

# Best New Spine Technologies for 2023

BY ROBIN YOUNG

Here are the best new spine surgery technologies for 2023.

Every year, *Orthopedics This Week* convenes a panel of top surgeons to review dozens of new technology submissions from around the world.

This award was inaugurated more than a decade ago to recognize the remarkable inventors, engineering teams, surgeons and their companies who have created the most innovative, enduring, and practical products to treat back care.

To win the *Orthopedics This Week* Best New Technology Award for spine care, a new technology must meet the following criteria:

1. Be creative and innovative.
2. Bring long term significance to treating spine pathologies. Does this technology have staying power?
3. Solve a current clinical problem.
4. Improve standard of care.
5. Is cost effective?
6. Members of the judges panel would consider personally using it.



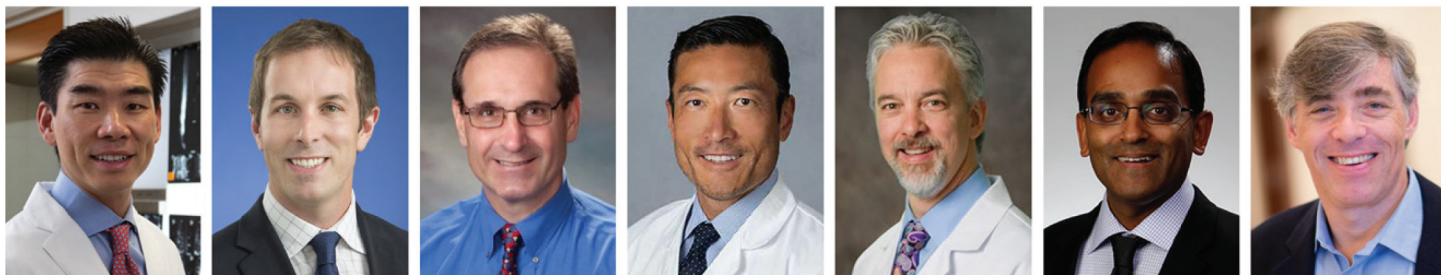
Source: RRY Publications LLC

We received a record number of submissions for 2023.

## The Judges

Here are the judges for this year's awards.

**Hyun W. Bae, M.D.** Dr. Bae is a professor of surgery and director of spine education at Cedars-Sinai Spine Center



(L to R): Hyun W. Bae, M.D.; Matthew W. Colman, M.D.; Domagoj Coric, M.D.; Han Jo Kim, M.D.; Pierce Nunley, M.D.; Alpesh A. Patel, M.D., M.B.A.; and Mike Sherman, M.S. Biomedical Engineering

in Los Angeles. He is the author of hundreds of published scientific papers and is a frequent podium presenter at spine surgeon meetings around the world.

Dr. Bae received his bachelor's degree in biomechanics from the Columbia University School of Engineering and Applied Sciences. After graduating cum laude from Yale University School of Medicine, he completed his surgical internship at North Shore University Hospital, his orthopedic surgical residency at the Hospital for Special Surgery in New York, and his spine fellowship at Case Western Hospital in Cleveland.

**Matthew W. Colman, M.D.** Dr. Matthew Colman is a board certified surgeon specializing spine surgery and musculoskeletal oncology. He graduated cum laude with honors from Dartmouth College, earned his medical

degree with honors from the University of Chicago Pritzker School of Medicine, Chicago and went on to complete his residency in orthopedic surgery at the University of Pittsburgh Medical Center, Pittsburgh.

He has been fellowship trained in pediatric and adult musculoskeletal oncology at Harvard University and orthopedic and neurosurgical spine surgery at the University of Utah.

**Domagoj Coric, M.D.** Dr. Dom Coric spent 25 years as a neurosurgical spine surgeon at Carolina Neurosurgery and Spine Associates (CNSA) in Charlotte, North Carolina, serving 13 years as Chief, Department of Neurosurgery at Carolinas Medical Center. He's served as Executive Medical Director of SpineFirst and Director of the Carolina Center for Specialty Surgery. Finally, Dr. Coric is the Jerry

and Audrey Petty Endowed Professor of Spine Surgery at Atrium Health/Wake Forest University and is currently the Atrium/Advocate Health Director of the Southeast Spine Center of Excellence.

Dr. Coric is past-President or past-Chair of the following societies: the International Society for the Advancement of Spine Surgery (ISASS), the AANS/CNS Joint Section on Spine and Peripheral Nerves/Spine Summit, the Southern Neurosurgical Society, and the North Carolina Spine Society. He currently serves on the Board of Directors of the American Association of Neurological Surgeons (AANS).

**Han Jo Kim, M.D.** Dr. Han Jo Kim is an Attending Spine Surgeon, Professor of Orthopedic Surgery at Weill Cornell Medical College, David B Levine MD Endowed Chair and Director of the

*Note: Article consolidated by SST (ads removed) to create a concise read.*

Spine Fellowship and Chair of the Fellowship Committee at the Hospital for Special Surgery in New York.

Dr. Kim has authored more than 300 peer-reviewed scientific articles and more than 55 book chapters and over 50 visiting lectureships. He was selected for the prestigious Edgar G. Dawson Fellowship in 2013 and subsequently was selected for the Scoliosis Research Society Traveling Fellowship in 2017 and served as the IMAST Chair in 2020. He is an active member of the Cervical Spine Research Society.

**Pierce Nunley, M.D.** Dr. Pierce Nunley is a board-certified surgeon, clinical researcher and thought leader behind many key innovations in spine surgery. Dr. Nunley has been Principal Investigator (PI), in more than 30 studies, author of dozens of peer reviewed clinical studies.

Dr. Nunley is the chairman of the American Board of Spine Surgery, and member Cervical Spine Research Society (CSRS), Scoliosis Research Society (SRS), Society for Minimally Invasive Spine Surgery (SMISS), North American Spine Society (NASS), American Academy of Orthopaedic Surgeons (AAOS), and International Society for the Advancement of Spine Surgery (ISASS).

He is also associate editor for The Spine Journal, and reviewer for Global Spine Journal and British Medical Journal. Dr. Nunley is Founder and Medical Director of the Spine Institute of Louisiana and is a Clinical Instructor of Orthopedic Surgery at Louisiana State University Health Sciences Center.

Dr. Nunley is also an accomplished musician performing and composing music for voice, guitar, violin and piano.

**Alpesh A. Patel, M.D., M.B.A.** Dr. Patel is the Co-Director of the Northwestern Center for Spine Health and is fellowship trained in both orthopedic spine surgery and neurosurgery. Dr. Patel specializes in cervical spine surgery and minimally invasive spine surgery. He is known for his clinical research on patient outcomes, quality and value in healthcare, and predictive analytics. Also, dedicated to creating value through strategy and innovation in healthcare.

**Mike Sherman, M.S. Biomedical Engineering** Mike Sherman is the dean of spinal implant and instrument engineering. Sherman's career is, in effect, the history of Modern Spine Surgery and he, above anyone else, has been part of the foundational spinal implant and instrument developments and continues to work with surgeons and companies, large

and small, to advance and transform patient's lives.

His background includes 9 years with MB Venture Partners and 16 years at Medtronic Spine (formerly Sofamor Danek). Prior to Sofamor Danek, Mike

held positions at Synthes and Richards Medical. Over the course of his career, Mike has amassed over 100 issued U.S. patents on various inventions. Mike received his Bachelor of Science in Biomedical Engineering from Rensselaer Polytechnic Institute and a

Master of Science in Biomedical Engineering from the University of Texas, Southwestern Graduate School. He has served on dozens of boards of directors. Mike currently owns and operates MB Innovations, Inc.

## PerQdisc

**Manufacturer:** Spinal Stabilization Technologies

**Inventors and Engineers:** W. Loren Francis, Mark A. Novotny, Jake Ganem, Nadi Hibri, James Lutz

This award-winning technology is designed to address the underlying causes of discogenic back pain—not with fusion—but rather with an implant that behaves similarly to the native disc.

It could be the missing link between conservative care and end-stage segmental fusion.

Brand-named PerQdisc™, this technology from Spinal Stabilization Technologies is currently in clinical study. The implant replaces the physical space formerly occupied by a degener-



ated nucleus with a material which, when contained by the annulus, can restore natural biomechanics of the motion segment.

The PerQdisc has been designed for a lateral transpsoas, retroperitoneal (i.e., anterolateral) or posterior lateral surgical approach to access the disc space. To prepare the disc space, surgeons perform a nucleotomy. Once



Robin Young and Mark Novotny

the disc space is ready, the surgeon then inserts PerQdisc through an access cannula into the enucleated disc space.

The PerQdisc comes with two chambers, one for contrast media and one which contains the curable polymer with barium sulfate to allow for imaging of the implant. Each chamber helps give PerQdisc good visualization and real-time monitoring of fill pressure. The PerQdisc's polymer cures in situ

real-time monitoring of fill pressure. The PerQdisc's polymer cures in situ within ten minutes at body temperature creating a custom implant.

This is intended to be an alternative to bigger surgeries like fusion or total disc replacement—but with no bridges burned. The goal of the PerQdisc procedure is to recreate physiological motion while also redistributing the weight bearing forces and mechanical

properties of the disc in a more natural fashion.

One of the reasons PerQdisc received such good scores from the surgeon panel is because it appears to have overcome many of the shortcomings of prior nucleus replacement technologies. Spinal Stabilization Technologies is presently enrolling patients in a PerQdisc clinical trial. Early results, say the company, are encouraging.