

Sonntag Spine Center



↑ Juan Uribe, MD, has taken over the mantle of leadership for spine at Barrow from Volker Sonntag, MD.

T HREE OF EVERY FOUR AMERICANS will suffer from back pain at some point in their lives. In the United States, we spend at least \$50 billion each year treating back pain, and twice that much on costs including lost wages and productivity. Not to mention the devastating costs of opioid addiction and suicide. The need for innovation in treating maladies of the spine is greater now than ever. Sonntag Spine Center at Barrow Neurological Institute remains central to this cause with a philosophy that accepts challenges, rejects norms, and pushes boundaries.

The spine was largely an afterthought in a neurosurgeon's education when Volker K.H. Sonntag, MD, came to Barrow. Dr. Sonntag made treatment of the spine an integral part of neurosurgery, and his once-radical innovations are today's standard of care.

Melding the visions of Dr. Sonntag with the current generation of Barrow's neurosurgery leaders, Barrow is committed to expanding patient care through scientific innovation, basic, clinical, and translational research, pain management, and education to create the nation's most comprehensive spine center.



3 OF 4

Americans will experience back pain



Back pain is a common reason for

MISSING WORK



Americans spend
\$50 BILLION
a year on back pain

BY THE NUMBERS



CLINICAL IMPACT

100,878

BNI Clinic Visits

77,000+

Patients Treated

5,000+

Brain & Spine Surgeries



GLOBAL IMPACT

47

Visiting Scholars from Argentina, Austria, Brazil, China, Chile, Colombia, Germany, India, Italy, Ireland, Israel, Mexico, Pakistan, Philippines, Portugal, Romania, Russia, Spain, South Korea, Turkey, United Kingdom

PROGRAM ACCOMPLISHMENTS

Under Dr. Sonntag's leadership, Barrow established itself as a global leader in education, innovation and treatment of spinal disorders. Juan Uribe, MD, is building on that tradition, as a trailblazer in minimally invasive techniques and in developing the Sonntag Spine Center.

Barrow spine surgeons perform more than 3,000 surgeries each year, drawing patients from around the world, including those who have had less successful surgeries elsewhere. For instance, one 69-year-old woman arrived at Barrow bent over and dependent on a cane. Six weeks after Barrow doctors operated on her, she was fully erect and walking with ease in high-heel boots.



The Barrow Golf Neuroscience Research Laboratory will determine precisely which aspects of the modern golf swing lead to back pain, identify ways to manage or prevent it, and provide golfers with sound guidance on getting back to the game they love.

Laura Snyder, MD, FAANS, is one of two female neurosurgeons at Barrow, the nation's largest neurosurgical center in the country. Only six percent of board-certified practicing neurosurgeons in the US are women. Dr. Snyder performs minimally invasive spine surgery, robotic spine surgery, complex spine surgery, and treats pathologies such as spinal stenosis, lumbar instability, and spinal tumors. She also conducts research to compare patient outcomes among different surgical approaches.

Jay Turner, MD, PhD, is working on a spinal research registry and patient database that will track all patient outcomes to develop safety

measures, quality improvement, and best practices. The registry data will allow our spine team to analyze current methods and patient outcomes and determine what works and what does not work to help make recommendations on treatments, based on the data of similar cases.

RESEARCH ADVANCES

Dr. Uribe and his team have published numerous scientific papers and book chapters, and have participated in several conferences presenting outcomes of the data collected at Barrow. The work includes a paper on the factors associated with selecting the best approach to complicated spine surgery. The team also tested 3D printed synthetic spine models to see which one most closely approximates the human spine, and examined the effects of surgical procedures on joints adjacent to the surgical site. Members of the Biomechanics Lab, led by Brian Kelly, PhD, published several papers and is one of the leading labs in the country advancing the scientific knowledge of the biomechanics of the spine.

Additionally, Randall Porter, MD, Corey T. Walker, MD, and Dr. Uribe published a study linking the modern golf swing to the most common back injury among golfers – repetitive traumatic discopathy (RTD). Highlighted internationally through BBC News, this discovery has major implications for more than 60 million people worldwide who enjoy the game. Barrow has been a key player in developing the NFL's concussion protocols and return-to-play guidelines and is working with the league to develop similar guidelines for spinal injuries.

ON THE HORIZON

There are plans to develop a virtual reality laboratory, to advance neurosurgical education and procedural training across a wide breadth of spinal procedures. The first milestone is the development of a virtual reality surgical education platform. The platform will be designed to develop and evaluate the 3D understanding of spinal anatomy among neurosurgery residents. Our vision for the virtual reality suite is to capitalize on the tactile feedback of synthetic bone and combine it with virtual reality to create a high fidelity experience for training and evaluation. The suite would be outfitted with a similarly styled entrance, room arrangement, and the same surgical tools surgeons use during procedures to simulate a real-life operating room as closely as possible.

BY THE NUMBERS



RESEARCH

1,377

Active Research
Studies

959

Patients Enrolled
in Clinical Trials

\$11.3 MILLION

Federal Research
Grant Support



DONOR IMPACT

\$2.4 MILLION

Basic & Translational
Research

\$5.28 MILLION

Strategic Initiatives

\$1.63 MILLION

Education and
Fellowship Programs

\$1.97 MILLION

Community
Outreach Programs



THANK YOU FOR YOUR SUPPORT

The goal of spine surgery at Sonntag Spine Center is to improve the quality of life for those who suffer from spinal disease, injury, or congenital deformity. Your support is imperative as we strive to provide unsurpassed clinical care, investigate less-invasive surgical procedures, and improve outcomes for patients everywhere. Your generosity fuels new ideas, and we are so excited for this next great chapter in Barrow's history.

With Gratitude,
Juan Uribe, MD
Chief, Spinal Disorders
Sonntag Chair of Spinal Research
Barrow Neurological Institute

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Barrow Neurological Foundation's mission is simple: to be the catalyst of our donors' passion for transformation by providing the resources for Barrow Neurological Institute to achieve its mission of saving human lives through innovative treatment, groundbreaking, curative research and educating the next generation of the world's leading neuro clinicians.



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