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UCLA DERMATOLOGY

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The Emergence of Lasers in Dermatology

UCLA Dermatology is at the forefront of laser technology as it continues to evolve

It's been more than 20 years since Dr. Gary P. Lask, Clinical Professor and the Director of Dermatologic Surgery Training Program at UCLA Dermatology , first headed one of eight investigation sites at Jefferson Medical College for the original pulsed dye laser, a now common device used to treat vascular birthmarks such as port-wine stains and hemangiomas, skin redness due to rosacea, as well as scars or stretch marks that result from broken blood vessels.

"It was probably the initial breakthrough in lasers within dermatology," Dr. Lask

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Letter from the Chief

Dear Friends,

As we start the new academic year and welcome new residents, fellow, trainees and faculty into UCLA Dermatology, we look forward to continue to face challenges, particularly in regard to the budget cuts, and enhance our programs in research, education, and clinical service.

On the research front, Dr. Roger Lo, Associate Professor in Residence and Director of UCLA's melanoma clinic, was honored with an award for Outstanding Achievement in Cancer Research by the American Association for Cancer Research (AACR). My lab recently published our work in the journal Science demonstrating that certain cunning bacteria can pretend to be viruses when infecting humans, allowing them to hijack the body's immune response so that they can hide out, unhindered, inside our cells. We are continuing to investigating how bacteria can manipulate the immune system in human infections. Dr. Jenny Kim's laboratory continues to study skin immunity and defense mechanisms to advance applied sciences in dermatology. Her lab's work on the effects of gene regulation in acne and the potential role retinoids and vitamin D play in this regulation will be published in the Journal of Investigative Dermatology.

On the clinical front, we continue to seek new ways to improve our ability to provide and deliver care to our patients. We have expanded our Westwood clinical location featuring the latest in laser technology in our new office located at 100 Medical Plaza. Our Acne Rosacea and Aesthetics (CARA) clinic, directed by Dr. Christina Kim and Dr. Jenny Kim, continue to seek new ways to offer therapies that can improve skin while reducing side effects. We continue to expand our clinical practice and adding new faculty clinician educators.

Our education program remains one of the very top in the country. We had Dr. Kevin Cooper, an internationally recognized dermatologist, author and professor, as our awardee of the 2013 Victor D. Newcomer lectureship. Established in 1988, the Victor D. Newcomer Lectureship brings renowned leaders in Dermatology to share their knowledge and research and enhance the division's education and research mission. Our residents and faculty hosted the Los Angeles Metroderm in May and presented community dermatologists and trainees with interesting cases and interactive discussions. We are proud of our graduating class of 2013. Dr. Trenton Custis and Dr. Cameron Chestnut will begin their training in Procedural Dermatology Fellowship Program in UC Davis and UCLA respectively. Dr. Philip Scumpia will begin his Dermatopathology Fellowship at UCLA. Dr. Nima Gharavia will start his career as dermatology practitioner in Southern California.

I remain inspired by the enthusiasm, intellectual curiosity, and diversity of our trainees, faculty, patients, and community and renew my commitment to the continual excellence of UCLA Dermatology's ongoing research, excellent clinical care, and outstanding quality education.

Robert L. Modlin MD

Robert L. Modlin, MD

Klein Professor of Dermatology,
Distinguished Professor of Medicine and
Microbiology, Immunology and Molecular Genetics,
Chief, Division of Dermatology,
Vice Chair for Cutaneous Medicine and Dermatological Research,
Department of Medicine

Lasers in Cosmetic Dermatology

(Continued from cover)
recalls. "It was able to specifically target blood vessels and vascular lesions without damaging the surrounding tissue." Prior to the pulsed dye laser, laser treatment of vascular marks were considered risky for adults due to burning and scarring and altogether too dangerous for children.

The pulsed dye laser marked a prominent shift in dermatologic technology that continues to evolve today with new generations of lasers being developed with minimized risk and recovery time for a wide variety of skin conditions.

UCLA's Dermatologic Surgery and Laser Center is at the forefront with a panoply of state-of-the-art lasers being used to treat patients and a team of dermatologists who, like Dr. Lask, play prominent roles in the development of modern lasers. "Some of the faculty here [at UCLA] have been primary investigators for the technology in the past," says Dr. Lask. "And so we have long term experience and we're frequently involved in consulting for companies who create and develop this new technology."

Soon after the introduction of the pulsed dye laser, the Q-switched laser similarly revolutionized the treatment of pigmented skin conditions like tattoos or freckles caused by sun damage, while the non-ablative fractional resurfacing (or Fraxel) laser significantly improved the treatment of skin conditions caused by aging, sun damage, acne, and surgical scars. Fraxel lasers have become a popular solution in laser treatment for skin rejuvenation due to its ability to resurface skin more selectively than previous lasers.

Today, hair removal lasers are modifications of the Q-switched lasers that are used to target the pigments in skin by targeting the pigments in hair follicles. By targeting the pigment in the hair follicle, lasers can damage the hair follicle to prevent hair from growing. For serious ingrown hair conditions that can result in chronic breakouts and scarring or keloid formation, the advancement of hair removal laser technology is significant.

Both the Fraxel laser and Q-switched laser are used at UCLA dermatology clinics, among other state-of-the-art lasers.

Patrick Lee, MD, Clinical Professor and Director of the Dermatologic Surgery Residency Education, sees first hand how lasers have changed cosmetic dermatology since the nineties. "Lasers have evolved to very high technology where a lot of the error and risk have actually been compensated for with technology that's safe for the most part," he explains. "We've been able to treat cosmetic conditions for the past 20 years that we couldn't do before without causing scarring. In terms of the ability for us to offer good cosmetic outcomes for patients conservatively without a lot of down time, I think lasers have revolutionized the ability for us to do it safely."

In the area of tattoo removal, Dr. Lee says the brand new PicoSure is a prime example. PicoSure allows for more selective targeting and cuts exposure time significantly compared to older lasers. It may be able to improve treatment for other pigmented conditions, as well, but those possibilities are still under investigation.

As of this summer, UCLA is one of two dermatological centers in Los Angeles with a PicoSure laser. "It's a hot off the press type of laser. It's the most cutting edge technology for treating tattoos," Dr. Lee adds.

Laser technology in dermatology continues to evolve with exciting prospects in the works. Dr. Lask predicts the emergence of better devices for safer and simpler skin rejuvenation and tattoo removal among other advances. "We're evolving in a big way," he says. "The next step in all these areas is more efficacy, less treatment sessions and, even though we have a high safety profile now—which is wonderful—our goal is to obtain an even higher safety profile."

For Dr. Lee, the "holy grail" of laser technology lies in a more effective and predictable treatment of fat. "All we can tell patients is that we're working on it.

That's a prime target that we're looking at. We also want to find lasers or technology that can effectively tighten the skin and firm it up, without burning it," he says.

While dermatologists await these exciting advancements, UCLA's Division of Dermatology continues to offer patients the very latest laser technology in addition to the very best in patient care by a distinguished team of physicians. To date, UCLA's dermatology clinics utilize 11 state-of-the-art lasers for both medical and cosmetic dermatologic treatments with 4 more expected at the new Westlake cosmetic center.

"Lasers have made an invaluable impact on dermatology," said H. Ray Jalian, MD, Health Sciences Clinical Instructor on faculty. "Many of the treatments we perform with ease with lasers were nearly impossible without them. This has significantly improved the quality of life for a countless number of people."

For more information on laser technology and treatments that are available at UCLA, call (310) 825-6911.

Technology Offers New Alternatives to Acne Treatment

Until recent years, the medical standard for treating acne—the most common skin disorder in America—was isotretinoin, a potent prescription drug with serious side effects, otherwise known as Accutane. Today, cutting edge technology is giving dermatologists less abrasive alternatives to systemic acne therapies; UCLA's Clinic for Acne Rosacea and Aesthetics (CARA) is embracing that gift.

CARA now offers device-based therapies that can treat acne with fewer side effects than isotretinoin. Photodynamic therapy (PDT) uses levulinic acid, a photosensitizing drug, in conjunction with a blue light source to shrink oil glands. The clinic also utilizes a fractionated laser, which is a resurfacing laser to treat acne scars in addition to other common skin conditions such as wrinkles, blotchiness and pigmentation.

Health Sciences Assistant Clinical Professor Christina Kim MD, who also serves as co-director of CARA, understands that while these light based therapies are not necessarily more effective than isotretinoin, they provide a welcomed alternative for patients who want to stay away from medications with harsh side effects.

"The problem with isotretinoin is the side effects profile," said Dr. Kim. "The real advantage of these light based therapies is that they don't have the same side effects. We have a growing number of patients that choose not to take pills or systemic therapy for acne. This is a nice option for them, where the side effect profile is possibly some discomfort or post-inflammatory hyperpigmentation (or discoloration) after the treatment, but nothing is internal."

The challenge with any new treatment is recognition by insurance providers.

"The real issue is cost," says Dr. Kim, who sees most patients paying out of pocket for light based acne treatments. "These are not considered standard of care because it's still very new technology, so insurance does not pay for it for the most part."

Still, acne patients at UCLA are welcoming the newer treatment options in addition to more conventional treatments that are available. For many, CARA is one of the few places that offer both medical and cosmetic approaches to treating acne and rosacea by utilizing cutting-edge technology and resources in a world-renowned tertiary care center. Dermatologists are also able to work with other specialists through the UCLA medical network such as nutritionists, pediatricians, endocrinologists and plastic surgeons to ensure individualized treatments suited for every patient's age and lifestyle.

The CARA team is also committed their own clinical and research initiatives. The team is currently researching, through clinical trials, the effect of omega-3 on acne and acne therapy, as well as looking at Vitamin D as a topical treatment for acne. They are also developing a mobile device application that helps patients communicate with dermatologists and manage acne via text messaging. The program will increase access to care and limit the need for in-person office visits.

For more information on the division's acne initiatives and care, as well as how to participate in CARA's clinical trials, please visit www.derm.med.ucla.edu or call (310) 825-6911.

Christina Kim, MD
Health Sciences Assistant Clinical Professor and Co-Director of CARA

Newcomer Lectureship

Kevin D. Cooper, MD

Kevin D. Cooper, MD, an internationally recognized dermatologist, author and professor, was awarded the 2013 Victor D. Newcomer, MD Endowed Lectureship by UCLA's Division of Dermatology.

He became the seventh addition to a distinguished list of past honorees. On April 9, over seventy attendees including faculty, residents, fellows and students attended the lecture entitled, "Immunomechanisms of Psoriasis and its Vascular Comorbidies" at the Ronald Reagan UCLA Medical Center.

Dr. Cooper is the Chair of Case Western Reserve University's Department of Dermatology. He also currently serves as Director of both the National Institute of Arthritis and Musculoskeletal and Skin Diseases Research Center and the Murdough Family Center for Psoriasis at Case Western Reserve University.

Among a long list of awards and honors, Dr. Cooper received the American Skin Association Achievement Award in 2010 for his contributions to the understanding and treatment of psoriasis. He has also received the Marion B. Sulzberger Memorial Award by the American Academy of Dermatology and has been the honoree of several lectureships globally including the International Health Professional of the Year from the International Biographical Centre of United Kingdom and the Dohi Lectureship from the Japanese Dermatologic Association in Fukuoka, Japan. Dr. Cooper has published over 300 articles and chapters, as well as authored and co-authored various textbooks on dermatology and auto-inflammatory mechanisms.

Paul C. Levins, MD, Health Sciences Associate Clinical Professor, who was among the lecture attendees, recognized Dr. Cooper's achievements as a skilled clinician and academic role model, who mentors medical students and dermatology residents, particularly for championing the first biological agent approved to treat psoriasis.

"Dr. Cooper is an internationally acclaimed dermatology researcher with an interest in the immunology of psoriasis and an outstanding record of achievement in translational medicine," said Dr. Levins.

Established in 1988, the Victor D. Newcomer, MD Endowed Lectureship is an annual lecture series that brings renowned leaders in dermatology to UCLA to share their knowledge and research, as well as enhance the Division of Dermatology's education and research mission. It serves as a tribute to the late Dr. Newcomer's distinguished career, 40 years of which he served as Clinical Professor of Dermatology at UCLA. In his lifetime, he received numerous honors and awards for his research and work, as well as served as a member of various medical boards, committees, foundations and associations. Dr. Newcomer is most known for his dedication, passion and tireless involvement as a health professional, educator, and mentor.

The Newcomer Endowed Lectureship continues annually thanks to the help of tax-deductible donations. If you would like to help perpetuate Dr. Newcomer's legacy, as well as the Division's education and research mission through a tax-deductible donation, please visit www.giving.ucla.edu/dermatology.

WHAT'S NEW

New Cosmetic Facility Unveiled in Westwood

In March, UCLA's Division of Dermatology unveiled the latest addition to its ongoing expansion—a brand new, 800-square-foot cosmetic dermatology facility. Located in Suite 216 at 100 Medical Plaza, the fully functional facility features state-of-the-art technology and specialized patient care for a wide range of cosmetic dermatological procedures including Botox, chemical peels, cosmetic fillers, photofacial and light-source rejuvenation, microdermabrasion and sclerotherapy,

The new Westwood facility also features the latest in laser technology for hair or tattoo removal and resurfacing. Among the state-of-the-art technology on site, patients will have access to PicoSure, the first and only aesthetic picosecond laser used for the safe and effective removal of tattoos and benign pigmented lesions. PicoSure delivers ultra-short bursts of energy to the skin in trillionths of a second, which results in more effective and less frequent treatment. A picosecond pulses is 100 times shorter than nanosecond technology, which most lasers utilize. UCLA's Division of Dermatology is one of only two clinics in the LA area that offer the recently FDA-approved laser.

For Jenny Kim, MD, PhD, associate director of cosmetic dermatology, the new clinic is providing what many people need in external health just as much as what they need for internal health.

"Skin is an incredibly important organ," says Dr. Kim. "I don't think people realize how important it is to maintain your outer health in addition to your inner health. For the older population, how you look and how you feel about yourself because of it is really part of being healthy. And for younger people, having something like acne that's appearance related affects them so much. It's really satisfying for us to provide [these treatments]."

Currently, UCLA's Division of Dermatology offers three other UCLA cosmetic dermatology locations in Santa Monica, Westlake Village and Thousand Oaks.

For more information on UCLA's cosmetic dermatology, please visit www.derm.med.ucla.edu.

EDUCATION UPDATE

Dermatological Society Meeting Held at UCLA

On May 28, UCLA's Division of Dermatology hosted the Los Angeles Metro Dermatological Society for an educational meeting at the division faculty center. The meeting, which consisted of live patient presentations, guest speakers, interactive discussion panels, histologic presentations and networking, was one of eight educational meetings that occur annually for dermatologists in the Los Angeles area. More than 90 dermatologists attended the event.

Under the direction of Robert L. Modlin, MD, Division of Dermatology Chief and Melvin Chiu, MD, MPH, Health Sciences Assistant Clinical Professor who also serves as president of the LA Metro Dermatological Society, UCLA dermatology residents presented patients in a variety of conditions including familial Mediterranean fever, congenital hemangioma and cutaneous granulomas as seen in combined immunodeficiency syndrome.

"The UCLA residents work hard every year to put together an interesting and educational program for Metro Derm," said Dr. Chiu. "The university-hosted programs are always well attended by Southern California area dermatologists and dermatology residents. The meeting gives the UCLA dermatology residents a great opportunity to present their cases to a large audience and interact with the local dermatology community and other residents."

The LA Metro Dermatological Society is an accredited dermatology association comprised of highly-trained dermatologists in the Los Angeles area. The society, which was formed in 1988 when two LA-based dermatology societies—the Los Angeles Dermatological Society and the Metropolitan Dermatological Society of Los Angeles—merged, provides continuing medical education activities to local dermatologists.

Annual Basic Science Symposium Showcases Current Research

On May 21, UCLA's Division of Dermatology hosted its annual Basic Science Symposium at the California NanoSystems Institute Auditorium. Scholars, residents and distinguished guests heard presentations by seven researchers from the Division of Dermatology. Presentations that highlighted the division's work on the cutaneuous oncology and immunology front included:

Matteo Pelligrini Laboratory

Megan Inkeles presented "Molecular classification and insights into diagnosis and pathogenesis of diseases of the skin: A microarray meta-analysis"

Tatiana Segura Laboratory

Donald Griffin, PhD presented "Photoactive-enzymatic hybrid platform for patterning bioactive signals in hydrogels"

Jenny Kim Laboratory

Lisa Hisaw presented "The Innate Immune Response of Sebocytes against P. acnes"

Stephen Smale Laboratory

Philip Scumpia, MD, PhD presented "Modulation of inflammation by stress signaling"

Antoni Ribas Laboratory

Deborah Wong, MD, PhD presented "High Antitumor Activity of the ERK inhibitor SCH772984 for BRAF-, NRAS- and wild-type melanoma cell lines"

David Baltimore Laboratory

Rajan Kulkarni, MD, PhD presented "Quantifying Gene Expression and Networks in Melanoma"

Roger Lo Laboratory

Hugo Willy, PhD presented "Landscape of resistance mechanisms toward BRAF targeted therapy: tumor heterogeneity and genomic evolution"

For the latest on the division's research initiatives, visit "Research" at derm.med.ucla.edu.

AACR Honors Dr. Roger Lo with Outstanding Achievement Award

Roger S. Lo, MD,PhD, assistant professor in residence and the director of UCLA's melanoma clinic, was honored with an award for Outstanding Achievement in Cancer Research by the American Association for Cancer Research (AACR). Presented to one recipient annually, the award recognizes investigators younger than 40 years old with exceptional contributions and achievements within the field of cancer research. Dr. Lo accepted the award at this year's 33rd annual AACR Annual Meeting on April 9 in Washington, DC, where he also presented his research in a lecture entitled, "How Melanoma Escapes from BRAF Inhibition."

A selection committee made up of internationally renowned cancer research leaders selected Dr. Lo from a pool of candidates for his groundbreaking melanoma research, particularly how cancers escape from molecularly targeted therapies known as BRAF inhibitors.

Award candidates are nominated by their peers then selected by the committee prior to a final sanction by the AACR's Executive Committee.

"We are very fortunate to have Roger as a colleague in the Jonsson Comprehensive Cancer Center (JCCC)," said Judith Gasson, PhD, director of the JCCC and senior associate dean for research. "He is most deserving of this recognition."

Melanoma—the leading cause of skin cancer deaths—will kill nearly 9,500 Americans this year according to the American Cancer Society; 76,690 new melanomas will be diagnosed in the United States. Dr. Lo's research into how BRAF-mutant melanomas, which account for more than half of all melanoma cases, adapt to BRAF inhibition, has accelerated the clinical development of treatments. There is also hope that these findings will lead to a better understanding of other cancers.

"I am extremely honored to be recognized by the AACR and by this particular award, especially given the notable figures in cancer research who have previously received this award," said Dr. Lo. "I accept it on behalf of my research team at UCLA and my collaborators and mentors. The support I have received from my family and wife has been absolutely critical. This award also acknowledges the sacrifices made by cancer patients in the search for greater knowledge."

The AACR is the world's oldest and largest professional organization dedicated to the advancement of cancer research to prevent and cure cancer. Its membership includes more than 34,000 laboratory, translational and clinical researchers; population scientists; other health care professionals; and cancer advocates in more than 90 countries.

In addition to being honored by the AACR, Dr. Lo's research has been featured in prominent publications such as the New York Times and recognized by numerous medical organizations globally. In 2011, Dr. Lo became one of 13 distinguished young doctors nationwide who was awarded an Innovative Research Grant by Stand Up To Cancer (SU2C), a charitable organization established by media, entertainment and philanthropic leaders, including news anchor Katie Couric, to raise significant funds for translational cancer research.

We would like to recognize and thank our generous donors for giving to our Futures Fund.

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Contributions to the UCLA Division of Dermatology will:

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- Educate the next generation of physicians and scientists to become leaders in medical dermatology, cosmetic dermatology, dermatologic surgery, dermatopathology and investigative dermatology.
- Develop new and better strategies to diagnose and treat skin disease through innovative research.

You can make a gift to the Division by logging on to *derm.med.ucla.edu*

Please call (310) 794-4746 if you have questions about making a gift to the UCLA Division of Dermatology.