



Jon Natlick



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**Trio Ellas spice up Cinco de Mayo** — The Health Sciences Campus celebrated Cinco de Mayo with live music and traditional Mexican food at Harry and Celesta Pappas Quad on May 5. The event, sponsored by the Latino Medical Student Association of Keck School of Medicine, featured a live music performance by the Grammy-nominated Trio Ellas, whose members are USC graduates. Above, Trio Ellas — (from left) violinist Suemy Gonzalez, guitarrón-player Nelly Cortez and guitarist Stephanie Amaro — play for the lunchtime crowd. At left, students, staff and faculty line up for Mexican food in the quad.

## Broad Foundation's \$2 million gift advances stem cell research at USC

By Cristy Lytal

Albert Einstein once said, “A person who has not made his great contribution to science before the age of 30 will never do so.” To ensure that young scientists have the opportunity to make their marks, the Eli and Edythe Broad Foundation has given a \$2 million gift to The Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC.

The gift will establish a series of Broad Fellows, exceptional senior postdoctoral researchers at the transition point to starting their own laboratories. It will also support core research facilities and innovative projects at USC, home to one of only two dedicated university stem cell research centers in Los Angeles.

“This generous gift ensures that USC’s stem cell research center will continue to attract the best and brightest emerging talent, and encourages their pioneering work as they transition into the next stage of their careers,” said Andy McMahon, PhD, FRS, director of The Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at USC. “The fresh views that come from younger scientists have always been the lifeblood of innovation.”

To nurture the next generation of star scientists, the gift provides ongoing support for the stem cell center’s state-of-the-art core facilities in imaging, therapeutic screening, flow cytometry, and stem cell isolation and culture — which also benefit researchers across the university.

The gift also enables strategic investments in the innovative research projects that will become tomorrow’s clinical advances in regenerative medicine.

The Broad Foundation’s generous investment comes at a critical time, when government research dollars for young researchers are in short supply. In this tough climate, the gift will ensure USC remains a destination for the next generation of pioneers in regenerative medicine and stem cell research. This will benefit not only the university and its young researchers, but also patients who will reap the rewards of future stem cell-based cures.

Philanthropic leaders in biomedical research as well as many other fields, Eli and Edythe Broad created USC’s stem cell research center with a gift of \$30 million to the Keck School of Medicine of USC in February 2006.

A renowned business leader who built two Fortune 500 companies over a 50-year career, Eli Broad is the founder-chairman of both SunAmerica Inc. and KB Home (formerly Kaufman and Broad Home Corporation). He is also a member of the Board of Overseers of the Keck School of Medicine of USC.

“We believe that the promise of stem cells — and the research underway at USC — is limitless,” said Daniel Hollander, MD, director of scientific and medical research initiatives at The Broad Foundation. “For us, this is an opportunity to advance essential research in hopes of finding new treatments for the many diseases that are still untreatable.”

## Rodríguez joins USC to advance female pelvic medicine

By Leslie Ridgeway

Larissa V. Rodríguez, MD, a noted expert in female pelvic medicine with more than 15 years of clinical and research experience in urology, joined Keck Medicine of USC on May 1.

Rodríguez joins an elite group of faculty urologists at the USC Institute of Urology as professor of urology at the Keck School of Medicine of USC. She serves as vice chair (academics) at the Catherine and Joseph Aresty Department of Urology at the Keck School, director of Female Pelvic Medicine and Reconstructive Surgery (FPMRS) at Keck Medicine of USC – Beverly Hills and director of the FPMRS Fellowship at the Keck School of Medicine.

Rodríguez came from the University of California, Los Angeles (UCLA), where she was co-director of female pelvic medicine and reconstructive surgery and professor of urology.

Her goal is to help establish USC as a beacon of hope to women who feared they had nowhere to turn for pelvic floor problems, including incontinence, urinary frequency, bladder pain and

vaginal prolapse. According to the American Urogynecological Society, one in three women suffer from pelvic floor dysfunction, a range of symptoms including bladder and bowel problems as well as pelvic pain.

“Women are affected by a number of pelvic conditions that devastate their quality of life but are seldom discussed by the public, community or even physicians,” said Dr. Rodríguez. “Many suffer in silence, thinking this is part of normal aging. It does not have to be that way. There are numerous thera-



Larissa Rodríguez

pies that can improve or cure these conditions, allowing women to lead normal and productive lives. I am excited to join Keck Medicine and the USC Institute of Urology, where the vision, resources and talent exist to bring urologic care to the forefront in the nation.”

Rodríguez will continue her research with a goal of improving treatment options for women. Current research projects include developing new minimally invasive surgical techniques to treat prolapse, incontinence and bladder disorders.

## USC expands Beverly Hills satellite office with more space, new services

By Tania Chatila

Keck Medicine’s presence in the Beverly Hills community just got a little bigger.

The health system celebrated the grand opening of its expanded Beverly Hills satellite office at 9033 Wilshire Blvd. last month, which now spans three floors and more than 15,000 square feet. The April 30 event was attended by local physicians and community representatives.

“For our organization, this is a rebirth of our Beverly Hills office as we work to provide our patients with better, more convenient services, accessible right in their backyards,” said Scott Evans, PharmD, MHA, chief executive officer of Keck Hospital of USC and USC Norris

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Lisa Brook Photography

From left at the grand opening: Scott Evans, Stephen Gruber, Carmen Puliafito and Thomas Jackiewicz.

# Student's online videos help demystify federal grants

By Paul Karon

When Jamaica Rettberg, a PhD candidate in the Department of Neuroscience in the Dornsife College of Letters, Arts and Sciences, decided to apply for a research fellowship from the National Institutes of Health (NIH), she knew it wouldn't be easy. The applications are famously complicated and take most people months to complete.

But by the time she finished the process, she would make it much easier for those who followed by making a video guide that even NIH staffers call, "a wonderful resource."

Rettberg was applying for what is known as an F31, an NIH National Research Service Award (NRSA), intended to help doctoral students get additional training in fields related to their core focus. For Rettberg, who studies risk factors and therapies for Alzheimer's disease, the F31 would not only support her doctoral research, but would also enable her to get a Master's in Regulatory Sciences from the USC School of Pharmacy. She felt that a deeper understanding of the regulatory aspects of drug development would enhance the quality and efficiency of her research.

When she started working on the NRSA grant, Rettberg made a point to find out everything she could about the application process. She took a seminar in the neuroscience department about NRSA grants and applications, sought advice from



Jamaica Rettberg, USC PhD candidate, appears in a video series she created to help explain how to apply for NIH grants.

mentors and colleagues who had been through the process, and spent many days on her own parsing dozens of questions, running down required documents and information, drafting statements about research goals, and more.

Rettberg finally submitted her application, and in 2012 the NIH granted her the prestigious Ruth L. Kirschstein National Research Service Award.

That might have been the end of Rettberg's application saga, had not Cecilia Patino-Sutton, MD, MEd, PhD, director of education for the Southern California Clinical and Translational Science Institute Education, Career Development, and Ethics program, asked her to give a presentation about

the application process for other pre-doctoral students in the TL1 program. The SC CTSI's TL1 program provides unique professional training for graduate students aspiring to careers as clinical and translational researchers.

Rettberg was happy to help. Using her own application forms as examples, she took fellow students step-by-step through the application process, from minute but important matters of font size and type to pointers on writing effectively about research goals. "It's much more helpful when you're hearing from a peer who has gone through the process recently and understands the sticking points," she said.

Rettberg's presentation was so well received that Patino-Sutton suggested she make it available beyond the USC community — by turning it into a series of eight short online videos, titled, "So You Want to Apply for an NRSA," since no such tutorial for the NRSA grants existed.

The response to the videos was immediate and news of the series spread even to the NIH, where officials were similarly impressed — and welcoming. "This is the first tutorial focused on NRSA's by someone who has been through that process that I have ever seen, and it was excellent," said Molly Wagster, Rettberg's NIH program officer. "It is a wonderful resource for applicants."

The video series is online at [tinyurl.com/k5u3ar3](http://tinyurl.com/k5u3ar3).

## Rancho Los Amigos Foundation awards USC physical therapy professor its top honor

By Beth Newcomb

The Rancho Los Amigos Foundation honored Lucinda Baker, associate professor of biokinesiology and physical therapy at the Ostrow School of Dentistry, with the Amistad Award during the 28th annual Amistad Gala at the Westin Hotel in Long Beach on March 8.

The Rancho Los Amigos Foundation is a nonprofit organization that raises funds to support research, education, equipment, and patient care at the Rancho Los Amigos National Rehabilitation Center.

The Amistad Award — the highest honor the foundation can bestow — recognizes an individual who has demonstrated an extraordinary commitment to serving Rancho

Los Amigos and its patients. Since the late 1970s, Baker has conducted research at Rancho Los Amigos within the Rehabilitation Engineering Center.

Her research focuses on electrical stimulation for wound healing for patients with spinal cord injury and diabetes, as well as rehabilitation of sensory and motor deficits for patients with stroke and traumatic brain injury.

She is a primary voice on electrical stimulation, publishing many scientific articles and, along with co-authors from Rancho Los Amigos, writing a leading book on the subject, *Neuro-Muscular Electrical Stimulation – A Practical Guide*.

In addition to her prolific research career, Baker

has earned a reputation as a trusted mentor to many clinicians at Rancho Los Amigos. She advises therapists in the Speech and Communication Disorders, Physical Therapy, and Occupational Therapy departments on using electrical stimulation in rehabilitation.

Last year, she was honored for her work with the Rancho Lifetime Achievement Award.

"Her research has directly benefitted Rancho patients both as participants in her studies and as recipients of improved patient care influenced by her research results and her long-standing commitment to teaching and mentoring Rancho's therapists," said Sara Mulroy, director of the Pathokinesiology

Laboratory at Rancho.

James Gordon, chair of the Division of Biokinesiology and Physical Therapy, praised Baker for her long history of science and service at both USC and Rancho. "She is an extraordinary individual, and we are all inspired by her," Gordon said. "She is a

very giving, service-oriented person. We're thrilled that Rancho is recognizing her in this way."

Baker said maintaining close relationships with both USC and Rancho has greatly enriched her career, providing her with valuable mentorship, research and clinical opportunities.



From left are: Vladimir Zelman, professor and co-chair of the Department of Anesthesiology; Philip Lumb, chair of the Department of Anesthesiology; Tami and Arie Warshel; and Carmen A. Puliafito, dean of the Keck School.

## Nobel Laureate presents Zelman Lecture

The Keck School of Medicine's Department of Anesthesiology hosted the 4th Annual Vladimir Zelman, MD, PhD, Distinguished and Endowed Lectureship on April 17, featuring a lecture by 2013 Nobel Laureate Arie Warshel, professor of chemistry at the USC Dornsife College of Letters, Arts and Sciences.

Warshel presented his lecture, "Computer Simulations of Biological Functions," to a packed audience at Aresty Auditorium and described his scientific journey to bridge the disciplines of molecular and quantum chemistry in a manner then undiscovered.

His work and that of his collaborators opened the door to today's increasingly complex silica experiments that unlock the actions of enzymes and help define muscle contraction.

The lecture was endowed by the Guilford and Diane Glazer Foundation earlier this month.

## HSC News

## Next Issue: May 30

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## Keck School researcher imagines intestinal cells that can make insulin

By **Cristy Lytal**

For Senta Georgia, PhD, stem cell research offers a window into much more than the biology of pancreatic cells and diabetes.

“Molecular biology is elegant,” said Georgia, principal investigator at The Saban Research Institute of Children’s Hospital Los Angeles and assistant professor at the Keck School of Medicine of USC. “And

what really moves me is that it’s simple, and it’s the underpinnings of how life actually works. It’s almost a spiritual insight into how life is put together, how it works.”

Georgia always wanted to be a scientist — although her initial interests were much bigger than molecules. As the eldest of three children growing up in the army town of Pemberton, New Jersey, she



Senta Georgia

dreamt of becoming a paleontologist and remembers building a papier-mâché dinosaur with her mother.

Her aspirations shifted to archeology after she learned about ancient Egypt. By sixth grade, whales and marine biology captured her imagination, but she “couldn’t put that into a broader social context for curing disease or helping people,” she said. “I also figured out that I’m

deathly afraid of the idea of jumping into the ocean!”

She discovered genetics when her ninth-grade class took a field trip to a company that was developing sequencing technology to advance the human genome project, and this inspired her interest in molecular biology. She majored in biological sciences and minor in ethics in society at Stanford University.

After graduation, she worked as a research technician in the lab of Anil Bhushan, PhD, who was studying pancreatic development at Children’s Hospital Los Angeles. She also worked with Bhushan as a PhD student and eventually followed him to UCLA. She completed her dissertation about the differentiation, self-renewal and regeneration of beta cells — pancreatic cells that produce, store and release insulin, which lowers blood sugar concentrations.

She accepted a postdoctoral fellowship and assistant adjunct professorship at UCLA’s Larry L.

Hillblom Islet Research Center. Over time, she became increasingly interested in questions of how undifferentiated cells become and remain beta cells.

Beta cells don’t replicate easily: current estimates are that they last between five and 20 years. This drove Georgia’s curiosity about intestinal stem cells, which continuously replace themselves. She received a Mentored Research Scientist Development Award (K01) from the National Institutes of Health (NIH) and studied endocrine cell differentiation in the intestines with UCLA’s Martín Martín, MD.

This inspired the project that currently occupies her lab at Children’s Hospital Los Angeles: trying to induce intestinal stem cells to make insulin. The ultimate objective is to use these cells to treat both Type 1 and Type 2 diabetes.

“We are interested in helping people,” said Georgia, “and so that means a lot.”

## Keck Medicine of USC among first to offer bronchial thermoplasty for asthma

By **Alison Trinidad**

A new procedure at Keck Medicine of USC may give people with severe, uncontrolled asthma a much-needed breath of life. The medical center is among the first in the United States to offer bronchial thermoplasty, an outpatient treatment that provides long-lasting control of this chronic disease.

USC was one of 39 participating sites in a landmark clinical trial of the Alair Bronchial Thermoplasty System that showed a 32 percent

reduction in asthma attacks after treatment. Approved by the U.S. Food and Drug Administration (FDA) in 2010, the system is the first medical device that uses radiofrequency energy to treat severe and persistent asthma in select patients ages 18 and older.

“Patients who suffer from persistent, uncontrollable asthma have few treatment options to adequately manage their disease,” said pulmonologist Richard Barbers, MD, professor of clinical medicine at the

Keck School, and principal investigator of the clinical trial at USC. “There is no cure for the disease, but bronchial thermoplasty has been shown to improve a patient’s quality of life by reducing asthma attacks and asthma-related hospitalizations and emergency room visits.”

The airways of people

who have asthma can become swollen and narrowed, making breathing difficult. The Alair system, manufactured by Boston Scientific, uses mild heat to reduce the thickness of smooth muscle in the airways, improving a patient’s ability to breathe. It is a minimally invasive procedure that involves

insertion of a small tube into the patient’s lungs via the nose or mouth. To benefit, patients will need to undergo three, hour-long sessions over the course of two months to target different areas in the lungs. Each session is done under moderate sedation, and the patient generally returns home the same day.

## BEVERLY HILLS: Expansion aims at building stronger ties to local physicians

Continued from Page 1

Cancer Hospital. “This is an opportunity to expand both our service options and amenities to better fit the needs of our Westside patient and referring physician populations.”

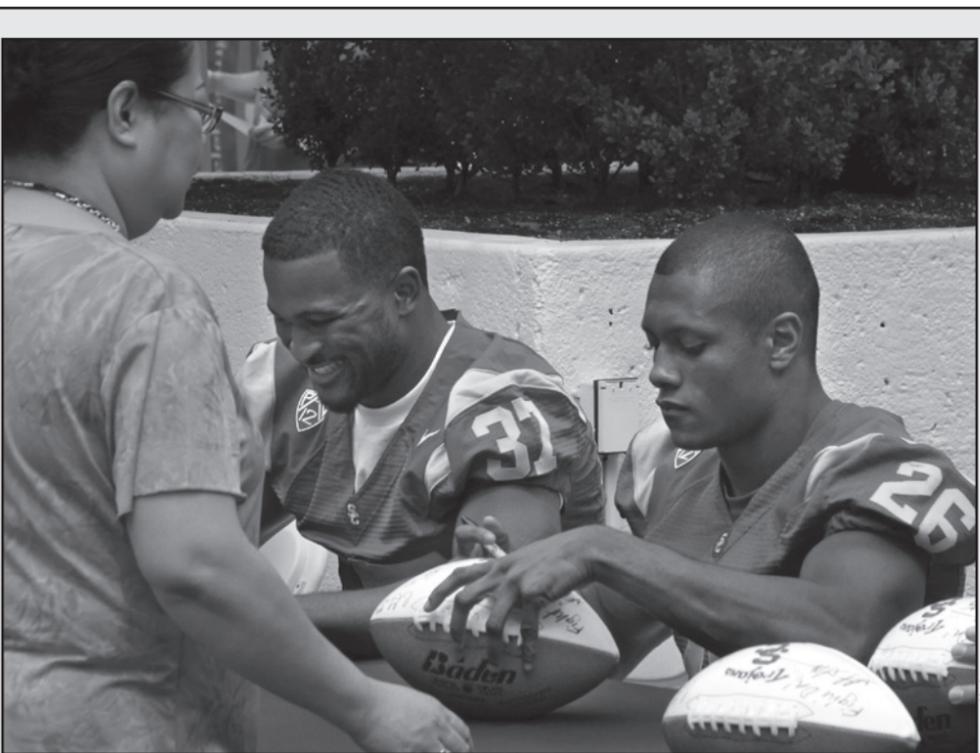
What started out as a single ophthalmology practice four years ago has now turned into a multidisciplinary satellite offering pain management, ophthalmology, dermatology, otolaryngology, sports medicine, urology, laboratory and full imaging services. The space also boasts a spine center, bringing together some of the best neurosurgery and orthopedic surgery experts in the region to offer comprehensive, multidisciplinary spine care services.

Also included are a dedicated conferencing center, and plans are being completed now for an additional 5,000-square-foot of space that will be dedicated to primary care, including geriatric medicine and diabetes services.

“We are very proud to have nearly 20 Keck Medicine of USC’s renowned physicians offering their expert services to the Beverly Hills community,” said Carmen Puliafito, MD, MBA, dean of the Keck School of Medicine of USC. Puliafito was the visionary force behind the opening of Keck’s first Beverly Hills practice.

Puliafito said the expansion represents efforts to build stronger, more collaborative partnerships with local physician colleagues who have long established trusted medical practices in the area. He stressed the importance of working side by side with local physicians to become a destination for specialty care in the Westside community.

“As we continue to recruit specialists in the area of urology, female pelvic reconstruction, and more, we also will continue to work closely with our local colleagues to ensure continuity of care and close working relationships that will best benefit our patients,” he said.



Jon Nalick



### HSC rallies round the USC football team

— The USC Trojan Marching Band, football players, song girls and spirit leaders led a lunchtime rally on April 25 at Harry and Celesta Pappas Quad for an enthusiastic crowd. Above, USC football players Javorius Allen and James Toland IV autograph posters and footballs. At left, Song girls, spirit leaders and members of the band leaders pose for one of many cell phone photos.

# Calendar of Events

## Monday, May 19

**7 a.m.** Office of Emergency Management & Business Continuity Seminar. “Disaster Preparedness: What Should Go in Your Emergency Kit,” Robert C. Vance III, USC. Keck Hospital Cardinal Room. Info: Robert Vance III, (323) 442-9915, robert.vance@med.usc.edu

**Noon.** KSOM Research Seminar Series. “Novel Insight into Innate Immune Restriction of Alphaviruses and Flaviviruses,” Michael S. Diamond, Washington University School of Medicine. Aresty Auditorium. Info: Mary Jane Chua, (323) 442-7732, maryjane.chua@med.usc.edu

## Tuesday, May 20

**10 a.m. – 2 p.m.** Keck Hospital of USC Guild Luncheon. “Cough, Cough! Hack, Hack! What’s Wrong with Me?” Kamyar Afshar, USC. Info: Valerie Weiss, (626) 449-2746, valkw@yaho.com. RSVP by May 13 to Carol Corral, (323) 254-0600, russek1@att.net. Tickets: \$50.

**11 a.m.** Disaster Preparedness “Bring Your Lunch and Learn” Seminar. “Disaster Preparedness: What Should Go in Your Emergency Kit,” Robert C. Vance III, USC. Keck Hospital Cardinal Room. Info: Robert Vance III, (323) 442-9915, robert.vance@med.usc.edu

## Wednesday, May 21

**8:30 a.m.** Pulmonary, Critical Care and Sleep Medicine Lecture. “Post-Cardiac Catheterization Pharmacotherapy Management,” David Shavelle, USC. IRD 732. Info: Elva Rubio, (323) 226-7923, elva.rubio@med.usc.edu

**Noon.** The Saban Research Institute of CHLA Seminar. “Decoding Mysterious Diseases by Clinical Genome Sequencing,” Kai Wang, USC. 4661 Sunset Blvd., Los Angeles. Parking at 4650 Sunset Blvd. Info: Harleen Gill (323) 361-8626, hgill@chla.usc.edu, CHLA.org

## Thursday, May 22

**Noon.** Internal Medicine Grand Rounds. “Medical Grand Rounds,” Nima Motamedi, USC. 2051 Marengo St., IPT-Conference Room-B, Los Angeles. Info: Sandra Salazar, (323) 226-7556, sambriz@dhs.lacounty.gov

**Noon.** USC Research Center for Liver Diseases Seminar. “Erasure of DNA Methylation in NASH/ASH Diseases,” Douglas Feldman, USC. Hastings Auditorium. Info: Dolores Mendoza, (323) 442-1283, dmmendoza@usc.edu.

## Friday, May 23

**8:30 a.m.** USC Center for Lung Biology Research Seminar. “Therapy for Shock: Bloodletting to EGDT, Have We Really Made Progress?” J.A. Kellum, University of Pittsburgh. IRD 732. Info: Elva Rubio, (323) 226-7923, elva.rubio@med.usc.edu

## Tuesday, May 27

**6:30 p.m.** Keck Medicine of USC Lecture. “Health Matters — My Aching Back: Current Management of Neck and Back Pain,” John Liu, Mark J. Spoonamore and Jeffrey Wang, USC. University Club of Pasadena, 175 North Oakland Ave., Pasadena. Info and RSVP: Monica Padilla, (323) 442-2805, amayam@usc.edu, tinyurl.com/mgl8yvez

## Wednesday, May 28

**8:30 a.m.** Pulmonary, Critical Care and Sleep Medicine Lecture. “Surgical Management Options of Refractory Cardiogenic Shock,” A. Hackman, USC. IRD 732. Info: Elva Rubio, (323) 226-7923, elva.rubio@med.usc.edu

**Noon.** USC Women in Management Luncheon. Speaker: David B. Agus, USC. NTT 7409. Info and RSVP: Ginger Mayerson, (323) 227-1092, mayerson@usc.edu, www.uscwim.org/calendar.asp. \$15 members; \$18 non-members.

**6 p.m.** USC Verdugo Hills Hospital Lecture. “Health Talk: Understanding Sports Injuries and Concussions,” Loren Geller and Grigor Harutunian, USC. Fourth Floor - Council Room, 1812 Verdugo Blvd, Glendale. Info and RSVP: (818) 952-2213, USCvhh.org/Health-Talk

**Notice:** Calendar submissions must be received at least 10 days before an issue’s publication date to be considered. Please note that timely submission does not guarantee an item will be printed. Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number or email address for information.

Submit calendar items at [tinyurl.com/calendar-hsc](http://tinyurl.com/calendar-hsc).



Jon Nalick

**Oh, baby! USC Fertility holds biannual Baby Reunion Picnic** — USC Fertility held its biannual baby reunion picnic at Lacy Park in San Marino on May 3, celebrating the recent arrivals of new family members made possible by USC expertise. More than 300 guests attended the event which featured food and games. Above, left, Jennifer Armstrong, MD, a Keck School of Medicine alumna, and her 17-month-old son pause for a photo with Richard Paulson, director of USC Fertility and chief of the Division of Reproductive Endocrinology and Infertility at the Keck School. Over the past 27 years, more than 3,000 babies have been born as a result of the different treatment options offered at USC Fertility.

## Study yields new insight into how skin heals

By Paul Karon

A researcher at the Keck School of Medicine of USC has shown that a previously unsuspected but common protein in the human body can help skin injuries heal, contradicting decades of conventional wisdom about the biology of tissue repair as well as potential treatments.

The pilot study showed that a natural protein isolated from secretions by injured skin cells, called Heat shock protein 90alpha (Hsp90a), significantly improves the healing of wounds on diabetic skin, said principal investigator Wei Li, PhD, a professor in the Department of Dermatology.

This preclinical research, funded by the Southern California Clinical and Translational Sciences Institute, helped Wei obtain a major new grant from the National Institutes of Health (NIH) to continue the research in larger animals and human subjects.

In diabetics, the elderly or others with compromised health, wounds can remain open for months or years, requiring constant and expensive care to prevent infection. Some \$10 billion a year is spent annually to provide supportive wound treatment for diabetic patients alone.

Although familiar enough to everyone who has ever scraped a knee, the skin’s ability to repair itself is actually one of the most complicated and mysterious processes in human biology, said Wei. Because the process is incompletely understood, efforts to develop medicines to encourage healing have been largely unsuccessful.

Wei didn’t believe growth factors were the missing link in the

early and crucial phase of wound healing. His research identified key limitations for growth factor therapy and demonstrated why GF-based medication failed to help most patients.

It took Wei three years to identify and focus on Hsp90a, which is abundant throughout the body. In fact, cells contain several hundred times more Hsp90a than any other protein.

“No one had a good explanation for why there is so much Hsp90a in every cell, from the top to the bottom of the body,” said Wei. “If it’s everywhere, we figured it had to have some important purpose — Mother Nature doesn’t waste her energy.”

Wei believes Hsp90a is instead the driving force to “roof” damaged skin in the early stages of healing by shuttling skin-rebuilding epidermal and dermal cells to the site of a wound.

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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.