



Scripps Clinic orthopedic surgeon Tianyi “Tim” Wang, MD, (left) treats complex knee issues and also conducts leading-edge orthopedic research.

OPPOSITE PAGE, TOP: Anna Kulidjian, MD, Scripps Clinic orthopedic surgeon specializes in innovative hip and knee replacements.

OPPOSITE PAGE, CENTER: Scripps patient Jenna Richardson was the first in San Diego County to receive a Bridge Enhanced ACL Restoration (BEAR) implant.

OPPOSITE PAGE, BOTTOM: Gregory Mundis, MD, Scripps Clinic orthopedic surgeon, has extensive experience in minimally invasive spine surgery.

CLINICAL EXPERTISE IN ORTHOPEDICS

+ **SCRIPPS HAS BEEN** at the forefront of advanced orthopedic care for decades, providing state-of-the-art treatment to patients in San Diego and beyond.

Scripps orthopedic leadership has been driven by four key advances over the decades, says Steven Copp, MD, chair, Scripps Clinic Department of Orthopedic Surgery.

The first was the advent of total joint replacement procedures in 1977, followed by the ability to treat fractures and then spinal injuries with hardware like plates or screws. Known as spinal fixation, it is a method to restore normal anatomy where the bones are permanently joined together.

The implementation of arthroscopic care of joint injuries was another significant move forward. Arthroscopy is a minimally invasive procedure in which a very small camera is inserted into the joint through a small incision. Scripps surgeons have been able to use the technology during ACL replacement since 1987, in rotator cuff repair since 1995 and in the repair of pathology within the hip joint since 2015.

“These are monumental changes. It may be hard to see that since they’re all considered routine now, but they’re not,” says Dr. Copp.

Scripps research has also contributed to advancements in materials for joint replacements, prosthetic platforms for shoulder

replacement and new ways to treat traumatic shoulder injuries. Scripps has also pioneered anterior spine fusion techniques and devices and continues to improve minimally invasive spine surgery.

Advances in patient care were further expanded by the opening of the multidisciplinary Donald P. and Darlene V. Shiley Musculoskeletal Center at Scripps Clinic in 2014. The center houses a wide range of orthopedic and musculoskeletal services, specialties and subspecialties, including musculoskeletal oncology, and serves as a one-stop shop for diagnostics, treatment, surgery and rehabilitation.

“The improvement in collaborative care in the clinical setting was advanced by developing the musculoskeletal center, which is the apex of musculoskeletal care,” says Dr. Copp.

Scripps is also looking to the future of orthopedic care, offering multiple fellowships, including training in sports medicine, minimally invasive spine surgery and total joint replacement.

“Educating the next generation of physicians and surgeons will make an impact in health care for the next 50 years,” says Dr. Copp. “These educational programs are essential to continuously improving clinical care—now and in the future.”

To learn more about Scripps orthopedic care, visit [Scripps.org/SDOrthopedics](https://www.scripps.org/SDOrthopedics).

Decades of Firsts

The history of orthopedics at Scripps is filled with milestones in patient care and research. In 1990, Scripps began using advanced imaging of the musculoskeletal system with CT scan and MRI. Surgeons began allograft cartilage transplantation for youthful cartilage defects in 2009, and introduced total ankle arthroplasty and disc replacement for the cervical spine in 2010.

In 2022, Scripps became the first in San Diego to perform a Bridge Enhanced ACL Restoration (BEAR) procedure, which uses an implant to stabilize a torn ACL, enabling it to heal. Also in 2022, Scripps was the first to use a mixed-reality headset for shoulder replacement. This wearable device allows surgeons to see a 3D holographic model of the patient's shoulder with the replacement joint that serves as a reference during surgery, and can be superimposed over the patient's anatomy on the operating table, personalizing the prosthetic placement.



Research in Orthopedics

Scripps' orthopedic department launched in 1977 with one physician and an administrative assistant. Since then, Scripps and Scripps Clinic have become nationally recognized as leaders in orthopedic services, bolstered by a reputation for clinical excellence and a commitment to advancing the field through a robust research program.

In 1989, the Shiley Center for Orthopaedic Research and Education (SCORE) opened at Scripps Clinic. SCORE's initial work focused on testing new devices and surgical techniques, and then advanced to developing artificial cartilage and conducting clinical research to support the best possible orthopedic care.

"What started with one physician has now reached over 45. It is a huge department doing exceptional work in patient care, research and education," explains Clifford Colwell, MD, Shiley Chair in Orthopedic Research at SCORE. "Right now, our primary research focus is using stem cells to replace cartilage. If we can use our own biology to avoid plastics, metals and ceramics, it will revolutionize care in the medical field. We are not there yet, but it's the dream."

The Evolution of Spine Repair

One of the most frequent complaints people have when seeing a doctor is back pain. With an aging population of Baby Boomers, back issues are only expected to increase. Thankfully, Scripps' commitment to advancing treatment for conditions of the spine—from the common to the complex—allow spine specialists to provide highly advanced spinal surgeries. From fixation and fusion to disc replacement for the cervical spine to minimally invasive alignment correction, the evolution of spine repair means that for many patients, relief is readily available. To further advance the field, Scripps has also launched a spine surgery fellowship to train the next generation of surgeons.

"During the past 20 years, there have been technological advancements that have changed our ability to treat conditions of the spine with more effectiveness and efficiency, better outcomes and better long-term results," says James Bruffey, MD, a Scripps Clinic spine surgeon. "We can treat common disorders more effectively with less trauma, and more complicated problems with greater reliability. What this means for the patient is that they feel better sooner and more consistently, with less pain from their original condition."

Expert Care for Athletes

When an athlete—pro or recreational—is injured, they turn to the winning team at Scripps. Scripps' sports medicine physicians combine expertise with advanced technologies and treatments for musculoskeletal injuries, including torn rotator cuffs, traumatic knee injuries and foot pain. The multidisciplinary nature of care at Scripps ensures that patients receive the highest quality of care to address their specific need. Sports medicine physicians coordinate with athletic teams, clinicians, specialists, trainers, physical therapists and other experts to diagnose, treat and help prevent injuries.

Scripps was the official medical provider for the San Diego Padres from 1981 to 2017. Both Jan Fronck, MD, former head of the Scripps Clinic Division of Sports Medicine, and Scripps Clinic orthopedic surgeon Heinz Hoenecke, MD, served as head team physicians, and multiple Scripps Clinic physicians participated in care of the team, its coaches and their families throughout those years.

In addition to their vast experience managing injuries on the field, Scripps sports

medicine specialists are experts in treating shoulder, knee, hip and foot injuries using the latest technologies.

Doctors now have innovative surgical solutions, many that can be done with smaller incisions, less pain and faster recoveries. For example, surgeons can now implant a saline balloon to cushion the shoulder joint, patch a tear with donor tissue or, in the case of a massive rotator cuff tear, perform a reverse total shoulder replacement, which forces other muscles to do the job of the rotator cuff. Many of these advances, often developed to meet the needs of professional athletes, can also be used to care for recreational athletes.

"One of the advantages of taking care of professional athletes is that it forces you to stay up to date," says Dr. Fronck. "Having the opportunity to take care of professional baseball players, football players, skiers or snowboarders encourages us to take care of everyone equally. When a rotator cuff is torn, it doesn't know whether it belongs to somebody who's making a living throwing baseballs or an accountant who enjoys tennis. The biology and biomechanics are the same."