

The SIGN Solution

Here in the US, it's hard to conceive that a broken leg can lead to a life-long disability. But in many places around the world, that is the expectation. For generations, people living in low-income countries have seen relatives and friends who had a broken bone

go to a hospital and return months later with a deformed limb or amputation.

SIGN's vision is to create equality of fracture care throughout the world. We are bringing the same methods of stabilizing fractured bones used in the highest level of trauma centers in the US to government and mission hospitals in the world's poorest places, using tools and techniques that don't require electricity in the operating room.

The SIGN Solution includes providing educational opportunities for surgeons in low-income countries, equipping those surgeons with appropriate orthopaedic instruments and

implants, and donating an ongoing supply of implants so that cost is not a barrier for patients to receive the care they need.

The gift of healing came to Martha in 2011, when she was 11 years old. Her femur was

fractured when thieves shoved her as they were running from police. Her aunt brought her to Muhimbili Orthopaedic Institute in Dar es Salaam, where Dr. Zirkle and Jeanne were providing training on the new SIGN Pediatric Fin Nail. Dr. Zirkle and the surgeons at MOI performed surgery on Martha two days after her injury. She returned home and re-entered school just weeks after surgery. Her surgeon said that without SIGN Surgery she would not have been able to return to school. She graduated from high school in December 2020 and plans to attend college. She is the first in her family to get a high school diploma and to go to college.

THANK YOU for supporting SIGN Fracture Care for the past 22 years. Your support has helped more than 342,000 people heal from fractures in 54 countries. And we're not finished yet. More than 20 million people will be injured in traffic accidents around the world this year, and we need your help to care for as many of them as possible.

Share your story about SIGN on Instagram, Facebook, or Twitter tagged with #SIGNsolution!

Because of SIGN, Martha was able to go back to school, graduate, and realize her dream to build a better future. That is the SIGN Solution at work.



Board Spotlight: Dr. David Shearer



Dr. David Shearer, Vice President of the SIGN Board of Directors, was born and raised in Toppenish,

Washington. He had a goal of returning to his hometown as a family physician, but his interest in global health was ignited on a medical school trip to Guatemala. Around the same time, he was exposed to the restorative power of orthopaedic treatment. In recounting the path that led him to SIGN, Dr. Shearer said, “I felt like [global health and orthopaedics] were two different paths, and I was going to have to give up on one or the other... and then... I emailed Dr. Zirkle.”

Dr. Shearer began partnering with SIGN in the early 2000s. He helped to develop a machine to test the strength of the SIGN Hip Construct. He traveled with Dr. Zirkle to Indonesia in 2004, and during his orthopaedic residency he traveled to Tanzania

to begin a research project with SIGN Surgeons.

Today, Dr. Shearer views his work at UCSF’s Institute for Global Orthopaedics and Traumatology (IGOT) as integrally interwoven with his partnership with SIGN, in terms of research and education. He meets monthly with the SIGN Engineering and IT teams to discuss analysis of the SIGN Surgical Database for use in cutting-edge research, regularly including IGOT Research Fellows in the conversation.

In the past year, IGOT and SIGN have partnered to provide ongoing education for SIGN Surgeons through monthly webinars in lieu of both organization’s annual face-to-face conferences. Dr. Shearer believes in SIGN’s “watch one, do one, teach one” model of education. As he noted, proverbially teaching a man to fish may be better than

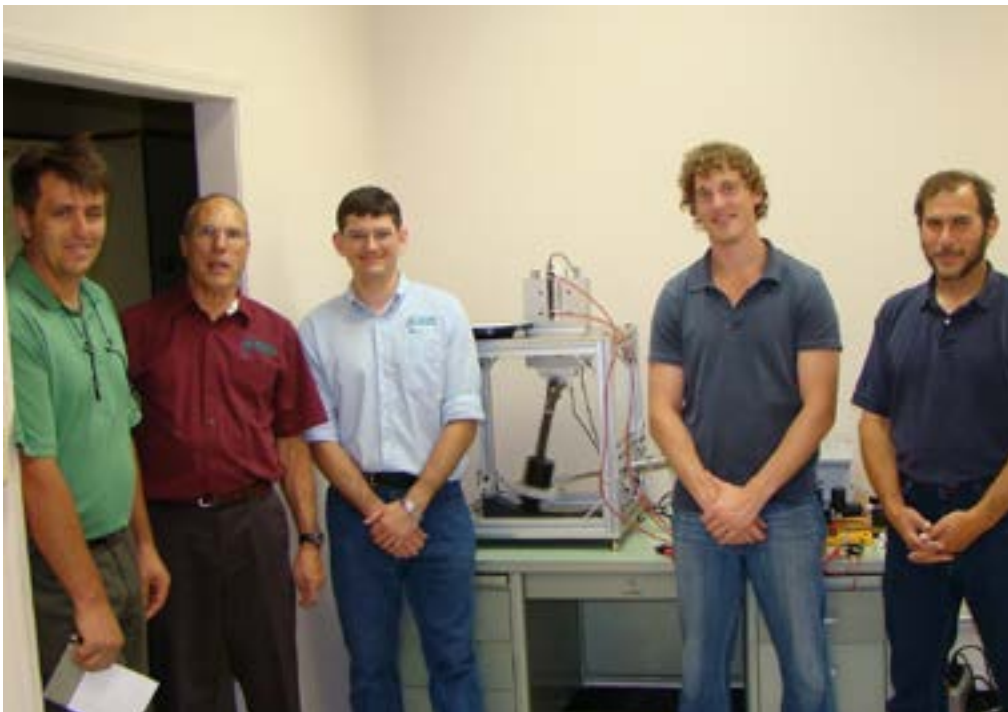


Dr. Shearer with Dr. Billy Haonga in Dar es Salaam, Tanzania.

feeding him for a day, but “[teaching] a man to teach [others] how to fish is even better.”

Recently Dr. Shearer was instrumental in earning a grant from the National Institute of Health (NIH), through the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), to fund IGOT’s research on treating infections in open fracture wounds with his research partners in Tanzania, SIGN Surgeons Dr. Billy Haonga and Dr. Edmund Eliezar. This award is not only NIAMS’s first award for global health research, but also IGOT’s first award from NIH, representing an exciting opportunity for future funding opportunities in this critical area.

Dr. Shearer has been on SIGN’s board of directors since 2018 and was recently elected Vice President. “I very deeply believe in [Dr. Zirkle’s] vision for SIGN,” Dr. Shearer said. “If he feels that me being in that role is going to help further that... then I was very happy to accept the role and be able to try to support however I can.”



Dr. Shearer (second right) helped a team of SIGN Engineers and partners develop a fatigue testing machine for SIGN Implants in 2001.

SIGN Surgery Prevents Lifelong Disability

Mahesh, a 13-year-old boy, broke his femur due to a fall. He lives in Narharinath, a rural community in western Nepal. Being very far from the hospital, Mahesh's family sought local treatment. After an entire month of attempting to recover, Mahesh was not getting any better. He had to be carried for six hours on a stretcher and then travel in a jeep for another six hours before reaching Bayalpata Hospital, which has a SIGN Program.

Typical of fractures with delayed treatment, the bone was fusing into a misaligned configuration, which complicated the surgery. Once admitted, doctors gave Mahesh antibiotics and set to work to reduce the fracture. This took an hour due to the drastic malunion of the two bone fragments. After correcting the deformity, Mahesh's doctor inserted a SIGN Nail to stabilize the fracture and enable healing.

Three months after SIGN Surgery, Mahesh is able to fully squat without support, which shows that his bone has healed, and he has returned to full strength and flexibility.

Without SIGN Surgery, Mahesh's femur would have become malformed, leaving him disabled and limiting his ability to return to school or find work, especially in the rural, mountainous area where he lives. He and his whole family would likely have been pushed into poverty.

He had to be carried for six hours on a stretcher and then travel in a jeep for another six hours before reaching Bayalpata Hospital, which has a SIGN Program.

But because supporters like you donated the orthopaedic instruments and implants, one surgical intervention turned Mahesh's injury into a temporary setback, rather than a lifelong disability.

You can be part of the #SIGNsolution and help someone like Mahesh recover from a broken bone, restoring their health and empowering their future. Use the enclosed form or give online at signfracturecare.org/donate



Mahesh is healed and fully active just three months after SIGN Surgery.



Charity Navigator: Four Star Rating Received

We are proud to receive a Four Star rating from Charity Navigator once again. This is Charity Navigator's highest rating for non-profits, and only 4% of charities have received

this rating for 9 consecutive years, as we have.

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