

The Center for Advancing Pain Relief

A UC DAVIS BIG IDEA



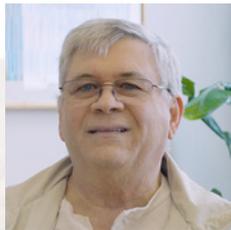
Big
IDEAS

UC DAVIS

A Big Impact: Alleviating Pain, Bringing Hope

When Paul Levallois awoke from surgery with an occipital nerve stimulator placed in his head and neck, his UC Davis health care team informed him they were going to activate the device.

And then his life changed in an instant.



“As soon as they turned it on I felt as if I was in heaven,” says Levallois, who had lived with constant, agonizing headaches for years. “The headache and the pain just went away, it was just a miracle.”

Levallois’ miracle is a novel therapy being pioneered by David Copenhaver, M.D., M.P.H., and his colleagues at the UC Davis Center for Advancing Pain Relief. During the surgery, Copenhaver implanted a spinal cord stimulation device that had been modified to act as an occipital nerve stimulator.

“Paul was a good candidate because he’d had a cervical spine fusion, which disrupts elaborate signaling between his face and head, giving him persistent headaches,” Copenhaver says. “Neuromodulation distracts the brain from pain by ‘jamming’ nerve signals—interrupting them and alleviating pain.”

Such cutting-edge therapies are central to the UC Davis center’s mission to develop therapeutic alternatives to opioid pain medications. And for that, Levallois is especially grateful.

“I had completely lost my hopes of having a normal life until I found Dr. Copenhaver,” says Levallois, who had spent years unsuccessfully trying medications and spinal injections. “I just wanted to get my pain managed differently instead of taking medication that keeps you drowsy all day, makes you nonfunctional, and still leaves you in pain.”

The Sacramento-area grandfather says his ability to return to daily activities has also alleviated a lot of emotional pain. Before the surgery, his young grandchildren would ask him to play—but he was often bedridden for days at a time.

“It hurts, you know, when you can’t play with them. They want to go play soccer with me, so it’s hard.”

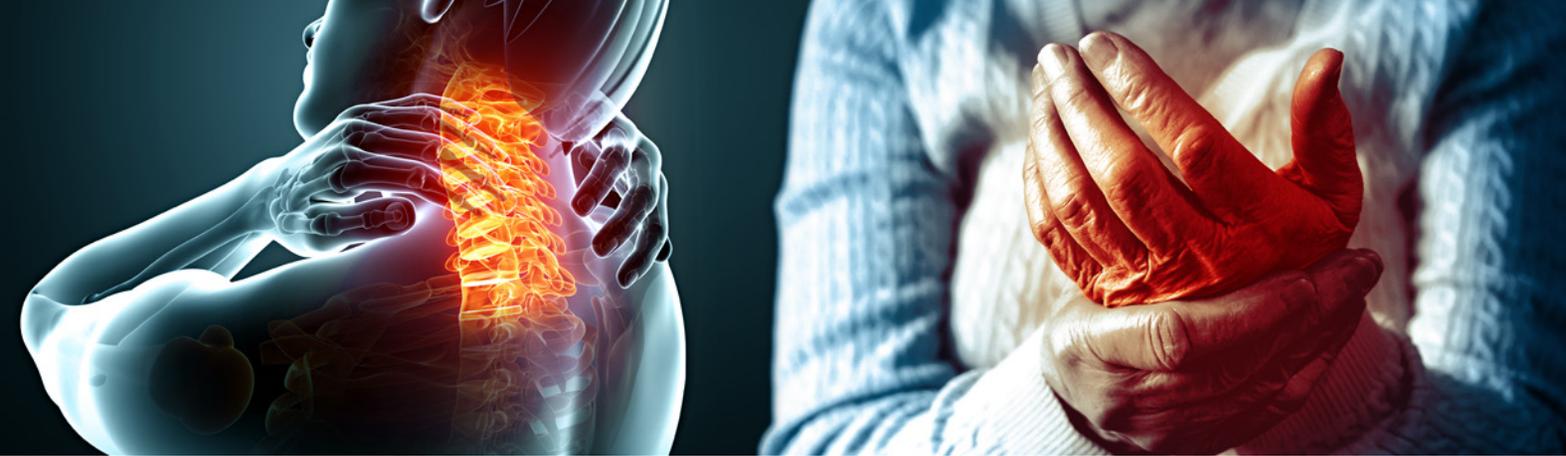
The physicians at the Center for Advancing Pain Relief recognize that chronic pain profoundly diminishes quality of life. With novel therapies like the occipital nerve stimulator, they are spearheading new techniques that relieve suffering while avoiding opioid therapy and the destructive capacity of opioid addiction.

In addition, says Levallois, the physicians at the center truly understand the deep suffering of people with chronic pain.

“I wanted someone to understand what it is to live with pain—it’s just totally awful—and finally I found the right doctor,” he says. “I very much appreciate UC Davis’ efforts with pain care. I can see it when I’m here.

“It’s hope. Hope, hope, hope.”





Scott Fishman, M.D.
Director, Center for Advancing Pain Relief

A Big Challenge, A Big Vision

Pain serves an important, even lifesaving, purpose: It's our body's alarm system, designed to warn us that we are under threat from injury or illness. But when physical pain becomes overwhelming or unending, it can escalate into psychological anguish and even existential distress. When we are in pain, nothing else matters—and too many of us are suffering.

An estimated 50 million Americans, more than one in five of us, suffer from chronic pain at a cost of about \$600 billion per year. Despite the enormous economic and emotional burden on patients, their families and society, treatment remains inadequate and rarely addresses the source of pain. All too often these treatments are both temporary and addicting. As a result, even though the U.S. is home to just 5% of the world's population, we consume 80% of the world's opioid painkillers.

Every aspect of the human experience is affected by pain. Yet paradoxically, it has not been a high priority for research dollars and is not widely included in the education of health professionals. Despite research and education focusing on specific diseases,

pain has been neglected. Our ability to combat the pain management crisis is further hindered by the fragmented state of science, education, health policy and patient care. No single institution has stepped up to mount an effective response—until now.

Leveraging its world-class health and research facilities and tradition of collaboration, UC Davis is leading the way with its new Center for Advancing Pain Relief (CAPR). CAPR is a first-of-its-kind center where the brightest minds—faculty, researchers, educators and policymakers—come together across disciplines to advance novel approaches to pain management, all in the service of alleviating suffering.

As a trusted partner of researchers, clinicians and regulators, the center will generate knowledge and seek consensus to help guide public health regulations and offer solutions to combat prescription drug abuse. By creating a home for the study and treatment of pain, CAPR holds the potential to revolutionize our approach to this critical public health problem and reverse its devastating course.

A Big Opportunity

UC Davis' Big Ideas are forward-thinking, interdisciplinary programs and projects that build upon the strengths of the university to positively impact the world for generations to come.

We seek to partner with visionary philanthropists to establish a first-of-its-kind center that will unite researchers, educators, clinicians and policymakers across disciplines to spark innovation in pain management and dramatically impact the quality of life for pain sufferers.



The Opportunity

Sheila, a retired teacher, beat cancer, but the treatment left her with unbearable pain. Jackie, a senior in high school, has lingering pain from a fractured leg that failed to heal properly. And Greg, a contractor, suffers daily back pain from a herniated disc. They are among the millions who experience acute or chronic pain every year. Yet how we treat them often fails to maximize pain reduction and quality of life. CAPR will effectively address this problem by transforming the way we treat pain.

For example, imagine using small stimulators to deliver electrical pulses that interrupt pain signals before they reach the brain. Or, treating chronic knee pain by growing new cartilage instead of prescribing painkillers. Imagine, too, harnessing the benefits of cannabinoid molecules that are naturally produced within the body to alleviate suffering. From stem cell therapies to psychological and physical rehabilitation to new models of wellness, CAPR will spark innovation and advance comprehensive pain management for the benefit of all.

Launching the Vision

Expanding the new Center for Advancing Pain Relief (CAPR) will require leadership investments in human capital, pilot studies and infrastructure.

With the partnership of philanthropic leaders, CAPR will:

- Create training programs to advance interdisciplinary pain education
- Develop prevention strategies and novel treatments with startup funding for pilot studies
- Endow 11 faculty positions to transform pain care
- Establish scholarships and fellowships to prepare the next generation of health professionals
- Create a state-of-the-art facility for providing pain relief and training current and future clinicians

The center will concentrate its efforts on three key areas that have been prioritized in the National Pain Strategy by the U.S. Department of Health and Human Services and the Institute of Medicine:

- **Research and clinical care:** Catalyze multidisciplinary partnerships to conduct cutting-edge research and advance transformative pain treatments
- **Education:** Train current and future health professionals to deliver person-centered pain care that is safe, effective and more affordable
- **Policy:** Unite researchers, educators and clinicians with policymakers to develop pain management therapies, reach national consensus and provide policy guidance in California and beyond

We invite visionary philanthropic partners to join us in improving the quality of life for pain sufferers around the world.



CATALYZING INTERDISCIPLINARY RESEARCH, TRANSFORMING CLINICAL CARE

UC Davis, with its expertise in biomedical engineering, computer engineering and health sciences, offers the ideal environment for a world-leading center of pain care. CAPR will utilize the university's wealth of multidisciplinary professionals to advance clinical care and research that prioritize whole individuals and their health.

With guidance and expertise rooted in wellness, prevention, and the return of pain sufferers to healthy and productive lives, CAPR will use the power of an integrated university to support the need for health care that addresses quality of life. The center will establish new rules of engagement that advance collaborative efforts to understand and address the problems that affect millions of people each day.

CAPR will cultivate joint efforts across UC Davis. One priority will be a groundbreaking collaboration with the School of Veterinary Medicine's efforts to produce technologies that are translatable between veterinary and human health care. One example of this research is a facial pain-recognition system that helps detect and treat pain in animals. This technology holds promise for translation to human patient populations who have difficulty with verbal expression, including patients with autism, dementia, very young children and the critically ill.

The innovative partnerships that are possible at UC Davis will transcend the limitations of individual clinicians and hospitals—opening new and boundless opportunities for progress. For example, engineering faculty are at work on a new ladder design that will reduce painful musculoskeletal disorders among orchard workers. These faculty members work closely with their colleagues in the Center for Design in the Public Interest to create tools for educating patients and care providers about the new device. Future possibilities include collaboration with the Center for Poverty Research to incorporate the ladder into a policy brief on improving the health of migrant workers in California and beyond.



CREATING EXPERTS IN SAFE AND EFFECTIVE PAIN CARE

Health professionals are confronted with pain and its management every day. However, pain management receives surprisingly little attention in medical, nursing and other professional schools. The seemingly contradictory problems of inadequate pain management and excessive use of painkillers in the U.S. can, in part, be traced to this deficiency in our education system.

To address the problem, a two-pronged approach is required: We must train current students to provide safe and effective pain care and also reeducate physicians, nurses, pharmacists and others who have completed their training with inadequate pain management knowledge and skills. In doing so, CAPR will reach learners of all levels, including practicing clinicians who confront the daily challenges of pain management.

UC Davis has a proven history of reforming health education to improve pain management through the Interprofessional Pain Management Competency Program. CAPR will build on this momentum to create a model program for clinicians and their teams that will provide them with the education, mentoring and resources needed to deliver safe, effective and affordable pain care.

CAPR will facilitate collaboration across disciplines—from medicine, nursing, veterinary medicine, engineering and law to sociology and communications—to transform how pain care is taught by health educators nationwide. By developing new standards for educating students and practicing clinicians, we will create a new generation of health professionals who take a comprehensive approach to understanding and treating pain.

SOUND SCIENCE TO DRIVE POLICY

CAPR will be a hub for sharing perspectives and assimilating evidence-based knowledge around the ongoing dialogue about appropriate pain management, excessive use of painkillers, prescription drug abuse, and the need for improving quality of life. UC Davis' geographic location and its channels of communication with decision-makers in Sacramento will ensure this knowledge has a positive impact on policy in California and beyond. Given the scope and influence of California's economy, policy guidance that works for California can readily become a global standard.

The center will create a much-needed network of faculty, researchers, policymakers and community leaders to reach consensus for public policy decisions that balance the need for care with the potential for risk—an inherent paradox of pain management. By catalyzing targeted policy change, CAPR will help move the levers of government to create sustainable solutions to the global problem of pain.



The Right Time, The Right Place

The renowned Division of Pain Medicine at UC Davis has a proven track record of advancing pain care, research, teaching and advocacy. It was named a 2015 Clinical Center of Excellence in Pain Management by the American Pain Society and received a 2016 Pain Medicine Fellowship Excellence Award from the American Academy of Pain Medicine. The division has partnered with the Betty Irene Moore School of Nursing to yield game-changing initiatives, including the Interprofessional Pain Management Competency Program.

Such powerful collaborations have positioned UC Davis as a global leader. CAPR will take these promising efforts to the next level by providing thought leadership, integration of efforts and

targeted policy change to create sustainable pain solutions through education, research and practice. With philanthropic partners, CAPR will become a world leader in the study and treatment of pain.

UC Davis offers unparalleled potential for work across disciplines, a strategy that will be at the core of the center's mission. CAPR will leverage UC Davis' diverse resources, including our School of Veterinary Medicine and College of Agricultural and Environmental Sciences—both ranked #1 in the nation—and the College of Engineering, the School of Law, the Department of Sociology, the Department of Communications and many others to become the nation's only hub for collaborative, cutting-edge research and best practices in pain management.

The UC Davis Difference

UC Davis is the only university in the nation with the tools, people and vision necessary to take collaborative team science to the next level needed to transform pain care, for the benefit of all.

- The breadth of research assets at UC Davis is unmatched, and we have a proven record of success collaborating across the disciplines
- Our legacy of public service, aligned with our university's vision for the 21st century, positions us to transform health care by advancing person-centered care that places every patient at the heart of their treatment to drastically improve their quality of life
- We are committed to reforming health education and training both students and existing health professionals to provide safer and more effective pain relief



An Invitation

Philanthropy has always been key to the university's success in moving great ideas forward. The Center for Advancing Pain Relief has the vision and expertise that, with your partnership, will revolutionize the study and treatment of pain for generations to come.

Thank you for your consideration of this exciting Big Idea. We look forward to discussing how your philanthropic goals may be achieved through this transformative initiative.

For more information please contact:

Chong Porter
Associate Vice Chancellor,
Health Sciences Development

4900 Broadway Suite 1150
Sacramento, CA 95820

Phone: (916) 734-9402

Email: cuporter@ucdavis.edu

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Ways of Giving

We respect that, for each donor who wishes to provide significant philanthropic support, there are personal, financial and gift planning aspects to consider. We will work with you to realize your philanthropic vision and develop the gift plan that best meets your needs. At your request, we can also work with your tax and financial advisors. Following are various gift types and their associated benefits. You may wish to consider a mix of gift types to help you achieve both your philanthropic and financial objectives.

Cash Gifts

- Are the simplest and most popular giving method
- Can be tax deductible in the year they are given

Gifts of Securities

- Include stocks, mutual funds and bonds
- Can avoid capital gains taxes
- Can provide an income tax deduction for the full fair market value of long-term, appreciated securities

Gifts of Real Property

- Include land, farms, personal residences, and rental or commercial property
- Can avoid capital gains tax on appreciated assets
- Can provide an income tax deduction for the full fair market value of long-term, appreciated property
- Can eliminate property expenses and taxes
- Can provide continued use for life through a retained life estate gift

Bequests and Living Trusts

- Establish the UC Davis Foundation as a beneficiary of your estate
- Can provide an estate tax deduction equal to the value of the gift
- Offer flexibility by allowing you to provide for family first

Retirement Plan Gifts

- For current gifts, utilize the IRA Charitable Rollover provision (*for donors aged 70½ and older*)
- Name the UC Davis Foundation as a beneficiary
- Can eliminate income tax on the plan distributions
- Preserve the plan's full value for gift purposes

Life Income Gifts

- Include charitable remainder trusts and gift annuities
- Can provide potential tax savings on income, estate and capital gains
- Generate income for you and/or your loved ones for a fixed period of time or until your passing
- Distribute the remaining assets to the UC Davis Foundation