

USC neuroscientists receive \$9 million to map gene expression

By Meghan Lewit

Two USC neuroscientists have been awarded nearly \$9 million in American Recovery and Reinvestment Act funds to map how genes are expressed in different regions of the human brain throughout development.

The two-year Grand Opportunity grant, funded through the National Institute of Mental Health, will allow researchers to use DNA sequencing and profiling technologies to create an atlas of when and where thousands of genes are expressed during key periods of development. The findings will be freely accessible to scientists worldwide and provide a foundation for discovering the origins of mental disorders.

James A. Knowles, professor of psychiatry at the Keck

School of Medicine of USC, and Pat Levitt, director of the Zilkha Neurogenetic Institute at the Keck School of Medicine, will lead the project in collaboration with researchers at Yale University and the Allen Institute for Brain Science in Seattle, Wash.

"This project will allow us to document which individual genes and sets of genes are turned on and off in different brain regions through the whole developmental time period," said Knowles, the principal investigator on the project. "This information is essential for understanding normal and abnormal brain development."

Mental disorders such as autism and schizophrenia are increasingly recognized as brain disorders that have their origins during development.

However, relatively little is currently known about how specific genes regulate human brain development, Knowles noted.

Co-principal investigator Levitt, who is also Provost's Professor of Neuroscience, Psychiatry, and Pharmacy, said, "Breaking through the mysteries of the developing human brain and the origins of mental illnesses requires a very large, collaborative effort. We are so pleased to be part of an esteemed group of scientists that will produce more information on the human brain than ever before."

He added, "This will lead to new breakthroughs in determining disease risk and prevention."

Researchers at USC and partner institutions will sequence the genomes from

hundreds of brain samples in order to create a three-dimensional, Web-based model that can be used by scientists all over the world as a basis for future neuroscience research.

"This will provide investigators with a fantastically rich resource for future research," Knowles said.

The purpose of the National Institutes of Health Research and Research Infrastructure Grand Opportunities program is to support high impact ideas that lay the foundation for new fields of investigation.

The initiative is one of several being offered to help fulfill the goals of the American Recovery and Reinvestment Act of 2009 to help stimulate the economy through support of biomedical and behavioral research.

'Breaking through the mysteries of the developing human brain and the origins of mental illnesses requires a very large, collaborative effort.'

—Pat Levitt, director of the Zilkha Neurogenetic Institute at the Keck School of Medicine

Study identifies genes that may predict bladder cancer survival

By Meghan Lewit

Researchers at the Keck School of Medicine have identified four specific genes that appear to predict urinary bladder cancer recurrence and survival.

The study was published in a recent issue of the *Journal of Clinical Oncology*.

"We have documented a four-gene panel that significantly predicts both bladder cancer recurrence and survival. This concise prognostic gene pool has been discovered using targeted expression profiling, and is superior to current panels that often consist of hundreds of genes," said Anirban Mitra, research associate in the Department of Pathology at the Keck School of Medicine and the lead author on the study.

Investigators studied bladder tumors from patients treated at the USC Norris Comprehensive Cancer Center and Helen Diller Family Comprehensive Cancer Center of the University of California, San Francisco, profiling the expression of 69 genes that previous research had shown to be involved in cellular pathways crucial to cancer development. There is growing evidence that multiple alterations in these pathways are responsible for cancer progression, Mitra noted.

The results showed that six genes were significantly associated with time to cancer recurrence, while 10 genes were tied to overall survival. Of all the genes identified in the analysis, four were found to significantly predict both recurrence and survival (JUN, MAP2K6, STAT3, and ICAM1).

The prognostic potential of the gene panel was further verified by an external cohort of bladder cancer patients from the Memorial Sloan-Kettering Cancer Center in New York.

"The results suggest that these genes and their associated pathways may serve as promising outcome predictors and potential therapeutic targets in bladder cancer," Mitra said. "We believe that we are the only institution currently using such pathway-specific investigations for this cancer type."

"This is a truly unique prognostic analysis," he said.

Urinary bladder cancer affects more than 70,000 people each year in the United States. Of all types of cancer, bladder cancer has an unusually high propensity for recurrence. This requires frequent follow up and cystoscopy, making it one of the most expensive cancers to manage, Mitra noted. The

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Jon Nalick

Keck School fetes dozens of new faculty members

Keck School Dean Carmen A. Puliafito welcomed more than 30 new faculty members to the school at a party at his Pasadena home on Oct. 11. The event was co-hosted by the Medical Faculty Wives and Friends (MFWF).

Above (from left) are new Keck School faculty members Christoph Lee, Monique Mogensen, Matt Tenser and May Kim with Dean Puliafito.

Right (from left) are MFWF members Debbie Weiss, Mary Nelson and Andrea Horwatt.



Body Computing 3.0 highlights cutting edge tech

By Leslie Ridgeway

Live demonstrations of devices that do everything from help physicians connect with each other on patient care issues to showing people how stressful situations affect their hearts were highlights of the Body Computing 3.0 conference on Oct. 9.

“This year was different because we had real products to show,” said Leslie Saxon, chief of the division of cardiology and organizer of the third annual body computing event. “Science fiction has become science fact.”

The conference was launched following remarks from Keck School Dean Carmen A. Puliafito, and Elizabeth Garrett, USC vice president for academic planning and budget. Panel discussions were led by experts from the Keck School of Medicine, Viterbi School of Engineering, Marshall School of Business and USC

Cinema School.

They joined leaders from technology and health institutions including Boston Scientific, Proteus Biomedical, Microsoft, Qualcomm and the Mayo Clinic in discussions on topics including protection of medical information collected in applications and devices that help people manage their health. The panel also examined how these applications and devices relate to health care reform in terms of cost control and improving patient outcomes.

“This conference has established USC



At the USC Body Computing Conference Oct. 9 are, from left, panel moderator Ed Saxon, Academy Award-winning producer for movies including “The Silence of the Lambs”; conference organizer Leslie Saxon, chief of the division of cardiovascular medicine at the Keck School of Medicine; and panel moderator Dana Mead, partner, Kleiner Perkins Caufield & Byers, a leading Silicon Valley venture capital firm that invests primarily in greentech, life sciences, and pandemic and biodefense.

on the forefront of a real game changer in medicine,” said Saxon.

Study explores ways to improve cancer knowledge through narrative

What caused Pinocchio’s nose to grow longer? What was the name of your second grade teacher?

If the first question seemed much easier to answer, you’re not alone, which is why USC Annenberg School for Communication and Journalism professor and principal investigator Sheila Murphy and joint principal investigator Lourdes Baezconde-Garbinati and their colleagues will research narratives as a way to learn and retain information about such important topics as cancer.

Baezconde-Garbinati is an associate professor of research at the Keck School of Medicine of USC and the USC Norris Comprehensive Cancer Center.

“Transforming Cancer, Knowledge, Attitudes and Behavior Through Narrative” was awarded a five-year \$3.1 million grant from the National Institutes of Health.

A team of medical researchers, script writers, artists, physicians,

psychologists, anthropologists, communication scholars and public health professionals will examine and reinvent how health-related information is conveyed.

The purpose of the research is to challenge the underlying assumption that the traditional straightforward recitation of the facts is the optimal way to convey health-related information.

As Murphy pointed out, the power and perseverance of a narrative or story structure has been recognized and utilized for thousands of years, but when it comes time to craft health messages designed to convey crucial, potentially life-saving health information, Western medicine all but ignores the use of narrative. The proposed research empirically tests whether utilizing a narrative format might produce a greater and longer lasting impact on knowledge, attitudes and prevention behavior.

The research also questions the assumption of a “one-size-fits-all” message strategy

by testing whether narratives may be particularly effective for cultures with a strong oral history, for recent immigrants, for older generations and for populations with low literacy.

“Although the research will focus on breast and cervical cancer, the results have clear implications for virtually all health care communication,” Murphy said. “This research could radically change how health messages are conveyed across different ethnic groups, generations and modalities.”

Others involved with the grant include Sandra Ball-Rokeach (co-PI), USC Annenberg; Robert Haile (co-PI.), USC Norris Comprehensive Cancer Center; Sandra de Castro Buffington (co-PI.), Hollywood, Health & Society at USC Annenberg’s Norman Lear Center; Chih-Ping Chou (co-investigator), Keck School of Medicine and USC Norris Comprehensive Cancer Center; Vickie Cortessis (co-investigator), USC Norris Comprehensive Cancer Center; Doe Mayer (co-PI.),

USC Annenberg/USC School of Cinematic Arts; Meghan Bridget Moran (postdoctoral associate/research associate), Keck School of Medicine; Laila Muderspach (co-investigator), Keck School and LAC+USC Hospital; Gerry Power (consultant), BBC World Service Trust; Thomas Valente (co-PI.), Keck School of Medicine and USC Norris Comprehensive Cancer Center; and Mariana Amatullo, Art Center College of Design.

The grant is classified under the National Institutes of Health director’s new T-R01 program that strives to accelerate the current pace of discovery through the support of highly innovative research.

T-R01s provide a new opportunity for scientists that is unmatched by any

other NIH program. Since no budget cap is imposed and preliminary results are not required, scientists are free to propose new ideas that may require significant resources to pursue. They are also given the flexibility to work in large, complex teams if the complexity of the research problem demands it.

NIH director Francis S. Collins said the appeal of this and other recent NIH grants is that investigators are encouraged to challenge the status quo with innovative ideas, while being given the necessary resources to test them.

“The fact that we continue to receive such strong proposals for funding through the programs reflects the wealth of creative ideas in science today,” Collins said.

JCO: Genes may aid prognostic prediction

Continued from page 1
invasive form of the cancer, which comprises about 20 to 30 percent of cases, has a low survival rate, and treatment usually involves removing the bladder.

“This study identifies gene alterations that have the strongest prognostic impact across all disease stages. Our approach defined a panel that can predict an individual patient’s prognosis, independent of standard clinical and pathologic criteria,” explained Richard Cote, former professor of pathology at the Keck School of Medicine and current chair of the Department of Pathology at the University of Miami Miller School of Medicine and principal investigator of the study.

The results of the USC study have a direct clinical

translation, Mitra said. By determining the major molecular pathways tied to bladder cancer progression and outcomes, physicians can identify specific patients with operable tumors who may experience recurrence and will clearly benefit from additional therapy.

“The goal is to move toward creating targeted, personalized management strategies,” Mitra said. “This pathway-specific approach can also be applied to other cancers, and ultimately may lead to better outcomes and improved quality of life for patients.”

The study appeared in the in the August 20 issue of the *Journal of Clinical Oncology*.

The study was supported by the National Institutes of Health and National Cancer Institute.

TheWeekly

Next Issue: Oct. 23

The Weekly is published for the faculty, staff, students, volunteers and visitors in the University of Southern California’s Health Sciences Campus community. It is written and produced by the Health Sciences Public Relations and Marketing staff. Comments, suggestions and story ideas are welcome. Permission to reprint articles with attribution is freely given.

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Keck School of Medicine opens new computer testing center

By Sara Reeve
The Keck School of Medicine officially opened its new computerized testing center at a reception on Sept. 30. The center, which began testing services for students recently, is located in the Bishop Medical Testing building and consists of two testing rooms that can accommodate 47 students each.

“This is a really exciting day for me,” said Henri Ford, vice dean of medical education, who spoke at the reception. “It celebrates the culmination of a dream that we didn’t think was possible.”

According to Ford, the new center is reflective of an early trend among medical schools nationwide to move testing from paper to the screen. “Having this center puts us among the list of elite medical schools,” said Ford. “It demonstrates to

the Liaison Committee on Medical Education how serious we are about medical education, to become one of the dozen or so institutions in the country to have such a center.”

By taking exams online, students can view detailed medical imagery and receive exam results rapidly. Getting acclimated to computerized testing will also help students prepare for exams offered by the National Board of Medical Examiners.

The establishment of the computerized testing center is part of a wider effort on behalf of the Keck School to incorporate computers into the classroom. The Year II lecture hall was recently upgraded with seats that provide electrical power for laptop computers and are fitted with laptop-sized tablet arms.

“During a lecture at the Keck School of

Medicine, students with laptop computers have the opportunity to download the power point presentation of the lecturer and better follow by annotating the lecture slides,” said Allan Abbott, associate dean for curriculum. “Lecture handouts are also available for download to use as reference during the presentation.” According to Abbott, many students are now installing software onto their computers so that they can directly interact with audience response questions during classes.

“These new capabilities mark another milestone that reflects our desire to provide innovative medical education for our students,” said Ford.



Pamela Schaff, assistant dean for curriculum at the Keck School, test drives one of the work stations at the new computerized testing center during a reception on Sept. 30.

Hospitals’ Trojan spirit on display at alumni association conference

Applause greeted a photo of two nurses wearing “New Trojan” T-shirts during a presentation Sept. 25 by USC University Hospital and USC Norris Cancer Hospital CEO Mitch Creem to the USC Alumni Association Leadership Conference. The conference is a gathering of more than 250 alumni leaders from across the campus and around the world.

Creem gave the group a taste of the Trojan Spirit

present throughout the hospitals after the acquisition on April 1, 2009. He spoke of the mood of employees as the midnight hour approached.

“The excitement between 10 o’clock and midnight was palpable,” he said. “Employees were thanking me, and some told me they had come to work at the hospitals years ago because they wanted to work at USC.”

Creem outlined ambitious growth plans including

hiring more nurses at a brisk pace and marketing to increase the hospitals’ visibility in the Los Angeles area.

“We’ve been described as an island in East L.A.,” he said. “We need a physical presence in your communities.”

In closing, Creem asked the group to think of the hospitals in the context of two words that speak of inspiration, comfort and hope: “Fight On.”

As LCME site visit looms, Keck School urges departments to complete training

The Office of Educational Affairs is urging all departments of the Keck School of Medicine to schedule their faculty development workshops for 2009-2010 before the Liaison Committee on Medical Education (LCME) site visit on Nov. 15-18.

Henri R. Ford, vice dean for medical education, said

that a key aspect of the accreditation process is documenting the training that the school provides to individuals who teach our medical students.

“Understanding how to give feedback, leading small group sessions—which is an integral part of the medical student curriculum here at Keck—and teaching at the

bedside are all important skills for our faculty and residents who participate in the teaching mission,” he said.

The LCME requires that all individuals involved in teaching medical students be prepared for their roles in teaching and evaluation.

At the Keck School, two key programs address this requirement. The first,

“Residents as Teachers,” is critical for all core, required clerkships for medical students.

Coordinated by the division of medical education, the program consists of four sections: microskills of clinical teaching, giving feedback, bedside teaching and work rounds.

The second, “Faculty

Development as Teachers,” requires each department to schedule at least three workshops from a list available online at mededonline.usc.edu.

For additional information about these programs, please contact Maurice Hitchcock, director of the division of medical education at hitch@usc.edu.

AAPS to present ‘Moving Targets’ symposium for young scientists Nov. 7

By Kukla Vera
Faculty and students are invited to a day-long event focusing on pharmaceuticals and the tumor microenvironment.

This year’s “Moving Targets” event, presented by the American Association of Pharmaceutical Scientists, is a great opportunity for young scientists to network with experts from around the world.

The symposium will discuss drug delivery and therapeutics to the tumor microenvironment, and will

include presentations from prestigious representatives of industry and academia.

Speakers include Hiroshi Maeda (Sojo University, Japan), Neil Gibson (Pfizer, La Jolla), Dai Fukumura (Massachusetts General Hospital/Harvard University), Jindrich Kopecek (University of Utah), Francis C. Szoka (University of California, San Francisco), Napoleone Ferrara (Genentech, San Francisco) and Walter Wolf (USC).

These speakers represent diverse, international

perspectives from leaders in the pharmaceutical field.

In addition to these presentations, the event will include a poster competition, with cash prizes awarded, and a reception at Lucky Strike Lanes at L.A. Live in Downtown Los Angeles.

Registration is free; however pre-registration for the event is required. Space is limited.

The event will be held at the Radisson at USC, Midtown Los Angeles, Nov. 7. Register at pharmweb.usc.edu/aaps/registration.html to participate.

The Weekly NEWSMAKERS

On Oct. 12, KNBC-TV interviewed associate professor of preventive medicine **Michael Cousineau** about a study he led on homelessness in Los Angeles. The *Los Angeles Daily News*, the *Whittier Daily News* and the Web site LAist also reported on the study.

An Oct. 6 *Jewish Journal* article reported that **Charles Goldstein** of the USC School of Dentistry was honored by the nonprofit organization Homeless Not Toothless, which brings together area dental offices to provide

free care to the homeless and underserved.

An Oct. 6 *San Francisco Chronicle* blog featured chief of cardiovascular medicine **Leslie Saxon** and the Body Computing conference held at USC. The Huffington Post also featured an editorial by Saxon on health information technology, and *Fast Company Magazine* reported on topics covered at the conference.

An Oct. 4 *Chicago Tribune* article quoted professor of medicine and co-leader of the Women’s Cancer

Program at USC Norris **Debu Tripathy** in a story about advances in breast cancer research.

An Oct. 3 *Press-Enterprise* article quoted associate professor of preventive medicine **W. James Gauderman** about the Obama administration reconsidering the federal health standard for ozone to determine if the standard set by the Bush administration goes far enough to protect health.

An Oct. 2 Associated Press article featured the announcement of a

\$100 million gift from Patrick Soon-Shiong of Abraxis BioScience Inc. to turn St. John’s Health Center in Santa Monica into a cutting-edge hub by linking it with doctors and patients at other hospitals, as well as researchers at USC and UCLA.

A Sept. 20 *Ventura County Star* article reported that proceeds from the recent Cure in the Canyons III charity event will fund research at the USC Norris Comprehensive Cancer Center and its Lee Breast Center.

Calendar of Events

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

Saturday, Oct. 17

9 a.m. “Product Safety through Risk Communication,” Various speakers. CHP 106. Info: (323) 442-3102

Monday, Oct. 19

Noon. Liver Grand Rounds. “Case Presentations,” Joon Kim, USC. IPT C3J101. Info: (323) 409-7995

Noon. KSOM Research Seminar. “Paneth Cell A-Defensins: Peptide Mediators of Enteric Innate Immunity,” Andre Ouellette, USC. NRT Aresty Aud. Info: (323) 442-1144

3 p.m. 12th Student, Faculty and Staff Art Gallery Show Opening Reception. KAM Basement Lobby. Info: (323) 442-2553

Tuesday, Oct. 20

9 a.m. Neurology Grand Rounds. “Mapping Susceptibility and Modeling Pathogenesis in Multiple Sclerosis,” Jorge Oksenberg, UC San Francisco. ZNI 112. Info: (323) 442-7686

11 a.m. Endocrinology Grand Rounds. “Testosterone Therapy for Hypogonadism,” Glenn Braunstein, Cedars-Sinai Medical Ctr. HMR 100. Info: (323) 442-2806

4 p.m. “Beyond the Stimulus: Assessing Your Federal Research Outlook for 2010,” Various speakers. NOR 7409. ESVP: usc.edu/esvp (code: federal)

Wednesday, Oct. 21

5 p.m. USC Global Health Visions for Change Lecture Series. “Fighting the H1N1 Outbreak in Mexico,” Mauricio Hernández Ávila, Deputy Minister, Ministry of Health, Mexico. UPC: Davidson Conference Ctr. Info: (323) 865-0419

Thursday, Oct. 22

Noon. Research Center for Liver Diseases Seminar. “Progeroid Syndromes and the Molecular Basis of Aging,” Lucio Comai, USC. HMR 100. Info: (323) 442-1283

5 p.m. USC Global Health Visions for Change Lecture Series. “The Rising Epidemic of Obesity in Mexico: Causes, Costs, and Control,” Mauricio Hernández Ávila, Deputy Minister, Ministry of Health, Mexico. Reception following lecture.

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 HSC Weekly, KAM 400 or fax to (323) 442-2832, or e-mail to ebllaauw@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.

NRT Aresty Aud. Info: (323) 865-0419

Friday, Oct. 23

8 a.m. CHLA Grand Rounds. “The Surgical Challenge of Neuroblastoma,” Edward St. Gerard Kiely, Great Ormond Street Hospital, London. Saban Research Building Aud. Info: (323) 361-2935

8:30 a.m. “Advances in Mass Casualty Cyanide Poisoning Treatment Research,” Matthew Brenner, UC Irvine. GNH 11-321. Info: (323) 226-7923

9 a.m. USC Childhood Obesity Research Ctr. “Proteomics in the Study of Insulin Resistance and Type 2 Diabetes Mellitus,” Lawrence Mandarino, Arizona State Univ. CSC 250. Info: (323) 442-2637

10:30 a.m. Parent’s Day Health Fair and American Pharmacists Month Celebration. Free Screenings. UPC: Quad area by Tommy Trojan. Info: (323) 442-3497

11 a.m. Hematology Grand Rounds. “Acute Myeloblastic Leukemia – Novel Strategies, Novel Agents,” Gary Schiller, UCLA. IPT C2J103. Info: (323) 865-3950

Noon. Gastrointestinal Grand Rounds. “Case Presentations,” Angizeh Sadeghi, USC. OPT A5C129. Info: (323) 409-7995

Noon. Pharmacology and Pharmaceutical Sciences Seminar. “Viral Control of Autophagy,” Jae Jung, USC. PSC 104. Info: (323) 442-4118

Saturday, Oct. 24

8 a.m. Office of Continuing Medical Education and the Division of Cardiovascular Medicine Course. “Current Diagnosis and Management of Atrial Fibrillation,” Various speakers. KAM Mayer Aud. Info: (323) 442-2555

Monday, Oct. 26

Noon. Liver Grand Rounds. “Case Presentations,” Joon Kim, USC. IPT C3J101. Info: (323) 409-7995

Noon. KSOM Research Seminar. “Anti-angiogenic VEGF Isoforms: Their Role in Cancer and Eye Disease,” David Bates, Univ. of Bristol, UK. NRT Aresty Aud. Info: (323) 442-1144

Amateur radio club members tune in, turn on, ShakeOut

By Leslie Ridgeway

If cell phone and telephone systems are knocked out during a disaster, at least three people at the Health Sciences Campus stand a chance of making contact with the outside world.

Madeline Bauer, Herb Meiselman and Stanley Tahara tested their amateur radio skills during the Great California ShakeOut at 10:15 a.m. on Oct. 15. While rescue crews worked with mock victims during the earthquake drill, Bauer, Meiselman and Tahara staffed their amateur radios, testing communication capabilities that will be critical if a real disaster happens.

Bauer, a statistician with the Department of Medicine; Meiselman, professor of physiology and biophysics; and Tahara, associate professor of microbiology, are all members of the USC Amateur Radio Emergency Communication Team. The group, started just a few months ago, includes 10 additional members at the University Park Campus.

Meiselman and Tahara started their amateur radio hobbies about 10 years ago, after discovering their shared interest during casual conversation. Bauer took it up after the 1998 Whittier earthquake rattled her nerves. Today, she’s one of a small number of women who participate.

“It’s not something your mother suggests you go do,” she said.

Once a week, the Amateur Radio Emergency Communication Team tests their equipment by calling each other



Jon Nalick

Above (from left), Madeline Bauer, Stanley Tahara and Herb Meiselman are prepared to assist in emergency communication using small but powerful radios (right) in the event of a large-scale disaster or earthquake.



on each campus. Getting involved on the team seemed like a natural outgrowth of their interest in amateur radio.

“We aren’t the types who

like to sit around,” said Tahara. “Public service is a part of amateur radio. This is an opportunity for us to be of service.”

Massry Prize Laureate wins the 2009 Nobel Prize in Chemistry

Professor Ada Yonath of the Weizmann Institute in Israel, who won the 2004 Massry Prize, received the 2009 Nobel Prize in Chemistry. She won both prizes for her work in mapping the structure of ribosomes, the protein-producing factories within cells at the atomic level.

To date, nine of the Massry Prize Laureates went on to win the Nobel Prize. Professor Yonath is the fourth woman scientist to win the Nobel Prize in Chemistry and the first since 1964 when Dorothy Crawford Hodgkin of Britain received the prize.

Shaul Massry, professor emeritus of medicine at the Keck School, founded the nonprofit organization that awards the Massry Prize.

In case of an emergency...

Call the Emergency Information Phone: 213-740-9233 The emergency telephone system can handle 1,400 simultaneous calls. It also has a backup system on the East Coast.

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.

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