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Martin Pera (right), professor and founding director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC, discusses how stem cells may be enlisted to combat a wide range of diseases. Joining him on the panel for the April 22 Town Forum are UCLA microbiologist Donald Kohn (far left) and UC Irvine neuroscientist Leslie Michels.

“Embryonic stem cells provide an indefinite renewable source of human cells. For the first time we have in the lab a source of normal human cells to study.”

— Martin Pera, professor and founding director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC

CIRM Town Forum focuses on stem cells

By Meghan Lewit

Three prominent Southern California scientists, including USC’s Martin Pera, met at the Davidson Conference Center April 22 to share progress in research and stem cell-based treatments with members of the public.

The Town Forum meeting was hosted by the California Institute for Regenerative Medicine (CIRM). The event featured CIRM-funded researchers—Pera, professor and founding director of the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC, UCLA microbiologist Donald Kohn and UCI neuroscientist Leslie Michels—

who made short presentations about their research and fielded questions from the audience.

In an overview of stem cell research and regenerative medicine, Pera noted the potential to provide tissues that can treat a wide range of serious illnesses.

Much of his remarks focused on the promise of pluripotent embryonic stem (ES) cells. Because these cells have the ability to reproduce and form any cell in the human body, researchers believe that they can one day be used to replace dead or damaged cells in diseased tissues and to develop new treatment therapies.

“Embryonic stem cells provide an in-

definite renewable source of human cells,” Pera said. “For the first time we have in the lab a source of normal human cells to study.”

He also noted that emerging research into reprogramming adult cells to an embryonic-like state could provide a new method to create large blocks of patient-specific stem cell lines.

“This opens up a very exciting avenue,” Pera said.

Michels highlighted how embryonic stem cells may be used in the treatment of Huntington’s disease, a neurological disorder characterized by uncontrolled

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USC study suggests stem cell therapy as effective treatment for lupus

By Beth Dunham

Stem cell research from the USC School of Dentistry’s Center for Craniofacial Molecular Biology—and a resulting human clinical trial from China’s Nanjing University—hold great promise for lupus patients, said Songtao Shi, associate professor at the USC School of Dentistry.

The joint study, appearing the journal *Stem Cells* is now online.

Systemic lupus erythematosus, or lupus, is a serious disease that literally turns the body’s immune system against itself and affects the entire body, especially the skin, kidneys, nervous system and joints.

The common treatments used to slow the disease’s assault on patients’ bodies involve immunosuppressive drugs, which alleviate lupus symptoms for many patients but leave them vulnerable to potentially devastating infections and organ dysfunction.

According to Shi, lupus isn’t just the result of malfunctioning immune system cells. Those cells appear to have a close relationship with mesenchymal stem cells (MSC) in bone marrow, which differentiate into several types of cells that can affect the immune system.

“These stem cells live in the bone marrow along with the immuno cells,” he said. “There’s a lot of interplay going on; if the immuno cells have problems, the MSC or the interplay between the two types of cells may have problems as well.”

While observing mice whose mesenchymal stem cells’ function had been impaired, researchers noticed that the stem cells’ deficiencies appeared to be partially responsible for the development of a lupus-like disease in the animals. After the infusion of healthy mesenchymal stem cells into the experimental group of mice, their symptoms abated and organ function improved. These improvements were much more dramatic than those seen in the mice undergoing the traditional treatment of immune system suppression.

Fueled by the dentistry center’s promising laboratory results, researchers investigating lupus at Nanjing University Medical School used mesenchymal stem cells infusion to treat four young adult patients whose lupus symptoms no longer responded well to immunosuppression therapy. The three women and one man—nearly 90 percent of SLE patients are

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USC University Hospital honors volunteers

By Meghan Lewit

About 40 USC University Hospital volunteers were honored April 25 at the hospital’s annual volunteer recognition brunch.

The event celebrated volunteers from a number of hospital departments and the three recipients of the Volunteer of the Year Awards.

The award recipients—representing high school, college and adult categories—each received a certificate and a pair of Los Angeles Dodgers tickets.

The hospital has approximately 257 active volunteers, many of whom are students at USC and area high schools, said Kai Tramiel, manager of volunteer services and patient/guest relations. “Our volunteers can be seen in virtually every department of the hospital with interests as diverse as wanting to enter the medical field to simply wanting to lend a hand to a patient and guest in need,” she said.



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USC University Hospital honored high school student Kenia Flores (left), and college student Liset Dondiego as “volunteers of the year.” Adult Volunteer of the Year Sandy Alcala could not attend the event but received her award April 27.

USC Trustee Stanley Gold awarded Presidential Medallion

Stanley Gold and his wife Ilene “are lavish with their time, talent and means” in supporting this university.

— USC President Steven B. Sample,

USC trustee and past board chair Stanley Gold was awarded the university’s highest honor, the Presidential Medallion, at the Academic Honors Convocation on April 14.

Gold received his award at a Town & Gown dinner at which 14 students and 14 faculty members also were recognized for their accomplishments.

In remarks prepared for the medal citation, USC President Steven B. Sample wrote that Gold “has played an instrumental role in the dramatic ascent of his alma mater into the top ranks of research universities. Under his guidance as a trustee since 1993 and as board chairman from 2002 to 2008, USC has greatly advanced in its goals of globalization, learner-centered education and meeting



Stanley Gold

societal needs.”

In addition, Sample wrote, “Gold is a genius at analyzing budgets and spreadsheets.”

Those talents were pivotal as Gold served as the university’s chief negotiator in its recent purchase of USC University Hospital and USC Norris Cancer Hospital, as well as in USC securing a 47-year lease with the Los Angeles Memorial Coliseum Commission.

“He also led—and generously supported—a delegation of trustees on a historic trip to China,” Sample added.

Gold, who grew up near USC, was the first in his family to attend college. He holds a law degree from USC.

He made his professional mark in both the legal and financial fields, serving as a director of the Walt Disney

Co. and currently as president of the investment companies Shamrock Holdings and Shamrock Capital Advisors.

Sample noted that both Gold and his wife Ilene “are lavish with their time, talent and means” in supporting this university. “Their donations to USC over the years have

funded student scholarships and fellowships at USC College and at various schools, including the USC Gould School of Law, the USC School of Policy, Planning, and Development and the USC Marshall School of Business, where

their son Charles earned his MBA. They’ve also supported research centers that advance religious and cultural understanding, such as the USC Institute for Advanced Catholic Studies and the USC Institute of Armenian Studies.”

Ilene Gold currently serves on the Board of Councilors of

the USC Roski School of Fine Arts. Her husband, in addition to serving on the USC Board of Trustees, also serves on the Board of Councilors of the USC Gould School of Law, the Board of Overseers of the Keck School of Medicine of USC and the Board of Governors of the Hebrew Union



Donald Feinstein

College-Jewish Institute of Religion. He also is the board chair of the Jewish Federation of Greater Los Angeles.

Also at the convocation, Donald Feinstein, emeritus chief of medicine of USC University Hospital and USC Norris

Cancer Hospital, received a faculty lifetime achievement award.

Feinstein, professor of medicine in the division of hematology at the Keck School of Medicine and a pioneer in the area of blood-related cancer, has been at USC for more than 40 years.

CIRM: Forum touts stem cell opportunities

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movements, emotional instability and loss of intellectual faculties. There is currently no cure for the disease, but researchers are working toward using stem cells to develop model systems for studying the disease.

“Huntington’s disease is caused by a single known genetic mutation, which is an advantage for stem cell-based treatments and research,” Michels said. “There is a huge opportunity for us to mimic the disease state in these cells.”

Kohn discussed his work in hematopoietic (blood forming) stem cell transplant and gene therapy. His group participated in the first clinical trial of gene therapy for severe combined immunodeficiency (“bubble baby disease”) in newborns using their umbilical cord blood as the source for stem cells, and is developing a new trial for stem cell gene therapy for sickle cell disease.

Clinical stem cell therapy “may provide life-saving benefits to thousands of people each year,” Kohn said.

The USC event was the last of three CIRM Town Forums that have been held throughout the state, offering attendees an opportunity to learn how CIRM is investing to improve human health and advance stem cell science.

CIRM was established when voters passed Proposition 71 in 2004 to borrow and spend \$3 billion over 10 years to support stem cell research. To date, CIRM has awarded nearly 300 grants to institutions statewide.

For additional information on USC’s stem cell programs, visit <http://stemcell.usc.edu>

HSC COMMENCEMENT EVENTS

The following lists the satellite commencement ceremonies for the Health Sciences Campus. The locations and times are listed, as well as the announced speakers. Please note that the Keck School of Medicine does not participate in the main commencement ceremony at the University Park Campus.

Wednesday, May 13

Keck School of Medicine—M.S., Ph.D. & M.P.H.

4 p.m. at the Harry and Celesta Pappas Quad on the Health Sciences Campus. Paul Zachary Myers, associate professor of biology, University of Minnesota Morris. Reception will follow.

Friday, May 15

Biokinesiology & Physical Therapy

11 a.m. at Bovard Auditorium at the University Park Campus. Kristina Ripatti, an LAPD officer shot in the line of duty in 2006, will share her inspiring recovery story.

Dentistry

11 a.m. on the Intramural Field at the University Park Campus. Arthur A. Dugoni, Dean Emeritus of the Arthur A. Dugoni School of Dentistry, University of the Pacific.

Occupational Science and Occupational Therapy

10:30 a.m. on the lawn west of Leavey Library at University Park Campus. Shawn Phipps, distinguished USC alumnus, president of the Occupational Therapy Association of California. Reception will follow.

Physician Assistant Program

10:30 a.m. on the southwest lawn of the Hancock Building (AHF) at University Park Campus. Robert Miller and Robert Sachs of the Keck School of Medicine will speak. Reception will follow at the same location.

School of Pharmacy

3 p.m. at the Harry and Celesta Pappas Quad on the Health Sciences Campus. Paul Gregerson, chief medical officer of the JWCH Institute. Reception to follow in the Upper Quad.

Sunday, May 17

Keck School of Medicine—M.D./Ph.D., M.D.

3 p.m. at the Shrine Auditorium. Peter J. Katsufarakis, vice president for assessment programs of the National Board of Medical Examiners. Reception will follow at Founders Park at the University Park Campus.

The Weekly

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Campus embraces ‘reduce, reuse, recycle’ philosophy on Earth Day

By Ina Fried
Green was USC’s color April 23 as more than 600 people attended the Earth Day Fair in the Harry and Celesta Pappas Quad on the Health Sciences Campus. Reusable green bags were a big hit to those who vowed to use a sustainable practice, such as recycling.

“We use 3 billion plastic bags a year in the United States,” said Jane Singleton, assistant director of purchasing services for the Health Sciences Campus, who was distributing the green bags. “It’s not just about getting a green bag. It’s about taking that bag to the market and the mall and not bringing a plastic bag home. We can’t eliminate plastic bags, but we can definitely cut down on the number we use.”

At the fair, Environmental Health and Safety collected two boxes of batteries and nearly three large boxes of electronic waste, reported

Jane Bartlett, associate director for industrial hygiene and lab safety. Departments may request pick-up of electronic and other hazardous wastes at any time from Environmental Health and Safety by completing a “Request HazMat Pickup” form online at <http://capsnet.usc.edu/EHS>.

Adding to the celebration were signs created by members of the third grade Environmental Sciences Magnet Class taught by Theresa Kennedy at Multnomah Elementary School.

Vendors showcased environmentally friendly laboratory products, such as biodegradable tube holders, quieter biosafety cabinets, and freezers that use less energy and emit less excess heat than traditional ones.

Focusing not only on the product, but also on the way it’s produced, several vendors touted the benefits of hybrid delivery trucks, delivery routes that reduce emissions



Jon Naick

Right, John Lindsey, owner of AAA Petal Pushers florist shop, extols the benefits of decorating office spaces with live plants, which can scrub carbon dioxide from the air while also generating oxygen.

and facilities with LEED certification (an internationally recognized system that measures stewardship of resources).

For more information about sustainability programs and services at USC, visit sustainability.usc.edu and capsnet.usc.edu/EHS/.

STEM CELL: Results of single stem cell treatment called ‘very promising’

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female—were each suffering from kidney complications as a result of the disease and received healthy stem cells from bone marrow donated by immediate family members.

In all of the patients, organ function improved greatly, with two patients lessening their dosages of immunosuppressive drugs to low maintenance levels, and the other two stopping their immunosuppression regimen entirely. Short-term follow-up at 18 months post-mesenchymal stem cells infusion indicated no problems with either organ function or reactions to the transplanted cells, Shi said.

While five- to 10-year follow-up still needs to be completed, the

results of the single stem cell treatment are very promising. “Time will tell, but we feel very good about this work,” he said. Being among the first scientists to target immunodisease with a mesenchymal stem cell approach is exciting, Shi added. In addition, the close partnership between the basic stem cell scientists at USC and the clinical researchers investigating lupus at Nanjing University is one that Shi hopes will be recreated with investigations into other diseases in order to more quickly get promising treatments to the patients that need them. “In the future, this type of research will help us to understand diseases and find cures faster,” Shi said.



Cynthia Rosales

FIRING UP CHILDREN’S IMAGINATIONS—During the week of April 20-24 the HSC Child Care Center celebrated “The Week of the Young Child,” an annual national event that focuses public attention on the needs of young children and their families. Sponsored by the National Association for the Education of Young Children, the event also recognizes early childhood programs and services that meet those needs.

During the week-long event, the Child Care Center enjoyed visits from local police and fire departments (left), as well as the USC Trojan Band.

The week ended with children participating in a sing-a-long, table activities and dancing with the elderly from the Monterey Adult Day Care.

Aileen Valino-Camcam, program manager for the center, said, “This was a time for us to recognize that children’s opportunities are our responsibilities as we conveyed this message among our community.”

The Weekly NEWSMAKERS

Complete listing at: www.usc.edu/uscnews/usc_in_the_news

An April 28 *Los Angeles Times* article quoted clinical pharmacy expert **Jeffery Goad** about anti-viral drugs used to treat swine flu. He was also quoted in the *San Francisco Chronicle*.

On April 27, Fox News interviewed infectious disease expert **Paul Holtom** about the swine flu outbreak. He was also interviewed by KPCC-FM, Wall Street Journal Radio and the *San Gabriel Valley Tribune*.

An April 24 *San Diego Union Tribune* article quoted stem cell expert **Martin Pera** about a stem cell technique that doesn’t involve destroying embryos.

On April 23, the TV show “The Doctors” featured a segment and interview with radiation oncologist **Paul Pagnini** that highlighted Cyberknife radiosurgery for the treatment of brain tumors.

On April 22, National Italian Television interviewed ophthalmologist **Mark Humayun** about the retinal eye implant.

On April 21, CBS News, in a widely carried WebMD story, quoted fertility expert **Richard Paulson** about hysterectomies.

An April 21 *NCI Cancer Bulletin* article highlighted research led by pathologist **Florence Hofman** that was presented at the American Association for Cancer Research annual meeting. Hofman’s team targeted brain cancer with an inhibitor called dimethyl-celecoxib. Medical News Today online also featured the study.

An April 20 Reuters article featured a study by Alzheimer’s disease expert **Lon Schneider** and colleagues warning that elderly patients with Alzheimer’s disease who are treated with second-generation antipsychotics should be monitored closely for weight gain and lipid abnormalities.

Calendar of Events

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

Monday, May 4

Noon. Medical Student Research Forum & Poster Day. KAM Mayer Aud. Info: (323) 442-1763

Noon. “Psychosocial Issues of Organ Donation and Transplantation,” Mary Fischer, USC. GNH 4420. Info: (323) 226-7337

4 p.m. “Research in Progress,” Sheila Cherian, USC. GNH 4420. Info: (323) 226-7337

Wednesday, May 6

8 a.m. The HRSA Patient Safety & Clinical Pharmacy Collaborative (PSPC) Live Satellite Broadcast of Learning Session #3, various speakers. HNRT Aresty Conf. Ctr. Info: (323) 442-1393

Thursday, May 7

Noon. “Clostridium Difficile Colitis: From Basic Research to Bedside,” Harry Pothoulakis, UCLA. HMR 100. Info: (323) 442-1283

Noon. “HIV and Women – Current Topics,” Various speakers. NOR 1315. Info: (323) 865-0343

Friday, May 8

8:30 a.m. “Urokinase, Plasminogen Activator Inhibitor-1 and Vitronectin – Novel Roles at the Intersection of Coagulation and Inflammation,” Edward Abraham, Univ. of Michigan. GNH 11-321. Info: (323) 226-7923

9 a.m. CORC Team Seminar. “Non-Alcoholic Fatty Liver Disease,” Frank Sinatra, USC. CSC 250. Info: (323) 442-2637

Monday, May 11

Noon. “Case Discussion: Acid/Base Disorders,” Elaine Kaptein, USC. GNH 4420. Info: (323) 226-7337

Wednesday, May 13

Noon. “Prostatic Cancer and Treatment,” Eila Skinner, USC. GNH 4420. Info: (323) 226-7337

Thursday, May 14

Noon. “Epigenetic Regulation of Hepatic Wound-healing and Fibrosis,” Jelena Mann, Univ. of Washington School of Medicine. MCH 156. Info: (323) 442-3121

Friday, May 15

8 a.m. CHLA Grand Rounds. “Partnering with Families—Principles of Family-Centered Care,” Rev. Dagmar Grefe, USC, and Patti Woods, CHLA. CHLA Saban Research Auditorium. Info: (323) 361-2935

9 a.m. USC Childhood Obesity Research Center. “The Neurobiology of Self-Control,” Antonio Rangel, Caltech. CSC 250. Info: (323) 442-2637

Monday, May 18

Noon. “Late Medical and Surgical Complications Post-Transplant,” Miroslaw Smogorzewski, USC. GNH 4420. Info: (323) 226-7337

4 p.m. “Research in Progress,” Jacob Ahdoot, USC. GNH 4420. Info: (323) 226-7337

Tuesday, May 19

Noon. Cancer Center Grand Rounds and Poster Session. NOR 7409. Info: (323) 865-0801

Wednesday, May 20

Noon. “Vascular Access,” Sue Hanks, USC. GNH 4420. Info: (323) 226-7337

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 eblaauw@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.



Photos/Jon Nalick



STUDENTS SHOW OFF SCIENCE SKILLS—Students from schools surrounding USC’s Health Sciences Campus participated in the ninth annual USC-HSC Science Fair, held April 24, on Harry and Celesta Pappas Quad. Classes from Griffin Avenue Elementary, Murchison Street Elementary and Sheridan Street Elementary (left) displayed science exhibits they created following weekly tutoring sessions on the scientific method from Keck School of Medicine students.

Above, Keck School student Lindsey Wakeham-Miller discusses the results of a science project on heart health her students completed. She said later that the event “really showed how much they love science—and that’s really rewarding.”

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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