As winter ends and spring begins the CCTSI is launching the initial planning phase of our NIH grant renewal due June 2012. In the next 15 months we will be reaching out to you at various stages asking for your participation and feedback as we work on this project. Please provide your valuable input about ways to improve the CCTSI to meet the needs of our clinical and translational investigator and trainee communities. Stay tuned for more details.

The CCTSI had a very successful External Advisory Committee meeting this past January. Our reviewers were very impressed with our accomplishments over the past 12 months and had several insightful suggestions that we are working on. Thank you all for contributing to this review.

Moving forward, the CCTSI continues to provide a wide variety of programs to meet your needs. For example, the ETCD core has a Nuts & Bolts seminar on May 18th and is offering funding for 8 PhD students interested in the CCTSI TL1 Pre-doctoral fellowship program. The Applications are due on May 1, 2011. For more details please visit the Upcoming Events section.

Also, we encourage all of you to attend the second annual Community Engagement Open House & Poster Session, Thursday, April 14, 2011 from 5-8pm in Research 2 Building (RC2), Rm 2100 at the Anschutz Medical Campus. RSVP online. Please contact Montelle Tamez at montelle.tamez@ucdenver.edu or call her at 303-724-5736 for details.

Please save the date for the quarterly CCTSI Grand Rounds which will take place on Thursday, April 21, 2011 from 12-1pm at AMC room: RC 2 P15-2100 Trivisible Room. Her presentation is entitled "Research in Reproduction in Women and the Facilitative Role of the Clinical Translational Research Center (CTRC)". Dr. Santoro is an international expert on reproductive endocrinology and an outstanding speaker. Please attend (lunch will be provided).

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

**Upcoming Events & Important Dates**

**CCTSI Grand Rounds Series**
The CCTSI Grand Rounds Series was launched spring 2010 with Barbara Ahing, MD from NCRR/NIH speaking at AMC. The series highlights cutting-edge translational research or biotechnology and takes place three times a year (fall, winter & spring) from 12-1pm with lunch provided.

Nanette Santoro, MD, UCD AMC Obstetrics & Gynecology Chair will be delivering the next Grand Rounds on Thursday, April 21, 2011; 12-1pm at AMC room: RC 2 P15-2100 Trivisible Room. Her presentation is entitled "Research in Reproduction in Women and the Facilitative Role of the Clinical Translational Research Center (CTRC)". Dr. Santoro is an international expert on reproductive endocrinology and an outstanding speaker. Please attend (lunch will be provided).

**CCTSI Informatics Seminar Series**
Mark your calendars now and save the Third Thursday at Three-Thirty-Three pm. The Informatics Seminar Series schedule is as follows:

April 21, 2011 — Development of an Enterprise Warehouse Supporting Process Improvement and Research: Mount Sinai’s Experience — Stephen Ellis
May 19, 2011 — caBIG Hither and Yon: An Update on National and Local Activities in the Center Biomedical Informatics Grid — Jessica Bondy

All seminars are at the Teaching Lab 2 at the Health Sciences Library on the Anschutz Medical Campus. Please be certain to arrive early as refreshments will be served thirty minutes prior to the seminar start. If you are unable to attend in person, please note that all seminars are available via live video stream. For more information on the series or to view archived
trainings, visit the Informatics Section of the CCTSI website at cctsi.ucdenver.edu.

CCTSI Nuts & Bolts Series
This series introduces the offerings of the CCTSI and clarifies how these resources can be leveraged and accessed to accelerate your research. Each session will provide an overview of the CCTSI Pillar Programs including: Discovery Translation, Community Translation, Translational Technologies and Novel Methods, Child and Maternal Health Research, Community Engagement and Research, Translational Informatics and Education, Training and Career Development. Several sessions are planned during the 2010-2011 academic year.

For more information contact Emily Warren ETCD Programs Manager as registration is required.

Wednesday, May 18th, 2011  —  4-5pm Shore Family Forum, Nighthorse Campbell
The Community Engagement core will discuss their pilot grant program and the key role of the PACT Council in promoting and facilitating community based participatory research.

First Annual International SciTS (Team Science) Conference
The Annual International Science of Team Science (SciTS) Conference will be held April 11 – 14, 2011 in Chicago, Ill. The week-long SciTS Conference is an international, multi-agency forum dedicated to the empirical field of the science of team science (SciTS), and brings together thought leaders from a broad range of disciplines including; translational research, evaluation, communications, social and behavioral sciences, complex systems, technology and management in an effort to enhance understanding of how best to engage in team science to meet society’s needs.

The event is sponsored by Research Team Support & Development (RTS&D) of the Northwestern University Clinical and Translational Sciences (NUCATS) Institute.

Research Features

The University of Colorado Denver | Anschutz Medical Campus - The Denver Hospice- Visit Model Study
Jean S. Kutner, MD, MSPH, is the principal investigator for this study which seeks to develop an evidence-based model of hospice care provision relevant to a resource-restrained environment. Specifically, they are investigating whether non-face-to-face nurse visits can be a feasible, acceptable and successful supplemental model of high-quality hospice care. Using a mixed method approach, they first gathered e-survey data from hospices nationwide regarding their past, present and future uses of non-face-to-face patient visits. Semi-structured interviews were then conducted with a sample of survey respondents to gather deeper understanding of the effects, benefits and barriers to providing non-face-to-face care.

Based on the survey and interview feedback, they conducted five focus groups of The Denver Hospice staff to learn more about the feasibility and acceptability of implementing non-face-to-face visits. Although analysis is in progress, preliminary themes indicate that staff members feel that with appropriate security measures, infrastructure and training, the non-face-to-face visits would be feasible and acceptable supplements to several aspects of care delivery.

Next steps will include a series of interviews with The Denver Hospice patients and family caregivers in which we will explore their perspectives on the acceptability of these care delivery models to hospice end-users. At the end of this study, they plan to have an adaptable, testable model of hospice care provision that incorporates resource-efficient, non-face-to-face visits and expect to have laid the foundation for additional studies to further evaluate and test these novel hospice visit models.

The Effects of Energy Imbalance on Food Intake Behaviors
Associate Professor Marc-Andre Cornier, MD at the University of Colorado Denver | Anschutz Medical Campus has initiated a "tasteful" research study to better understand the regulation of food intake. Obesity is a serious and growing public health problem in the United States and the world. The processes that underlie this increasing prevalence of obesity have not been clearly defined but likely involve faulty interactions between environmental factors with weight regulatory systems in individuals who are genetically susceptible. Those who are genetically predisposed to thinness in the current environment may be able to sense and respond to excess energy intake more rapidly and accurately than those predisposed to obesity.

We have observed that thin (obese-resistant) individuals quickly sense changes in energy balance with significant changes in subjective measures of hunger and satiety. This is in contrast to reduced-obese (obese prone) individuals who do not appear to appropriately sense short-term changes in energy intake. It therefore appears that there is a central regulation of ingestive behaviors which is altered by changes in energy balance, and that this regulation is more or less sensitive-dependent on the genetic predisposition to weight gain. What is it about our response to energy balance that leads to...
A great deal has been learned about the hypothalamic regulation of food intake and interactions with adiposity signals such as leptin. It is clear, however, that the intake of food is a much more complex process, especially in humans in which psychosocial factors play a critical role and in which the process of eating is likely to be controlled by reward and learned behaviors. Our long-term goal is to gain a better understanding of the central regulation of food intake. In addition, we are interested in understanding the acute adaptation to changes in energy balance (short-term over and under feeding) in individuals who appear to be genetically resistant or prone to weight gain and obesity. The central hypothesis of the proposed research is that the regulation of food intake is a complex process requiring the integration of multiple sensory inputs and learned behaviors in the context of background energy balance. Specifically, the motivational state of the individual as manipulated by changes in energy balance will result in the activation or inhibition of specific brain regions involved with the processing and integration of the incentive value and reward of food, and these changes neuronal activity will be associated with feeding behaviors. Understanding the behavioral and central neuronal responses to short periods of varying energy balance will provide clues to the mechanisms that may protect against or predispose to weight gain in the current environment. The study is examining the effects of over- and under-feeding on: 1) the brain’s response to food cues; 2) hunger, satiety, hedonics, and food craving; 3) appetite related hormones; and 3) the correlation between these measures in men and women screened to be either resistant or prone to weight gain and obesity. Currently they are still recruiting primarily men who are prone to weight gain.

ResearchMarch Announcement

The CCTSI is participating in ResearchMatch, a national web-based volunteer registry for potential research participants. Our goal is to enlist thousands of Coloradans as willing volunteers to be contacted about possible clinical research studies. ResearchMatch brings together researchers and willing volunteers in a virtual space who want to be a part of ethical scientific research. The CCTSI encourages all faculty, PPRs, trainees, staff and employees at the University of Colorado Denver | Anschutz Medical Campus and its affiliated hospitals to join this registry and volunteer to be contacted about future research studies.

We ask that you take the time to visit www.researchmatch.org and join as a ResearchMatch volunteer.

For more information please visit cctsi.ucdenver.edu/ResearchMatch, or contact Alexis Thurlow, ResearchMatch Liaison for the CCSTI at 970-310-1705.

Researchers will have the opportunity to use this exceptional resource for research participant recruitment in the near future once we have accrued a reasonable number of volunteers.

Bulletin News

Highlights from the First Cohort of Novel Clinical and Translational Methods Development Phase II Awardees

Novel methodological development projects were, by design, testing the limits of existing knowledge, technologies and methodological approaches. In the process, new discoveries were made about the behavior, not only of equipment, but of molecules. At the conclusion of their 12-month grant cycle of the first round of these awards, the novel methodological advancements emerging from two awardees had generated $897,723 in external funding. NCTMD awardees reported perceived growth in a number of translational research core competencies. They attributed this growth to the opportunities, created by CCTSI funding support, to form new collaborations that challenged them to work across disciplines.

Evaluation of Educational Opportunities

Surveys have been administered on an annual basis to the mentors and trainees/scholars of the four ETCD pre- and post-doctoral programs. Respondents continue to report high levels of satisfaction with the respective programs and the mentoring provided. Aggregated across programs, there were statistically significant increases in self-ratings on 32% of the 19 translational research core competencies assessed including the ability to design a study, prepare a grant application and perform advanced statistical analyses. Post-doctoral scholar surveys also assessed several factors related to career success such as social capital, persistence and work-life balance. The greatest increases occurred in the areas of collaborative networks and career satisfaction. Focus groups conducted with KL2 and Clinical Faculty Scholars Program participants also highlighted the development of collaborative peer networks as a key outcome.

Disciplinarity of Research Teams: Trend Analysis of CTRC Protocols

Two of the directives that the National Institutes of Health has outlined for Clinical Translational Science Award sites is to increase novel collaborations and the disciplinarity of research teams. To determine the degree to which these outcomes are being achieved, the evaluation team conducted an analysis of the composition of research teams associated with Clinical and Translational Research Center (CTRC) protocols approved June-December 2008 and for the same period in 2009.

While the average team size decreased slightly (from 4.14 to 3.88), the average number of academic disciplines represented on each CTRC protocol increased (from 1.16 to 2.0). Overall, there was a 20% increase in the percentage of protocols with multidisciplinary teams. Additionally, the number of project teams that included investigators from clinical and non-clinical departments nearly doubled (from 8 during the transition period in 2008 to 15 during the comparable period in 2009). This represents a 9% increase.
Medicinal Chemistry Core Facility at the University of Colorado Denver | Anschutz Medical Campus

The NEW Medicinal Chemistry Core (MCC), funded in part by the CCTSI Translational Technologies Network, at the University of Colorado Denver | Anschutz Medical Campus is housed within the Department of Pharmaceutical Sciences (DOPS) and is part of the School of Pharmacy (SOP). The Core offers a variety of services and collaboration to identify hits and optimize molecules for potential pharmaceutical use. The core is equipped with fundamental synthetic and analytical capabilities including: i) a 400 MHz NMR (Bruker, Avance III 400) and devoted to chemistry; ii) an Applied Biosystems Sciex 4000® (Applied Biosystems; Foster City, CA) equipped with a Shimadzu HPLC (Shimadzu Scientific Instruments, Inc.; Columbia, MD) with a Leap cool-stack auto-sampler (LEAP Technologies; Carrboro, NC); iii) a Shimadzu analytical and preparative HPLC system equipped with SPD-20A UV-VIS Detector, RID-10A,120V, Refractive Index Detector, and FRC-10A 120V Fraction Collector; and iv) a Shimadzu QP-2010 Plus GC/MS System with AOC-5000. In addition, they have a traditional Organic Chemistry laboratory with fundamental macro- and micro-scale glassware and standard equipment (rotary evaporator, vacuum distillation, column chromatography, etc.) essential to conduct chemical synthesis and purify target compounds.

Services include:

- Design and custom synthesis of bio-active molecules
- Assistance in the identification and optimization of lead compounds
- Structure-Activity Relationship (SAR) elucidation
- In vitro Metabolic stability screening (mouse, rat, dog, monkey, human)
- Metabolite identification
- In vitro Permeability assessment, protein binding, plasma stability
- In vitro drug-drug interaction (DDI) studies
- In vitro drug transporter studies
- Bio-Analytical Pharmacokinetic (BAPK) method development
- Determination of drug candidate and metabolite(s) in biological matrix (i.e. plasma, liver, brain, kidney, heart, fat and muscle)
- Formulation development
- Patent provisional and application writing

For more information about the CCTSI supported Medicinal Chemistry Core or to access the services please contact Michael Wempe at 303-724-8982 or Michael.Wempe@UCDenver.edu.

CTSA National Consortium Update

Southwest Mountain West CTSA Consortium Created

The Clinical and Translational Science Award sites of the Universities of Colorado, New Mexico and Utah are forming a new regional collaboration, the Southwest/Mountain West CTSA Consortium. Its goal is to accelerate the progress of clinical and translational research in the region through increased collaboration and sharing. The three university medical centers also share special interest and expertise in the health of underserved populations such as Native Americans and the special challenges posed by rural medicine. The regional consortium will collaborate with the Mountain West consortium of Institutional Development Awards (IDEA) centers to share core resources for joint projects, expertise for review of grant applications and educational tools. An example of such sharing will be the broadening of opportunities across all of the sites for summer research programs for undergraduates. More information will be released about this new Consortium as it is fully developed during 2011. We are very excited about this new opportunity to extend the reach and impact of the CCTSI and to build a bridge to these two neighboring academic centers that will benefit our faculty, staff and trainees and the citizens of all three states.

The principal investigators at the three institutions are: Richard Larson, New Mexico; Donald McClain, Utah; and Ronald J. Sokol, Colorado. For more information, contact Michael Briggs, New Mexico; Christine Chambreau, Utah; and Tim Lockie, Colorado.