

A MULTI-INSTITUTIONAL CONSORTIUM AT WEILL CORNELL MEDICAL COLLEGE WITH: Cornell University, Ithaca Cornell University Cooperative Extension, New York City / Hospital for Special Surgery / Hunter College School of Nursing Hunter Center for Study of Gene Structure and Function / Memorial Sloan-Kettering Cancer Center / NewYork-Presbyterian Hospital/Weill Cornell Medical Center / Weill Cornell Graduate School of Medical Sciences.

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CTSC website: www.med.cornell.edu/ctsc

Apply for a CTSC grant!

CTSC Seed Funding RFA Closed as of May 1

K30 RFA

Due Date: May 15 Classes begin: September

Announcements

CTSC now offers help with Clinical Trials. Read about it here To Contact Kaarel Laev, Clinical Trials Manager, Email: KTL2001@med.cornell.edu Call: 646-962-8156

Please join us in Congratulating the CTSC Award Winners!

Pilot, Novel, Community Awardees

Education Awardees (scroll down for links)

From the Director's Desk



to the inaugural issue of the CTSC eNews! In September 2007, the National Institutes of Health awarded 49 million dollars to Weill Cornell Medical College to establish the Clinical and Translational Science Center. Of the 39 Centers funded thus far by the NIH under the Clinical and Translational Science Award (CTSA), ours is a unique public private partnership; our CTSC partners are: Memorial Sloan-Kettering Cancer Center, Hospital for Special Surgery, Cornell University Cooperative Extension, New York City, Hunter College School of Nursing, Hunter College Center for the Study of Gene Structure and Function, and Weill Cornell-affliated hospitals. Our mission is to foster multidisciplinary collaborative research to yield new,

effective patient treatments, educate and mentor the translational research scientists of the future, and enhance health care to the underserved in our surrounding communities.

We look back on a year and a half of impressive accomplishments, and exciting new research endeavors, several of which are featured in this newsletter.

I'm delighted to announce that, to date, the CTSC has awarded \$1.9 million to Pilot Projects and Education mentoring awards. **Fifty seven CTSC seed funding awards** were granted in the first 18 months of our initiative to researchers from 20 Weill Cornell Medical College departments and to investigators from all CTSC partner institutions. We have more than 50 students currently participating in our Clinical & Translational Education Program (CTEP).

In January, the CTSC administrative offices moved into new facilities on East 61st Street, bringing administrative staff together in one location. Our state-of-the-art videoconferencing facilities will be used for education, to host outreach events and to promote collaboration among CTSC partner institutions.

We look forward to continuing to foster translational research while serving the needs of our research community.

Julianne Imperato-McGinley, M.D.

Associate Dean, Translational Research and Education

Program Director, Clinical and Translational Science Center

Abby Rockefeller Mauzé Distinguished Professor of Endocrinology in Medicine

Chief, Division of Endocrinology

CTSC-funded research leads to Prostate Cancer Foundation Creativity Award

A project to study microfluidic devices for circulating tumor cell capture, initially funded last year by a CTSC Novel Technologies Award and a NYSTAR award, recently won a Prostate Cancer Foundation Creativity Award of \$100,000 for "PSMA-based Microfluidics-Capture of Circulating Prostate Cancer Cells: Study of Microtubule-driven Androgen Receptor Signaling,

Gene Fusion, and Gene Expression Profiles with Correlation to Clinical Response to Taxane Therapy."

The award-winning research team includes Dr. David Nanus, PI, Dr. Evi Giannakakou, both of the Division of Hematology/Oncology, WCMC, Dr. Brian Kirby, Department of Mechanicall and Aerospace Engineering, Cornell University,

Research Collaboration Breakthrough

High Resolution Focused Laser Technology Reveals More than Meets the Eye

Excerpt adapted from article by Faroog Ahmed and Robert Dottin

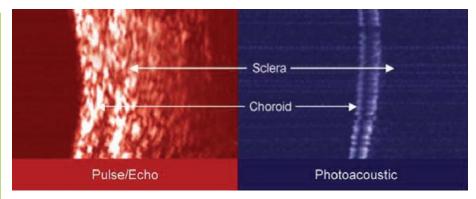
researchers who collaborated on a CTSC awarded Pilot grant have reported a breakthrough in achieving higher resolution ultrasound images for the clinical examination of the eye and superficial tissues. A report published in Applied Physics Letters

"Significant breakthroughs like this justify the investments of the NCRR/NIH programs and the commitments of our institutions to translational research"

Julianne Imperato-McGinley details the almost ten-fold increase in the image resolution of these tissues with this innovative technology, and describes the potential increase in improved outcomes with early detection and diagnosis of diseases of the eye.

This novel technology, designed by Dr. Ronald

Silverman of the Weill Cornell Medical College (WCMC) Ophthalmology



The figure above shows for comparison the same tissue using a pulse-echo image, the current technology and a focused laser photoacoustic image.

Department, and Hunter Gene Center researcher Dr. Ying-Chih Chen of the Physics Department, combines – in a single device – improvements in both resolution and a long working distance (3 cm) between the source and the target. The technique is particularly suited for imaging the retina and choroid, which are optically accessible through the transparent intervening ocular media – cornea, aqueous humor, pupil, lens, and vitreous humor. "With this technology we should be able to detect tumors at a much earlier stage, thereby improving outcomes," said Silverman.

Silverman and Chen have expanded their collaboration to include Dr. Hiroshi Matsui in Hunter's Chemistry Department. Their work has implications for gene transfection and therapeutic purposes.

The current study highlights the efficacy of collaboration across departments, disciplines, and institutions "Significant breakthroughs like this justify the investments in the NCRR/NIH programs and the commitment of our institutions to translational research" said Imperato-McGinley.

Citation:

High-resolution Photoacoustic Imaging with Focused Laser And Ultrasonic Beams. Appl. Phys. Lett. 94, 033902 (2009); DOI:10.1063/1.3073749 Fanting Kong, Y. C. Chen, Harriet O. Lloyd, Ronald H. Silverman, Hyung Ham Kim, Jonathan M. Cannata, and K. Kirk Shung

CTSA Consortium Offers Advantage to Multicenter Clinical Trial

Lead investigators on a recently approved multicenter clinical trial have recognized that the CTSA consortium of medical research institutions provides an ideal network of study sites, with the potential for enhanced data sharing capability. A multicenter clinical trial entitled, A Randomized Phase 2 Trial of 177Lu Radiolabeled Monoclonal Antibody HuJ591

(177Lu-J591) and ketoconazole in Patients with High-Risk Castrate Biochemically Relapsed Prostate Cancer After Local Therapy, whose aim is to prevent or delay metastases, has just been approved for CTSC utilization; initial study sites are preferentially CTSA members. Drs. Scott Tagawa and David Nanus lead a multidisciplinary Weill Cornell research

team that includes investigators from the Division of Hematology and Oncology, and Departments of Urology, Radiology and Public Health. The project is in negotiation with the DOD for pending grant support. This is one of five current or planned clinical trials using the antibody, developed by Dr. Neil Bander of Weill Cornell.

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Recent CTSC Events

CTSC Speed-Networking Event Helps Scientists Find Collaborators



Monica N. Fornier, breast oncologist at MSKCC, and basic scientist Paul Feinstein, biologist, Hunter College meet at the Translational Bazaar.

The CTSC hosted a **Translational Research Bazaar** featuring speed networking to facilitate introductions, spark new ideas, help researchers meet new partners from other fields or disciplines, and promote thinking in new research directions.

More than 80 basic and clinical scientists from all of the CTSC partners and several CTSC-affiliated community hospitals registered for the event. Meeting each other across a long table, basic and clinical scientists had about three minutes with each partner to exchange cards, share information and provide a brief summary of their work. The sound of a bell indicated a move for clinical researchers to meet another basic researcher. Following thirty-

five rapid-fire rounds, participants conversed and explored possibilities with their new potential research collaborators at a networking reception.

Dr. Hazel Szeto, Professor of Pharmacology at Weill Cornell, found at least three new collaborators at the event, including Yuhang Ren, Ph.D., Hunter College Assistant Professor of Physics and Astronomy. Dr. Susan Vannucci, Research Professor of Neuroscience in Pediatrics/Newborn Medicine at WCMC, met collaborator Carl H. Le, PhD, Assistant Attending Physicist at MSKCC. Dr. Jeffrey Perlman, Professor of Pediatrics and Chief, Division of Newborn Medicine joined them in discussions to develop a new research proposal.

As a direct result of the speed networking event, both research "teams", along with five others, responded to a CTSC RFA for research funding several weeks later. In March 2009, both the Szeto and Vannucci teams were awarded a CTSC Novel Technology award. "We definitely did meet at the Bazaar speed networking event and this project was started then; we did not know each other before," says Dr. Vannucci. "I am excited about our proposed work together. We're looking at the prospect of putting WCMC 'on the map' in neonatal neurology."



Speed Networking for Translational Scientists: Meena Katdare, PhD, Associate Professor of Cell and Developmental Biology, Department of Surgery, WCMC, meets Dr. Ben Rajegowda, Chief of Neonatology, Lincoln Medical & Mental Health Center.

IP and Pasta

Sixty-five researchers from CTSC partner institutions were inspired by the idea of mixing Intellectual Property (IP) and Pasta to join the Cornell Center for Technology Enterprise & Commercialization for a relaxed and informative evening. Presentations and discussion were followed by networking over a Pasta dinner at the Weill Cornell Griffis Faculty Club.

The speakers included
Alan Paau, Cornell University's
Vice Provost for Technology
Transfer & Economic Development,
and Deborah Somerville and
Jerry Messina, bioscience patent
attorneys from the firm of Kenyon
and Kenyon, the event sponsor.

The event provided a low key introduction to IP concepts of importance to biomedical researchers, with particular emphasis on IP in cross-institutional research projects.

Protect your Research

Basic IP protection in the event of a research breakthrough.

Click to open CCTEC's
"Guidelines for Lab Notebooks."

CTSC Events continued



SPEAKERS AT THE TRANSLATIONAL CANCER RESEARCH SYMPOSIUM

Olufunmilayo Olopade

Nature, Nurture, and Breast Cancer

Otis Brawley

A Historical Perspective of Breast Cancer Health Statistics

Franco Cavalli

The Worldwide Fight Against Cancer: Problems and Hopes

Larry Norton

Breast Cancer Mysteries

Robert Weinberg

Invasion, Metastasis, and Stem Cells

Michael F. Clarke

Consequences of Utilization of Stem Cell Pathways by Cancer Cells

Jill Bargonetti

Pharmacogenomics for Cancers with Compromised p53

Neil Bander

Targeted Treatment of Metastatic Prostate Cancer

John Leonard

Summary of the Day

Robert Dottin

Closing Remark

Vision: Eliminating Health Disparities

Translational Cancer Research Symposium

CTSC partnered with The Hunter College Center for Study of Gene Structure and Function to convene the "Translational Cancer Research: Bench, Bedside and Community" Symposium. This was the 22nd Annual Symposium of the Hunter College Gene Center, and a first time collaboration with the CTSC and was spearheaded by Gene Center Director Robert Dottin, PhD. The event attracted more than 250 attendees, including researchers, physicians, students, and public health agency representatives. Weill Cornell Medical College offered CME credits.

Clifford Hudis, Chief, Breast Cancer Medicine Service and Ken Offit, Chief, Clinical Genetics Service, both from Memorial Sloan-Kettering Cancer Center introduced the speakers and moderated the discussion.

The morning session focused on disparities across socioeconomic status, gender, ethnicity, and age in cancer health care in the United States and around the world. The keynote speaker was Olufunmilayo Olopade of the University of Chicago, who discussed the roles of BRCA1 and BRCA2 mutations in breast cancer in different populations, including white and black women in the United States and women from Nigeria - a population genetically linked to the U.S. through the historical slave trade. Olopade is examining the differences in these populations, aiming to reduce disparities and promote research on new therapies to more effectively treat the cancer types found more often in African American women.

Afternoon presentations addressed molecular targeted pathways for better cancer treatments, with the keynote address by Robert Weinberg of the Whitehead Institute and MIT. (Please Note: The full line-up of speakers is provided adjacent to this article, with a direct link to each speaker's notes and a video or audio of their presentation.)

John Leonard, Chief of Lymphoma/ Myeloma Service, Weill Cornell Medical College, delivered a comprehensive summary of the day's presentations. Robert Dottin offered closing remarks.

The Symposium Planning Committee included clinical and basic scientists Ken Offit, Cliff Hudis, and graduate student Eric Alonzo (MSKCC); John Leonard and Neil Bander, Bernard & Joseph Chaus Professor of Urologic Oncology (WCMC/NYPH); and David Mootoo, Professor of Chemistry, Hualin Zhong, Assistant Professor of Biology, Robert Dottin, Professor of Biological Sciences and Jill Bargonetti, Professor of Biological Sciences and Chair, Symposium Planning Committee (Hunter).

Videos and slides from each of the presentations with accompanying slides are available through the New York Academy of Sciences, and can be accessed from the CTSC website:

http://www.med.cornell.edu/ctsc.

Click on "2009 Cancer Symposium".

Community Engagement Workshop: Working WITH the Community

A key program of the CTSC focuses on reducing the barriers to engaging community participants in clinical and translational research. In September 2008, the CTSC hosted a **Regional Community Engagement** event, designed to directly involve the community in this program.

There were more than 100 people in attendance representing medical institutions, community and faith-based organizations, city and state departments of health, and medical researchers

from the Northeast region.

Sheila Gutter, Ph.D., the director of the Community Engagement Research Office (CERO) of the CTSC, organized the workshop. Considerable discussion involved educating the public at the community level on the intricacies of biomedical research. It is clear that recruiting for clinical trials becomes easier when community members understand the issues, and when they are fully involved with researchers and

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Community Workshop continued

invested in these projects.

Dr. Guthrie Birkhead, deputy commissioner of the New York State Department of Health, and the workshop's keynote speaker, discussed the

"New York
State's public
health office
is seeking to
bring academia
and public
health
together,"

Dr. Birkhead

methods his office uses to interface with both the community and academic medical centers. "New York State's public health office is seeking to bring academia and public health together,"

Dr. Birkhead said.

The CTSC's program director is working with Dr. Don

Tobias, director of the Cornell University Cooperative Extension, New York City and Dr. Robert Dottin, Director of the Hunter College Center for Gene Structure and Function, to apply for funding to launch an interactive video education program with community faith-based groups.

New Dean for our Partner, Hunter-Bellevue School of Nursing



"The CTSC partnership between Hunter College School of Nursing and Weill Cornell Medical College is one of the exciting opportunities

I found when I considered becoming Dean. We look forward to a long and fruitful collaboration."

Dean Kristine M. Gebbie, DrPH, RN

Joan Grabe Dean (acting)
School of Nursing Hunter College, CUNY

Funding Innovation and Technology: SBIR/STTR and Angel Funding Event

A primary goal of the CTSC is to reduce the time it takes for laboratory discoveries to translate into treatments for patients. Therefore, education for researchers in technology transfer and intellectual property is a vital part of the CTSC mission. The CTSC joined with the Cornell Center for Technology Enterprise & Commercialization (CCTEC) to offer two educational/networking events, this one and the IP and Pasta event.

On February 27th, eighty researchers gathered at Weill Cornell Medical College to learn about federally funded Small Business Innovation Grants (SBIR) and Small Business Technology Transfer (STTR) grants.

NIH SBIR/STTR Program Officer Rosemarie Filart presented a comprehensive overview of the two programs, and emphasized the differences between them. Franklin Madison, Technology Program Director, Industrial and Technology Assistance Corporation (ITAC), spoke

about the SBIR and other New York State grants as an overlooked source of early stage funding. Lenzie Harcum, Vice President, Biosciences, New York Economic Development Corporation,



Brian Kelly, Director of CCTEC, and a member of the CTSC, moderated the discussion.

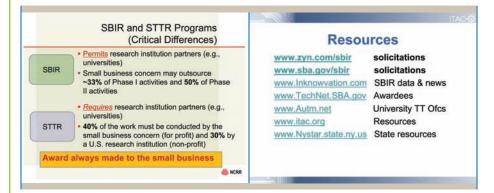
provided information about the New York City biosciences cluster and the marketing of NYC as a biosciences destination.

David S. Rose, Chairman of the New York Angels, generated considerable interest and audience participation with his presentation on "How to Pitch to an Angel Investor".

Robert Gilmour, PhD of Cornell University spoke about his collaboration with Gene Network Sciences in multiple SBIR awards over a number of years, initiated when a former graduate student went to work for the company.

Dr. Neil Bander and Dr. Nicholas Schiff of Weill Cornell Medical College described their very different paths to funding and the commercialization of their innovative technologies. Both scientists credited the CTSC's inpatient and outpatient units and services (CTRU) for playing a critical role in moving their clinical research forward, and resulting in interest from investors and pharmaceutical companies.

For speaker slides and an array of SBIR and other funding resources, **click here.**



left: a slide from Rosemarie Filart's program overview and right: a slide from Franklin Madison's presentation about assistance from the Industry & Technology Assistance Corporation (ITAC)

CTSC Key Function News

Our Education Programs Continue to Grow

The CTSC Clinical and Translational Education Program (CTEP) is designed to train investigators to become independent clinical/translational researchers.

We offer a one-year core curriculum that leads to an Advanced Certificate in Clinical Investigation. Students who continue with the program for a second year and successfully complete electives and a mentored clinical research project receive a Master's Degree in Clinical Investigation.

Currently there are more than 50 students enrolled in both training arms. Our joint degree program (MD/PhD) has been initiated and three graduate students from the Weill Cornell Graduate School of Medical Sciences are enrolled. Our first WCMC medical student has been enrolled in our MD/MS program.

CTEP also offers modular training via a Clinical Research Methodology Curriculum (CRMC) implemented by our Memorial Sloan Kettering Cancer Center extension. Program topics are vast and varied and offer the flexibility for faculty and staff from all CTSC partner institutions to participate. This year's seminars included topics on drug and medical device development, conducting clinical investigations in the modern era, and clinical research in outcomes analysis. Currently, there are 64 students enrolled and this past year 38 students successfully completed the program.

Carl Imhauser, who received a PhD in Mechanical Engineering, is a Post-doctoral Fellow in Biomechanics and Engineering at the Hospital for Special Surgery, and a post-doctoral (KL2) awardee. He credits the CTSC

Master's Degree in Clinical Investigation program with rounding out his skills as a scientist. "I had no clinical background or training. I'm an engineer," he says. The community-based research course raised his awareness of the larger translational context for the work that he does. Now he thinks beyond "how joints move and function" to consider populations, demographics and diversity, and their implications in his work.

In addition, Carl speaks enthusiastically about the many cross-institutional networking opportunities that are integral to the Master's Program, which have given him "access to a tremendous array of resources within Upper East Side biomedical institutions" that will add new dimensions to his research and his career.

Translational Research Support Team (TREST)

By Nelena Jackson, Research Aide

A unique service of CTRU is the Translational Research Support Team. TREST goes beyond the four walls of our Clinical and Translational Resource Unit offices and labs. The team, composed of research aides, a facilitator, research subject advocates, nurses, technicians and pharmacists, work to assist researchers. The aides, who coordinate research studies, are mobile, flexible and dedicated. Projects include those in a community setting, where most visits take place miles away from the hospital to studies dealing with outpatients on the CTSC CTRU unit.

The research aides' daily tasks include assisting with: study initiation and/or the research activities of studies already in progress; amending or submitting protocol revisions; coordinating staff in-service; preparing the regulatory binder; pre-screening and scheduling research subjects; transporting laboratory samples and entering data. TREST research aides are also trained to take vital signs and perform phlebotomy.

Lisa Mandl, MD, MPH, a rheumatologist with academic appointments at WCMC in the

Departments of Medicine and Public Health, and an attending physician at the Hospital for Special Surgery, has sponsored three Fellows in recent years. Dr. Mandl cites the CTSC's "ready-made infrastructure and beautiful facilities" as instrumental in facilitating their research.

"If we want young physicians to perform clinical research we have to provide them with the infrastructure to help them at the very early stages in their research, especially given the current dearth of funding," says Dr. Mandl.

Through CTRU, researchers receive help with blood draws, statistical analysis, and database development. Fellow Dr. Ora Singer, in what Dr. Mandl describes as "a truly translational and cross-institutional project" pairing researchers from HSS and WCMC, is studying breast cancer patients on aromatase inhibitors in a search for the cause of the severe hand pain experienced by some of those patients. Dr. Mandl emphasizes the critical role played by the CTRU in handling logistics that include making arrangements with two off-site MRI

Clinical and Translational Resource Unit (CTRU)

The Clinical and Translational Resource
Unit (CTRU) facilities include an Informatics
Core, Metabolic Kitchen, Molecular Core
and Core Laboratories. It also includes
inpatient and outpatient units for adults
and children. The research nurses have
many years of expertise in the conduct of
clinical research, which always requires
special attention to detail, and often
includes round the clock blood sampling
and patient monitoring. They also continue
to keep abreast of emerging research
technologies.

centers, and working with the IRB's of both institutions. "We couldn't have done it at all without the CTSC."

For more information, contact Ms. Lily Suh: hks2001@med.cornell.edu



Innovation Leads to Publication

Creativity Award continued from page 1

and Drs. Mark Rubin, Neil Bander and Madhu Mazumdar of the WCMC Departments of Pathology, Urology, and Public Health, respectively.

It is one of "ten projects from a field of more than 300 applications, representing 105 institutions in 11 countries," according to Howard Soule, PhD, executive vice president and chief science officer for the Prostate Cancer Foundation. It has "solid potential to deliver breakthrough discoveries," he added.

Microfluidic circulating tumor cell capture from blood has the potential to provide clinical benefit with minimal inconvenience and discomfort to patients. It can be used in lieu of biopsies and improve patient outcomes. Microfluidic devices are ideally suited for these processes, owing to the flexibility of geometric design, wealth of chemical manipulation techniques, and assay compatibility of current systems.

CTSC Funded Research Projects lead to Publication

Michelle Bradbury, MD, PhD, Department of Radiology, Memorial Sloan-Kettering Cancer Center (PI, CTSC Pilot Award) January 2009, Nano Letters

Fluorescent Silica Nanoparticles with Efficient Urinary Excretion for Nanomedicine

The following investigators contributed to this collaborative work, which was supported by grants from the WCMC CTSC and the Cornell Nanobiotechnology Center: Andrew A. Burns (lead author), Erik Herz and Ulrich Wiesner of Cornell University; Jelena Vider, Oula Penate-Medina, and Steven M. Larson of MSKCC; and Hooisweng Ow and Martin Baumgart of Hybrid Silica Technologies.

Andrew Dannenberg, MD, director of the Weill Cornell Cancer Center

April 2009, Cancer Prevention Research

Levels of Prostaglandin E Metabolite and Leukotriene E4 Are Increased in the Urine of Smokers. Evidence that Celecoxib Shunts Arachidonic Acid into the 5-Lipoxygenase Pathway

A research collaboration led by Weill Cornell Medical College and Memorial Sloan-Kettering Cancer Center was funded by Weill Cornell's CTSC, the Flight Attendant Medical Research Institute, Pfizer Inc., and an MSKCC Prevention Control and Population Research Program Pilot Project Award.

Study co-authors: Drs. Xi Kathy Zhou, Kotha Subbaramaiah and Aradhana Ghosh of WCMC; Dr. Jay O. Boyle and Ms. Geera S. Butala of MSKCC; Dr. Robert A. Newman of the University of Texas M.D. Anderson Cancer Center; and Drs. Jason D. Morrow and Ginger L. Milne of Vanderbilt University School of Medicine.

The Weill Cornell Medical College CTSC is one of 39 medical research institutions working together as a national consortium to improve the way biomedical research is conducted across the country. The consortium, funded through the Clinical and Translational Science Awards (CTSA), shares a common vision to reduce the time it takes for laboratory discoveries to become treatments for patients, and to engage communities in clinical research efforts. It is also fulfilling the critical need to train the next generation of clinical researchers. The CTSA initiative is led by the National Center for Research Resources at the National Institutes of Health.

The CTSC is Supported by the NIH NCRR CTSA UL1-RR024996.
The Hunter College Gene Center and Annual Symposium receive support from the NIH NCRR RCMI Award G12-RR-003037.

Upcoming Events

The next speakers for the Clinical & Translational Science Biomedical Informatics lecture series in June and August will be from MSKCC. They are **Dr. Ethan Basch** (Epidemiology/ Biostatistics) and **Dr. Paul Fearn** (Informatics Expert/ Dept of Urology/Surgery).

For more information, or to suggest future topics or speakers, please contact Don Otondi: D002004@med.cornell.edu

Have an announcement you'd like to see in the next issue or on the CTSC website? Contact the CTSC eNews: **LMH2005@med.cornell.edu**



CTSC e-News Is published quartery by the

Clinical and Translational Science Center

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