ORS Spine Section Orthopaedic Research Society
Monthly Newsletter
Spinal Column

July 2026

Message from the Chair

What a year it has been! As I step into the role of Chair of the ORS Spine Section, I do so with immense pride, gratitude, and a heart still full from everything we shared together in Charlotte. The ORS 2026 Annual Meeting was nothing short of extraordinary. With 469 registrations for our Friday symposium and approximately 140 attendees at our networking reception at the RiRa Irish Pub - *both record-breaking numbers* - the energy, passion, and camaraderie on display were a powerful reminder of just how vibrant and special this community truly is.

2026 was no ordinary year: we celebrated the 10th Annniversary of the ORS Spine Section, a milestone that deserved every bit of the enthusiasm and joy that filled those rooms. The photos from the scientific symposium and the networking reception speak for themselves - these are moments and memories we will carry forward for years to come.

None of this would have been possible without the extraordinary leadership of our outgoing Section Chair, **Dino Samartzis, DSc**. Dino has been a true inspiration - someone who challenged us to build bridges rather than silos, to foster connections that transcend disciplines, institutions, and borders, and to approach our work not just as researchers, but as a community that lifts each other up. His vision, dedication, and generosity of spirit set the tone for everything we aspire to be as a Section, and I am deeply grateful to be stepping into a role he shaped so beautifully. Thank you, Dino! I also want to extend my heartfelt congratulations to all of our award winners: Your achievements reflect the very best of what this community stands for, and you make us all proud.

And to our new and continuing ORS Spine Section officers: Thank you! Your commitment to fostering collaboration, innovation, and mentorship is the backbone of everything we do, and I am honored to serve alongside each of you.

I also want to take a moment to acknowledge something important: the past year has not been easy for many of us. Funding pressures, institutional challenges, and an uncertain research landscape have weighed heavily on our community in different ways. But coming together in Charlotte - sharing science, laughter, great friendships, and that undeniable collective passion for what we do - was, for many of us, a much-needed reminder of ***why*** we love this work. It certainly was for me. The community, the science, the friendships forged over years of shared purpose - there is nothing quite like it, and I left Charlotte re-energized and more committed than ever.

And while 2026 was a landmark year, I am here to tell you that 2027 will not be short of excitement. Mark your calendars for the following events:

ORS PSRS 8th International Spine Research Symposium
November 1 - 5, 2026
Skytop, Pennsylvania

2027 ORS Annual Meeting
February 19 - 23, 2027
Moscone Center West
San Francisco, CA
Spine Section Session
Spine Section Reception

Spineweek 2027
May 16 - 20, 2027
Montreal, Canada

Planning for our activites at the 2027 ORS Annual Meeting in San Francisco is well underway. Charlotte set the bar high and we intend to clear it. It is going to be epic. Be there!

Together, let's carry the momentum of this milestone year forward, deepen our connections, and continue building a Section that is not only scientifically excellent, but truly a community - one where every member feels seen, supported, and inspired. I can't wait to see what we accomplish next.

Karin Wuertz-Kozak, MBA, PhD
Rochester Institute of Technology

Spine Section Leadership

2026-2027

Karin Wuertz-Kozak, MBA, PhD
Chair

Svenja Illien-Junger, PhD
Chair Elect

Dino Samartzis, DSc
Immediate Past Chair

ORS PSRS 8th International Spine Research Symposium

November 1-5, 2026 | Skytop, Pennsylvania

Abstract Submission Due August 24, 2026	Registration is open!	Lifetime Achievement Award Nominations	Schedule at a Glance
Submit Here	Register Now	Nominate Here	View Agenda

The Philadelphia Spine Research Society (PSRS) and the Orthopaedic Research Society (ORS) invite you to the ORS PSRS 8th International Spine Research Symposium. Since 2011, this biennial event has brought together leading researchers, clinicians, and industry professionals from around the world. Past symposia have been highly successful, earning enthusiastic praise and positive feedback from participants. For any questions or inquiries, please contact the conference organizers: **James C. Iatridis, PhD; Sarah Gullbrand, PhD; Lachlan Smith, PhD;** and **Nilsson Holguin, PhD**.

ORS 2026 Annual Meeting Recap

This year marked a special milestone for the ORS Spine Section as we proudly celebrated our 10th Anniversary. It was a remarkable occasion that brought together the global spine research community to reflect on a decade of scientific excellence, collaboration, and innovation.

The celebration featured engaging Founder's Chats, outstanding scientific presentations from researchers across the world, and numerous opportunities to foster new collaborations and strengthen existing partnerships. Memorable networking events and a well-attended reception highlighted the strong sense of community that has become a hallmark of the ORS Spine Section. The anniversary was further commemorated through a special issue recognizing the contributions, achievements, and dedication of our members over the past ten years. This milestone is a testament to the collective efforts of our researchers, clinicians, trainees, industry partners, and leaders who have helped shape the Spine Section into a thriving and impactful community. We extend our sincere congratulations and gratitude to all members for their contributions to this success.

We are proud of how far we have come and excited for the discoveries, collaborations, and advancements that lie ahead as we embark on the next decade of spine research and innovation.

Congratulations to our Award Winners!

2026 ORS/RJOS Young Female Investigator Grant Recipient
Giselle Kaneda (Cedars-Sinai Medical Center)

Podium Awards 2026:
Denise Iiiff (Icahn School of Medicine at Mount Sinai)
Jeffrey Hutchinson (Western University)
Madeleine Gordon (Columbia University)

Poster Awards 2026:
Matthew Fainor (University of Pennsylvania)
Alejandro Venable-Croft (Virginia Tech)
Neharika Bhadouria (Icahn School of medicine at Mount Sinai)
Jonah Holbrook (University of Utah)
Gabriella Bond (Columbia University)
Luca Ambrosio (Fondazione Universitario)

Section Chair 2025-2026 Service Award
(Dino Samartzis, PhD)
Inaugural Philotimo Award
(James C.Iatridis, PhD)
Peter Roughley Award 2025
(Rachel Thompson)
ORS Women's Leadership Forum Award
Lisbet Haglund, PhD
ORS/Bethel Award 2025
Mark (Min Kyu) Kim, PhD (left),
Shirley (Nina) Tang, PhD (right)
ORS Stryker Women Fellowship Award
Shirley (Nina) Tang, PhD

INTERNSHIP
ORS Spine Section Orthopaedic Research Society

Submit Here

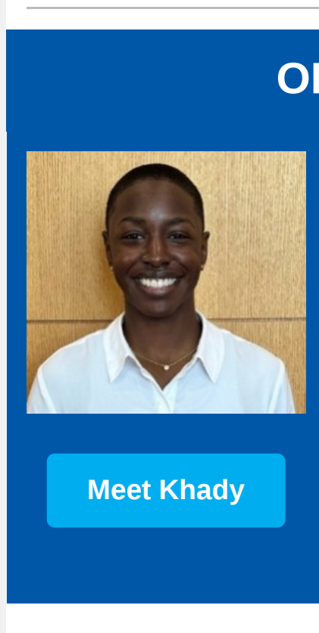
Call for ORS Spine Section Interns

Trainee/postdoctoral fellows looking to get more involved with the ORS Spine Section activities and learn from section leadership?
Apply to be a 2026 ORS Spine Section Intern.

Deadline to submit is August 24, 2026.

Contact Neharika Bhadouria, PhD or Derek Rosenzweig, PhD
with any questions.

ORS Spine Section Member Highlight



Meet Khady

Khady Diop
PhD Candidate, Department of Biomedical Engineering
The Ohio State University
Undergraduate Degree: Biology, BS

"I am interested in developing therapeutics and regenerative strategies for the treatment of intervertebral disc degeneration using non-viral gene delivery platforms. I focus on generating and using extracellular vesicles to deliver gene cargo do diseased IVD cells/tissues with the goal understanding how to improve therapeutic efficacy and identifying patient variables that influence therapeutic success."

Paper Review

Viscoelastic and Morphologic Changes in the Lumbar Intervertebral Discs of the 5xFAD Mouse Model of Alzheimer's Disease

C. E. Gonzalez, C. A. Schurman, K. A. Wilson, B. Schilling, L. M. Ellerby, S. Y. Tang
https://onlinelibrary.wiley.com/doi/10.1002/jsp2.70171

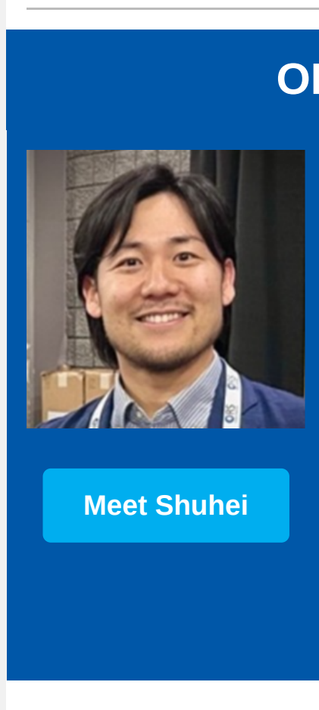
Incidence of intervertebral disc degeneration and its associated low back pain and Alzheimer's disease are strongly correlated with age. Individuals with Alzheimer's disease (AD) may experience increased low back pain but elucidating the role of AD on the progression of IVD degeneration independent of aging remains a challenge. The authors of the present used a murine model of Alzheimer's disease to examine how AD related mutations affect the structure and mechanics of the IVD.

This study used 12 m.o. 5xFAD heterozygous mice which recapitulate key features of advanced stage AD such as widespread amyloid plaque deposition, synaptic loss, and impaired locomotion, balance, and motor coordination alongside wildtype littermates (n=8 per group, 5 male, 3 female). Functional spine units from each group were subjected to histological grading and matrix composition analysis to determine changes in disc morphology and ECM components. Functional spine units were also imaged via uCT to evaluate disc height ratio and bv/tv of the vertebrae. Additionally, functional properties of the spine units were analyzed via mechanical testing.

There are no differences in degeneration score or key ECM components (GAG, hydroxyproline) between 5xFAD and wild type mice. 5xFAD mice IVDs have increased volume and increased homogeneity in size relative to wild type mice with no differences in disc height or vertebral bv/tv. Mechanical testing showed elevated loss of tangent in 5xFAD mice indicating increased disc viscosity relative to wild type IVDs.

In summary, IVDs from 5xFAD mice are larger, flatter and more viscous suggesting that AD impacts IVD structure, morphology, mechanics. This study establishes a link between AD and IVD degeneration and highlights the need to interrogate the mechanistic and molecular basis for these differences.

ORS Spine Section Member Highlight



Meet Shuhei

Shuhei Iwata, MD
Postdoctoral Fellow, Department of Anesthesiology
University of Minnesota
Undergraduate Degree: Chiba University, Japan

"My main research interest is the mechanism of central sensitization in chronic low back pain. As a spine surgeon, I have treated a wide range of patients with low back pain, from athletes to older adults, including surgical cases. Through that experience, I became interested in the idea that low back pain is not simply caused by degeneration of the spine but also involves psychological factors and changes in the brain. That interest led me to basic research, where I hope to clarify the mechanisms and contribute to the development of new treatments."

Paper Review

Single-nuclei RNA sequencing reveals distinct transcriptomic signatures of rat dorsal root ganglia in a chronic discogenic low back pain model

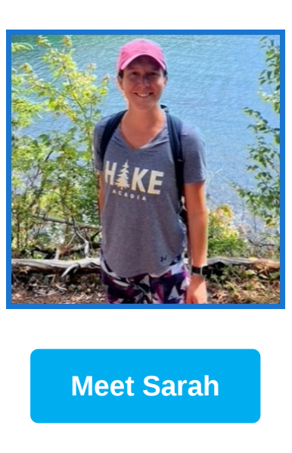
Sydney M Caparaso, Ishwarya Sankaranarayanan, David J Lillyman,
Theodore J Price, Rebecca A Wachs
DOI: 10.1016/j.jpain.2025.105590

Introduction of the topic
Chronic low back pain is one of the most common causes of disability in the world, and disc degeneration is strongly related to it. In many patients, the painful structure is the intervertebral disc itself, which is called discogenic low back pain. As the disc degenerates, the extracellular matrix breaks down, and nerve fibers start to grow into areas that are normally not innervated. This may lead to ongoing mechanical and inflammatory activation of pain-signaling sensory neurons. The dorsal root ganglion, or DRG, is an important place where these pain signals are processed at the peripheral level. However, although DRG changes have been studied in other pain conditions, they have not been well examined in discogenic low back pain. This study aimed to fill that gap by analyzing gene expression changes in the DRG in a rat model of chronic discogenic low back pain.

Methods
The authors first created a reference dataset by performing single-nuclei RNA sequencing on T13-L1 bilateral DRGs from healthy male and female rats. This "anchor" dataset was used to identify normal DRG cell subtypes. They then induced chronic low back pain in female Sprague Dawley rats by mechanically injuring the L5-L6 disc and waiting 15 weeks for painful disc degeneration to develop. After that, they collected T13-L1 bilateral DRGs from sham and injured animals and performed single-nuclei RNA sequencing. They also measured pain-like behavior using grip strength and pressure algometry and examined disc innervation with CGRP immunohistochemistry. Bioinformatics analysis was performed using standard pipelines including quality control, clustering, UMAP visualization, and differential gene expression analysis.

Major findings and why they are significant
The study identified 18 distinct DRG subpopulations and showed that the rat DRG profile was broadly similar to existing mouse and cross-species atlases. In the chronic pain model, the authors found increased expression of pain-related genes such as Scn9a and Piezo2, as well as neuroinflammatory mediators including Fstl1 and Ngfr. Importantly, increased expression of Scn9a, Fstl1, and Ngfr were all significantly correlated with the severity of axial hypersensitivity measured by grip strength. These findings are important because they connect structural degeneration of the disc with molecular changes in sensory neurons that may drive persistent pain. This kind of work is exactly the type of bridge between orthopedic tissue degeneration and pain neuroscience that I also hope to build in my own research. I am currently performing snRNA-seq on the brain (prefrontal cortex) of mice in a pain model, so please stay tuned for the results.

ORS Spine Section Early Career Investigator Highlight



Meet Sarah

Sarah E. Gullbrand, PhD
Research Assistant Professor
University of Pennsylvania Department of Orthopaedic Surgery
Gullbrand Lab

"When I was in grade school, I was in a car accident and suffered from whiplash and subsequent back pain that I've had to manage for most of my life. When I got interested in biomedical research as an undergrad, I sought out Dr. Eric Ledet's laboratory as he was the only faculty in BME at RPI conducting spine research. I started as an undergraduate researcher in his laboratory in 2008 – I absolutely fell in love with spine research then and haven't left the field since!"

Share with Us!

Section Member Contributions for Future Section Newsletters

If you have suggestions for Section Member Spotlight interviews, contributions to the ORS Annual Meeting, or any other news for our section, please contact Neharika Bhadouria, PhD or Derek Rosenzweig, PhD.

For publications showing your latest work, please send a Word document including the following: Full reference, link to the original paper, and a 100 word digest of the study. A graphical abstract is optional but highly encouraged.

Orthopaedic Research Society
9400 W. Higgins Road, Ste. 225
Rosemont, Illinois 60018
(847) 823-5770
ors@ors.org