

Hsieh gives \$50 million to create cancer research institute

At the Oct. 15 inaugural ceremony for USC President C. L. Max Nikias, USC trustee and alumnus Ming Hsieh took the podium immediately after the new President to announce a substantial gift.

“On this day of celebration,” Hsieh said, “I announce my support of USC and the leadership of President Nikias with a gift of \$50 million for the inception of an interdisciplinary research institute that will bring together the best engineers, scientists and physicians in the battle against cancer.”

The new gift will establish the USC Ming Hsieh Institute for Research on Engineering-Medicine for Cancer. “This institute will accelerate the pace of getting the new medicines from the lab to the cancer patients,” Hsieh continued. “It will bridge the disciplines and bridge this campus and the USC Health Sciences Campus.”

President Nikias said, “This kind of creative collaboration is our best hope for dealing with this devastating disease. On a personal level, I am deeply moved that Ming



USC trustee and alumnus Ming Hsieh (right) delivers the news of his \$50 million gift to the applause of USC President C. L. Max Nikias and the crowd gathered for the Oct. 15 inauguration of Nikias.

Jon Nalick

‘This institute will accelerate the pace of getting the new medicines from the lab to the cancer patients. It will bridge the disciplines and bridge this campus and the USC Health Sciences Campus.’

—USC trustee and alumnus Ming Hsieh

Hsieh chose to make this visionary gift commitment on the day of my inauguration.”

Keck School of Medicine of USC Dean Carmen A. Puliafito noted that the donation will help Keck and other USC researchers in

their quest to translate cancer discoveries into effective therapies for patients.

“The fight against cancer has gained a powerful ally in Ming Hsieh,” said Puliafito. “This gift illustrates the critical synergy of health care and

technology that has the potential to dramatically change the lives of cancer patients. We are grateful for his visionary gift.”

The gift was Hsieh’s second multi-million dollar donation to USC. The China-born

See **GIFT**, page 2



Tania Chatfira

THINKING PINK—Employees of USC University Hospital and USC Norris Cancer Hospital put on their pinkest attire on Oct. 28, in honor of Breast Cancer Awareness Month. Administrators dubbed the day “Pink Day,” and encouraged employees to wear pink to work. Above, Elizabeth Tenorio, an admitting representative at USC University Hospital, answers the phone wearing a specially-designed T-shirt benefitting the USC Norris Comprehensive Cancer Center and Hospital. Right, USC University Hospital Nurses Evelyn Antonio (left) and Emma Meza, from 9-East, sport pink scrubs in honor of breast cancer awareness.



Tania Chatfira

Massry Prize awardees elucidate protein discoveries

By Katie Neith

Leaders in the field of membrane fusion, 2010 Massry Prize winners James E. Rothman and Randy Schekman delivered their laureate lectures in Mayer Auditorium on Oct. 21.

Together, Rothman and Schekman are credited with the discovery of cellular membrane trafficking, which orchestrates the budding and fusion of membrane vesicles—bubble-like structures that store, transport or digest cellular products and waste.

Rothman, the Fergus F. Wallace Professor of Biomedical Sciences and chairman of the Department of Cell Biology at Yale University Medical School gave a history of his work, including his breakthrough discovery of SNARE proteins, complexes of proteins that mediate membrane fusion and provide specificity to it. Defects in this process lead to a wide variety of conditions, including diabetes and infectious diseases such as botulism.



Jon Nalick

James E. Rothman

“I think as we get into the genome-wide association studies of disease—which the clinical research is deeply steeped in now—and as we deeply sequence these, we’re going to find that in order to interpret and define pharmacological targets, increasingly we’re going to be relying—for the very common diseases—on the so-called ‘housekeeping proteins’ of this kind that are likely to be important,” said Rothman.

Schekman is an investigator of the Howard Hughes Medical Institute and professor of cell and developmental biology in the See **MASSRY**, page 3

USC Norris awarded \$1.6 million to test prostate cancer drug

The National Institutes of Health have awarded a USC Norris Comprehensive Cancer Center research team a three-year, \$1.6 million grant for a clinical trial of a new drug to treat advanced prostate cancer. The drug holds promise for targeting only the diseased cells and avoiding side effects.

As the primary investigator, Jacek Pinski, associate professor of medicine at the Keck School of Medicine, will conduct a trial of the new anti-cancer drug, AEZS-108 (AN-152). Pinski will lead a team that uses new methods for collecting and analyzing data about the drug's effectiveness.

AEZS-108 couples a peptide, LH-RH, with the chemotherapeutic agent doxorubicin to directly target cells that express LH-RH receptors—specifically, prostate cancer cells, Pinski said.

"Because the drug is expected to be delivered specifically to the cancer cells, we hope to avoid damaging healthy tissue and side effects," he said.

Prostate cancer is primarily a disease of older men, who often have other medical conditions, so the toxicity of medication is a great concern during cancer treatments.

Because prostate cancer grows when exposed to testosterone and related hormones, the primary treatment for patients with advanced prostate cancer is therapy to stop the production of these hormones. This treatment is usually effective for about 24 months, and then typically the cancer evolves to a state of "castration resistance."

For men with castration-resistant prostate cancer, the chemotherapeutic agent docetaxel has been shown in two large clinical trials to prolong survival.

Those who do not respond to docetaxel therapy, whose response falters or who cannot tolerate the drug, are left with very limited options.

Several studies have shown a generally poor response to second-line chemotherapy in castration-resistant prostate cancer, prompting a search for more effective options.

In previous research, Pinski

found that cancerous cells in human prostate tissue contain a unique protein on their surface called luteinizing hormone-releasing hormone (LH-RH) receptor.

Andrew Schally, a Nobel-Prize laureate who will collaborate on Pinski's upcoming study, developed AN-152, a compound that specifically damages cells containing this protein, including prostate cancer cells.

The commercial name of AN-152 is AEZS-108, produced by Aeterna Zentaris Inc. The drug has been studied in gynecologic cancers in women and has been shown to be effective and well tolerated. Preclinical studies of animal models with prostate cancer also have demonstrated positive results with the drug.

The research also will break new ground with its correlative studies.

In one, researchers will examine the correlation between the expression of LH-RH receptors on circulating tumor cells (CTCs) in the blood and the clinical outcomes of patients taking the new drug—how long until they respond to treatment, whether the drug prolongs survival and the degree of toxicity. Another study will take advantage of the autofluorescent characteristic of AEZS-108 to see if the drug enters into the CTCs of patients' blood samples.

"Because the drug is expected to be delivered specifically to the cancer cells, we hope to avoid damaging healthy tissue and side effects."

—Jacek Pinski, associate professor of medicine at the Keck School of Medicine



CAMPUS TAKES BREAK FOR FAKE SHAKE—The Health Sciences Campus participated in the annual Great California ShakeOut on Oct. 21 at 10:21 a.m., which simulated a major earthquake to help bolster preparedness statewide. Left, Carol Davis-Dao, research associate in the Keck School of Medicine's Department of Preventive Medicine, ducks and covers beneath her desk. Right, USC School of Pharmacy AV Tech Chris Jones supervises the evacuation of a lecture hall as part of the drill.

GIFT: Ming Hsieh hailed as 'powerful ally' in fight against cancer

Continued from page 1

founder of Pasadena-based Cogent Inc. had previously donated \$35 million to name the electrical engineering department in the Viterbi School of Engineering, a gift that Viterbi School Dean Yannis C. Yortsos called "a landmark in the history of the School."

"The new Institute," Yortsos continued, "is another

testament to his vision. Working with our colleagues at the Keck School and elsewhere at USC, gifted engineering faculty and students working on nanotechnology will utilize their remarkable talent and expertise to attack cancer and hopefully lead to effective cures. With this transformative gift we are positioned to become world leaders in the field."

The endowment will be used to support research and development, both at the bench and at clinical scales, in the burgeoning field of nanomedicine for cancer. A fundamental component of research will be on nanoscale delivery platforms. Encapsulating nanoparticles and other promising applications of nanotechnology will be

pursued. New advances will also be sought in biomedical imaging that will help determine the delivery and targeting efficiencies of these treatments. In parallel, clinical research will be conducted to assess the efficacy of the resulting drug delivery with in vivo studies.

The institute will bridge research from engineering and medicine. The recently launched program HTE@USC (Health, Technology and Engineering at USC) between the two schools has already laid a strong foundation for such collaborations and will be leveraged to augment educational and training opportunities for medical and doctoral students who participate in the Institute's research.

According to the American Cancer Society, approximately 1.5 million Americans will be diagnosed with cancer in 2010. About 570,000 people are expected to die—more than 1,500 people each day. Cancer will account for nearly one of every four deaths in the U.S. Yet statistics cannot truly grasp

cancer's devastating human cost, as the disease puts a burden on families and loved ones and has an emotional impact that lasts for years.

"Ming Hsieh is an exemplary trustee and alumnus," said Edward P. Roski Jr., chairman of the USC Board of Trustees. "His generous gifts continue to advance the university and improve the lives of people in our community, nation and world."

Ming Hsieh was born and raised in northern China and worked his way to USC, where he earned a Bachelor of Science degree in electrical engineering in 1983 and a Master of Science degree in electrical engineering in 1984. In 1987, he founded AMAX Technology and in 1990 founded the Pasadena-based Cogent Inc., which revolutionized automated fingerprint identification.

His 2006 gift to the Viterbi School to name its Ming Hsieh Department of Electrical Engineering was the largest ever to name an engineering department.

The Weekly

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USC aims to create doctors, engineers who work together to improve health care

Teaching engineers to think like doctors and doctors to think like engineers is the force behind a new USC program that aims to create a new generation of innovators who will lead the way to better health care.

The HTE@USC educational program, organized by the Keck School of Medicine of USC and the USC Viterbi School of Engineering, will enable cross-disciplinary education for engineering and medical students. The goal is to remove obstacles to collaboration between physicians and engineers by helping them understand each other.

Health, technology and engineering—the “HTE”

in “HTE@USC”—are increasingly linked together as technological advances provide more opportunities to address the health care needs of all patients, including those from traditionally underserved populations.

“USC has long emphasized interdisciplinary work, including the combination between medical, biological and engineering applications,” said Viterbi School Dean Yannis C. Yortsos. “We are delighted to be working with our colleagues at the Keck School to take this next step.”

HTE@USC is designed to empower medical doctors who identify health care needs in their daily practice to

understand the engineering concepts needed to develop an idea—as well as enable engineers to design medical innovations to meet the needs of doctors, patients or both.

“Health care and technology are changing rapidly,” said Keck School Dean Carmen A. Puliafito. “Together with the Viterbi School, we will give our future physicians and engineers the tools they need not only to stay ahead of that change, but to be active instruments for the betterment of health care.”

Much of the important education in the program will take place outside of classrooms, with all students assigned to work in small

groups on projects that could include device development, diagnostic techniques and informatics, said Terry Sanger, who has appointments at both the Keck and Viterbi schools and will direct the HTE@USC educational effort.

“Engineering and medicine have different approaches,” said Sanger. “We are explicitly creating a cross-disciplinary program that unites the existing medical school curriculum with the existing engineering curriculum. This not only teaches the individual students how to live in both worlds, but more importantly it teaches them how to collaborate between worlds and gives them practice

using these skills to solve real problems.”

USC is an ideal place to put these ideas into practice, said George Tolomiczenko, administrative director of HTE@USC and assistant professor in the department of neurology at the Keck School.

“USC is very serious about meshing medical, biology and engineering perspectives and approaches,” Tolomiczenko said. “I think USC has been exceptional in its efforts to create new transdisciplinary programs. This is a top university priority, and there is strong support for the HTE@USC program.”

Formerly known by the working title “HST@USC,” the new program has been officially renamed HTE@USC to reflect its roots in both Medicine and Engineering disciplines.

Program faculty will begin reviewing applications immediately from entering medical students and first-year graduate students interested in admission to the first cohort that will start in the fall of 2011.

For more information on HTE@USC, e-mail HTE@USC.edu or visit HTE.usc.edu.

MASSRY: Lectures focus on key discoveries that impacted genetic research

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Department of Molecular and Cell Biology at the University of California at Berkeley.

His work laid the foundation for recombinant expression of important secretory and membrane proteins such as insulin, used for treatment of diabetes, and hepatitis surface antigen in yeast, used for immunization to protect against infection by hepatitis B virus.

“These genes in yeast are essential,” said Schekman. “We didn’t think that mutations in these genes would turn up in any genetic diseases, but we weren’t

counting on the fact that these genes in mammals are duplicated, giving an opportunity for some genetic mischief.”

Recently, Schekman’s lab has probed the molecular mechanism of defects in secretion that lead to human diseases of development such as spina bifida.

The Massry Prize, which includes a substantial monetary award, recognizes outstanding contributions to



Randy Schekman

the biomedical sciences and advancement of health.

The Meira and Shaul G. Massry Foundation established the Massry Prize in 1996.

Shaul Massry, professor emeritus of medicine at USC, founded the nonprofit organization. To date, nine previous recipients of the Massry Prize have gone on to win the Nobel Prize.

View the archived webcast at: <http://tinyurl.com/2g588ux>

Benefits Eligible Faculty and Staff

University Park Campus

Von KleinSmid Center Plaza
Wednesday, November 3
9:30 a.m. to 2:00 p.m.

Health Sciences Campus

HSC Quad
Thursday, November 4
10:00 a.m. to 3:00 p.m.

To Do List:

- Preview your *Benefits News 2011* online at http://www.usc.edu/dept/Benefits/print_your_own.html
- Look for your *Benefits News 2011* in the campus mail
- Review your benefit needs and make adjustments (deadline **November 12, 2010**) using eTrac (www.usc.edu/etrac)

Need a refresher course on available benefits? Check out our benefits orientation video series at www.usc.edu/dept/Benefits/orientation.html.

Open Enrollment: November 1 to November 12

Open Enrollment is the only time you may:

- Enroll for 2011 flexible spending accounts
- Add or delete the Hyatt Legal plan
- Change from one medical or dental plan to another
- Add or delete dependents to your medical or dental plans (**Your dependents can now be covered up to age 26!**)
- Change your Accidental Death and Dismemberment insurance coverage

It’s also a great time to review all your benefits, get answers to your questions, and make changes to other benefit programs. Think about contributing to the Supplemental Retirement Plan, or setting up flexible spending accounts for dependent or health care to save on taxes next year.

Changes effective January 1, 2011

The Weekly NEWSMAKERS

An Oct. 21 *R & D Magazine* article quoted Keck School of Medicine Dean **Carmen A. Puliafito** about a \$50 million gift from USC trustee **Ming Hsieh** to establish the USC Ming Hsieh Institute for Research on Engineering Medicine for Cancer.

An Oct. 20 *Los Angeles Times* article quoted professor of clinical surgery and chief of the division of surgical oncology at USC Norris **Stephen Sener** about research he led which found that cancers were not as dangerous and that overall survival rates were higher in hormone users compared with women who developed the disease but had never taken hormones.

An Oct. 20 *Jewish Journal* article highlighted the USC Norris Comprehensive Cancer Center in an article about breast cancer treatment, and quoted USC Norris breast surgeon **Dennis Holmes** about intraoperative radiation therapy, in which patients receive their entire course of radiation therapy in one dose. The article also noted that Harold E. Lee Chair in Cancer Research at USC Norris and professor of pathology at the

Keck School **Michael Press** and professor of medicine **Debu Tripathy** are co-leaders of the Women’s Cancer Program.

An Oct. 20 *Time* article noted that professor of obstetrics and gynecology and chief of the division of reproductive endocrinology and infertility **Richard Paulson** is an author of the professional guidelines regarding embryo transfer, and quoted him about proposals to regulate reproduction in the wake of the Octomom case.

On Oct. 18, ABC News’ “Good Morning America” interviewed **Roberta Diaz-Brinton** of the USC School of Pharmacy about her research on how Alzheimer’s disease affects increasing numbers of women. Brinton recommended that women maintain brain health, which includes avoiding type II diabetes. “World News” also mentioned Brinton’s research.

An Oct. 17 *La Opinion* article quoted professor of preventive medicine and director of the USC Childhood Obesity Research Center **Michael Goran** about the efficacy of anti-obesity efforts targeted at preschool children.

Calendar of Events

This Calendar of events is also online at www.usc.edu/hscalendar for the Health Sciences Campus community

Tuesday, Nov. 2

Noon. Psychiatry Grand Rounds. "Neuropsychiatric Aspects of HIV and AIDS," Karl Goodkin, Cedars-Sinai. ZNI 112. Info: (323) 442-4065

Noon. Women in Management Speaker Series. "Navigating and Managing Change in the Workplace," Karen Ribback, USC. NRT LG503/504. Cost: \$15 members, \$18 non-members. Info: (323) 442-7873

5 p.m. Global Health Lecture Series. "Chronic Non-Communicable Diseases: Global Dimensions and Determinants," Srinath Reddy, Public Health Foundation of India. NRT Aresty Aud. RSVP to global.health@usc.edu or call (323) 865-0419

Wednesday, Nov. 3

5 p.m. Global Health Lecture Series. "Cardiovascular Health is the Heart of Global Development," Srinath Reddy, Public Health Foundation of India. Davidson Conference Center. RSVP to global.health@usc.edu or call (323) 865-0419

Thursday, Nov. 4

8:15 a.m. – 12:45 p.m. Diabetes Research Center Mini Symposium sponsored by the Clifton Stewart Diabetes Research Center. Various speakers. ZNI 112. Info: (323) 442-1039

Friday, Nov. 5

11 a.m. Hematology Grand Rounds. "NFkB Signaling in KSHV-Associated Malignancies," Preet Chaudhary, USC. IPT C2J103. Info: (323) 865-3950

Tuesday, Nov. 9

11:30 a.m. USC Norris Comprehensive Cancer Center Patient Education Program. "Improving Treatments for Blood Cancers – What You Need to Know to Make Informed Decisions," Ann Mohrbacher, USC. NOR Aresty Aud. Info: (310) 846-4704

Noon. Psychiatry Grand Rounds. "Treatment of Latinos with Schizophrenia," Alex Kopelowicz, UCLA. ZNI 112. Info: (323) 442-4065

Wednesday, Nov. 10

Noon. ZNI Seminar Series. "Precision and Function of Neuronal Circuits Controlling Motor Behavior," Silvia Arber, Univ. of Basel. ZNI 112. Info: (323) 442-2144

Friday, Nov. 12

8:30 a.m. Surgical Grand Rounds. "Genome Censorship: Epigenetic Control in Lung Health and Disease," Ite A. Laird-Offringa, USC. DOH 100. Info: (323) 442-2506

Tuesday, Nov. 16

Noon. Psychiatry Grand Rounds. "Pharmacotherapy for People with Schizophrenia and Co-occurring Substance Use," Douglas Noordsy, Dartmouth. ZNI 112. Info: (323) 442-4065

Thursday, Nov. 18

4 p.m. CER Workshop. "Developing NIH Grant Applications," Steve Moldin, USC. NML East Conference Rm. Info: (213) 740-6709

Friday, Nov. 19

8:30 a.m. Surgical Grand Rounds. The 12th Annual Leonard and Marie Louise Rosoff Lecture in General Surgery. "The Joy of Mentoring," Thomas Berne, USC. DOH 100. Info: (323) 442-2506

Notice: Deadline for calendar submission is 4 p.m. Monday to be considered for that week's issue—although three weeks' advance notice of events is recommended. Please note that timely submission does not guarantee an item will be printed. Send calendar items to *The Weekly*, KAM 400 or fax to (323) 442-2832, or e-mail to ebalauw@usc.edu. Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location, and a phone number for information.



Brian Morris

HONORING EXCELLENCE—Keck School of Medicine Dean Carmen A. Puliafito honored the school's top-performing students at a ceremony on Oct. 11, telling them that since their arrival, "You gave it your all [academically] and produced results that are really inspiring." He thanked them for their achievement, noting that "Having high-performing, outstanding students drives our faculty and drives all the other students to perform at a really high level." Above, honorees of the Class of 2012 enjoy a light moment after the event. For a complete listing of award recipients and honorees, visit <http://tinyurl.com/2clf6yc>.

USC researchers use embryonic stem cell tech to create 'knockout' rats

Researchers at the Keck School of Medicine have, for the first time, generated "knockout" rats—animals that are genetically modified to lack one or more genes—through embryonic stem (ES) cell-based gene targeting. The long-awaited achievement provides scientists with a far more effective animal model to study a range of human diseases.

The research was published online Aug. 11 in the journal *Nature* and will appear in an upcoming print edition of the journal.

"Using this gene targeting technology in ES cells, we can produce nearly any type of

mutation in any given genes, allowing us to generate many different disease models for the rat," said Qi-Long Ying, assistant professor of cell and neurobiology at the Keck School of Medicine of USC and the study's principal investigator. "We anticipate that many of the rat models generated using this technology will mimic human conditions more closely, and can be used for drug screening and the testing of new treatments."

The development of knockout rats will have a significant impact on biomedical research because the rat physiology is much more closely related to

humans than mice in many aspects of biology. Also, rat models more closely mimic human diseases in many areas such as cardiovascular disease, neurodegenerative disease, nephropathy, obesity and breast cancer.

"The ability to specifically modify rat genes to mimic human diseases, or to study how the human body responds to drugs represents a technical breakthrough of profound impact," said Martin Pera, director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC.

For the full story, visit <http://tinyurl.com/2476ggz>.

ONLINE EXTRAS

Read more HSC news online:

• Norris Auxiliary Unveils Donor Wall

<http://tinyurl.com/2ep29gy>

• NIH Awards USC Researchers \$1.7 Million for Protein Structure Study

<http://tinyurl.com/2a466er>

• Keck School of Medicine of USC-Led Team Receives Popular Mechanics Breakthrough Award For Retinal Implant Project

<http://tinyurl.com/28lpyyb>

• Keck School Welcomes New Faculty

<http://tinyurl.com/2fj56xm>

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Visit the USC Web: <http://emergency.usc.edu> This page will be activated in case of an emergency. Backup Web servers on the East Coast will function if the USC servers are incapacitated.