 in Shore Auditorium at the Nighthorse Campbell Building at AMC. The purpose of this conference is for participants to gain an understanding of the current policies, practices and ethical issues associated with the reporting, management and disclosure of financial relationships between private industry, biomedical researchers, and research institutions. For additional information please contact Marilyn Coors at 303-724-3993.

First Annual Research in Nursing at CTRC Conference
"Advances In Medical Research - How Will Our Future be Affected," is a continuing education conference focusing on CTRC research. This conference is scheduled for Tuesday, November 30, 2010 in Mt Yale at TCH. It is intended for all CTRC employees, including TCH and UCH nurses. In fact, nurses will be able to receive continuing education credits. For more information please contact Lisa Lewis at lewis.lisa@tchden.org.

Research Features
Pediatric Diabetes Study: Effect Of Metabolic Control At Onset Of Diabetes On Progression Of Type 1 Diabetes

The Barbara Davis Center for Childhood Diabetes is currently researching novel therapies for patients newly diagnosed with type 1 diabetes (T1D). Type 1 Diabetes occurs when an autoimmune process destroys the body’s own insulin producing cells in the pancreas. Insulin is what allows glucose (sugar) to be utilized by muscles and other body tissues for energy, and without it the body will eventually starve to death. Typically patients diagnosed with T1D start taking insulin by injection and checking their blood sugar to make sure it is not too low or too high. There is currently no cure for the condition, and patients need to take insulin the rest of their life. Previous research has shown that at the onset of clinical diabetes, patients still make some of their own insulin in their pancreas. However, as the disease progresses, the remaining healthy cells eventually die as well, until no endogenous insulin is produced.

Drs. Robert Slover, H. Peter Chase, and their research team at the Barbara Davis Center are conducting a groundbreaking study to answer the question of whether very intensive control of glucose levels at the onset of diabetes could help the pancreas produce some of its own insulin for a longer period of time. The study involves enrolling patients diagnosed with T1D in the past 7 days and randomizing them to either standard diabetes care or "intensive" diabetes care that involves cutting-edge therapies including a "bionic pancreas." The intensive patients are admitted to either Children's Hospital or University Hospital for 72 hours to undergo treatment with an insulin pump, a glucose sensor that is placed under the skin, and a computer that determines how much insulin should be delivered every minute to keep their glucose levels in near-perfect control. This system is called the "bionic pancreas" or "closed loop system", because it essentially does the work of a functioning pancreas — sensing glucose levels and administering insulin as appropriate. This system is only available in this research setting, and is sophisticated enough that the Food and Drug administration requires medical professionals to directly monitor the system 24 hours a day. After the patient spends 72 hours hooked up to the bionic pancreas, they go home with the latest commercially available technologies to manage their diabetes for the following two years. This includes an insulin pump and a glucose sensor, similar to what was used during the hospital admission. The one key difference is that they will have to decide how much insulin to take and when. There is no computer available to them to make those decisions. At the end of two years, the standard care group and intensive care groups will be compared in terms of remaining insulin production and glucose control.

To date, there are 14 subjects enrolled in the study at three centers — the Barbara Davis Center (BDC), Stanford University, and Yale University. Two subjects at the BDC have been randomized to intensive treatment and have completed the bionic pancreas admission. Families are initially daunted by the prospect of participating in research so soon after being given the news that they have T1D. Many families have declined to participate for this very reason. All the families who have decided
to enroll have stated a common goal to contribute to diabetes research in hopes of a cure in the future. They also want the opportunity to experience the most aggressive diabetes therapy available today. One of the BDC patients is 10 years old — the youngest age allowed in the study. Although initially scared by the diagnosis and the idea of being admitted to the hospital, she decided that being as healthy as possible was worth it, so that she could continue to do the things she loved — biking, hiking, playing guitar, swimming, camping with her family, reading, playing with friends. Her parents both work in healthcare and were excited about the opportunities the study offers. Although the study just started this past year, the patients in the intensive group anecdotally report needing very low insulin doses, which may mean their pancreases are still making insulin. Formal study results can be expected in 2011.

For more information about the study, contact Laurel Messer, RN, MPH, primary coordinator for the study at laurel.messer@ucdenver.edu.

### Adult MOXI Trial: Myogenic and Osteogenic Responses to eXercise and Ibuprofen

The MOXI Trial

Bone health is an important aspect of overall health. In addition to supporting our muscles and protecting our internal organs, our bones make our blood cells, store minerals and other nutrients our bodies need, and help maintain our body’s pH. Osteoporosis, a major threat to bone health, weakens bone structure and reduces bone strength. Because bones are living tissues that are constantly being built up and broken down, our eating and exercise habits can improve our bone health and reduce our risk of developing osteoporosis at any age.

Researchers with the CTSI-affiliated Exercise Research Laboratory are investigating how muscles and bones respond to exercise and whether there are factors influencing that response that would be important for health. Weight-bearing activities are essential for maintaining or increasing bone density. Studies of animals strongly suggest that nonsteroidal anti-inflammatory drugs (NSAIDs), like ibuprofen or naproxen block this bone-building response when taken before the weight-bearing exercise but not when taken after the exercise. In a recent study, Dr. Wendy Kohrt and her co-investigators examined this NSAID effect on exercise-induced bone-building in women. The preliminary results were encouraging for those of us who need to take NSAIDs to alleviate pain or discomfort when we exercise.

In the study, women aged 21 to 40 years old were randomized into three groups that took 2 study pills on every day that they exercised: one group took ibuprofen before exercise and a placebo after, one group took a placebo before and ibuprofen after, and one group took placebo before and after exercise. Similar to the results in animal studies, the least favorable changes in bone density occurred in the women who took ibuprofen before exercise sessions. Surprisingly, though, the most robust increases in bone density occurred in the women who took ibuprofen after exercise sessions. Dr. Kohrt suspects that this skeletal benefit of ibuprofen could come from the ibuprofen restraining the inflammation caused by the exercise.

The ongoing MOXI trial expands on these findings from the preliminary study by determining whether the effects of NSAIDs observed in young women also occur in older adults. The Primary Aim is to determine whether the timing of ibuprofen use on exercise-induced bone-density changes. The researchers also want to evaluate potential mechanisms underlying the bone-density changes, and determine whether the timing of ibuprofen use relative to exercise also influences increases in muscle mass in response to exercise training. If the timing of NSAID use relative to exercise determines whether there are unfavorable (before exercise) or favorable (after exercise) effects on the musculoskeletal system, this could lead to a simple, but important, public health message for adults who exercise to maintain bone health and use NSAIDs to manage pain: take NSAIDs immediately after exercise, if needed.

For more information about the study, contact Wendy M. Kohrt, PhD, principal investigator at wendy.kohrt@ucdenver.edu.

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### CCTSI Program Spotlight

**New Summer Education Program for Undergraduate Minority Students**

The CCTSI Summer Undergraduate Minority Mentoring in Translational Science (SUMMIT) program brings together underrepresented scholars that are participating in the following programs: Graduate Experience for Multicultural Experienice (GEMS), Cancer Research, Undergraduate Pre-Health Program (UPP), Summer Undergraduate Research Fellowship in Pharmacology (SURF), Undergraduate Research Opportunity Program (UROP), and Research Initiative for Scientific Enhancement (RISE) for the purpose of creating a community of leadership and learning. SUMMIT is a unique program designed to enhance summer undergraduate research education by focusing on the unique needs of Hispanic, Native American, and Alaskan Native students.

Selected trainees participated in a 1-day translational research event titled, "Practicing the Art of Arguing." This took place on June 28, 2010, and more than 25 students were in attendance. The event was designed to help students develop critical skills for a successful educational and research career.

Students also participated in a summer 'Leaders Lunch' series that highlighted the accomplishments of our diverse university faculty. Speakers at the "Leaders Lunch" series included Rob Winn, MD, who spoke July 9th, Latoya Jones Braun, PhD, who spoke July 16th, and Diego Restrepo, PhD, who is scheduled to speak July 30th.

In addition, the CCTSI is providing stipend support for qualifying candidates in these programs to encourage and increase diversity across clinical translational disciplines.

For additional information please contact Emily Warren, ETCD Program Manager at emily.warren@ucdenver.edu.

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### Bulletin News

#### Ultrasound Services

The Children's Hospital CTRC is proud to offer select ultrasound services at "NO COST" for Pediatric SARC approved protocols. With exam costs ranging from $500 to $1000 this is a wonderful resource for PIs. For more information please contact Jim Thorpe at 720-777-5049 or thorpe.james@tchden.org.
Comparative Effectiveness Research (CER) Scholar Recipients

Congratulations to Heather O. Anderson, PhD (Schools of Pharmacy and Public Health); Ingrid Binswanger, MD, MPH (School of Medicine); Jonathan D. Campbell, PhD (School of Pharmacy); and Elaine H. Morrato, DrPH on being awarded CER funding beginning July 1, 2010. The CER Scholars Program provides three years of consecutive funding for comparative effectiveness research and career development at UC Denver to talented and qualified health professionals. For more information, please contact AHRQ K12 Director, Anne Libby,PhD (Colorado School of Public Health and COHO) at anne.libby@ucdenver.edu.

National Consortium Update

The June 2010 issue of the National CTSA Consortium E-newsletter highlighted the CCTSI. This national exposure of our Institute's unique attributes, emphasizes our innovation and cutting-edge programs. Please visit http://www.ncrr.nih.gov/ctsa/newsletter/June2010/ to view this article.

In addition, the NIH-NCRR just announced 9 new CTSA programs. For a full list of the programs visit http://www.ncrr.nih.gov/clinical_research_resources/clinical_and_translational_science_awards/consortium_directory/