2026 USASP Annual Scientific Meeting Program

March 23-26, 2026 | Loews Philadelphia Hotel, Philadelphia, PA

Updated on 1.20.26: More information to come

Monday, March 23, 2026 – Pre-conference Workshops

8:00 – 12:00pm

Board of Directors Meeting

12:00 – 4:00pm

2026 USASP Sickle Cell Disease Pre-Conference Workshop

Connecting Minds, Improving Lives: Collaborative Pain Research in Sickle Cell Disease

Organizers: Lakeya McGill, PhD & Keesha Roach, PhD, RN, FAAN (USASP SCD SIG) with SCDPAIN

Join us for a dynamic and highly interactive half-day workshop designed to build bridges across disciplines and accelerate progress in pain research for people living with sickle cell disease (SCD). This pre-conference session will bring together researchers, clinicians, trainees, people with lived experience, and partners from policy and industry to share ideas, foster collaboration, and spark innovation.

The program features short "spark talks" from emerging investigators and field leaders, a trainee presentation blitz, and a keynote from a person with lived experience. Through small-group rotations and networking activities, participants will have the opportunity to explore new research directions, discuss challenges and solutions in interdisciplinary SCD pain research, and form lasting collaborations.

Whether you are a seasoned investigator or new to SCD research, this workshop offers a unique opportunity to connect, learn, and contribute to improving the lives of people with sickle cell disease through meaningful scientific partnership.

1:00 – 5:00pm

Positioning Your PCORI Proposal for Success: Practical Tools for Pain Researchers

Organizers: Mark Bicket, MD, PhD, FASA & Erin Krebs, MD, MPH

This second annual, highly rated workshop returns with a proposal-readiness focus, designed for both PCORI-curious investigators and those refining or resubmitting applications. The afternoon will begin with a live demonstration of a patient engagement panel, providing a practical look at how to meaningfully involve stakeholders in the initial stages as your study is designed, clarifying a step that is often expected yet difficult to operationalize. From there, faculty and patient partners will walk through real examples, frameworks, and mini-rubrics used to justify comparator choices, design engagement plans, and address reviewer expectations around patient-centeredness. Attendees will choose between two hands-on breakout paths, clinical trial design or patient engagement planning, with each aimed at producing concrete, fundable components, including sample structures and compelling justifications. Whether

you are planning a submission in the next 12-24 months or seeking to strengthen a future concept, this workshop offers insight shaped by funded investigators, patient partners, and review-process insiders. Networking included. Reserve your spot and leave better prepared to draft, refine, and position your PCORI proposal for success.

1:00 – 4:00pm

PRECISION Human Pain Network Workshop
Organizers: Ted Price, PhD and Rob Gereau, PhD
Sponsored by: Wash U and UT Dallas Pain Centers

PRECISION Human Pain Network PIs and scientists within the group will give an update on data generated within each of the 4 centers, network wide projects, and opportunities for collaboration. Time will be allocated for discussion of how to work with PRECISION data. Time will also be allotted for brainstorming ideas for the potential next phase of PRECISION projects.

1:00 – 5:00pm

Music-Based Interventions for Pain Management Workshop
Organizers: NIH-funded Music Research Networks (Music4Pain, AudioAnalgesia, and ENSEMBLE)

The NIH-funded Music Research Networks (Music4Pain, AudioAnalgesia, and ENSEMBLE) invite you to participate in a half day workshop focused on music-based interventions for pain management. The workshop will 1) introduce attendees to a wide range of music-based interventions for acute and chronic pain management, 2) present the current state of the evidence related to mechanisms underlying the hypoalgesic effects of music-based interventions, 3) discuss methodological challenges and offer recommendations for high-quality mechanistic research on music-based interventions for pain, 4) introduce technological advances related to the measurement of brain activity during active music making, 5) present a newly developed music-based interventions taxonomic framework to guide the design of mechanistic studies in music for pain, and 6) discuss challenges in using animal models in music-induced hypoalgesia studies. The workshop will end with an optional mentoring session during which attendees can receive feedback on their research ideas related to music for pain management.

Registration for all pre-conference workshops is part of the 2026 USASP Annual Scientific Meeting Registration form.

12:30 – 4:30 pm

2026 Leadership Academy Workshop (LA Scholars only)

11:45 – 4:30 pm

2026 USASP Early Career Forum (ECF)

11:45 – 12:50 pm

Lunch
Room: Regency Ballroom, upper second floor

TUESDAY, MARCH 24

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1:00 – 2:50pm	**Choose Your Own Adventure:** Pick your first session (1:00-1:50 pm) then switch to another session (2:00-2:50pm) (1) **Journal of Pain Editorial Fellowship Program Panel:** Learn about an overview of the program and hear about individuals' experiences. Panelists will also provide tips for publishing. (2) **Industry and Non-Academic Career Panel:** Explore diverse career paths beyond academia with professionals who have made these transitions, gaining practical advice on how to navigate similar paths. (3) **Funding Mechanism Panel:** Learn about how funding works across several agencies, including the NIH, as well as information about the new NIH scoring system.
3:00 – 3:50pm	**Mentor Roundtable Discussions** The Mentorship Roundtables session will facilitate guided discussions with mentors at various career stages, providing networking and learning opportunities tailored to both clinical and basic science researchers. **Room:** Regency Ballroom, upper second floor
4:00 – 4:30pm	**Rapid Fire Poster Session** **Room:** Regency Ballroom, upper second floor
4:30 – 5:00pm	**2025 Leadership Academy Cohort Debrief (LA Scholars only)**
4:30 – 6:30 pm	**President's/Welcome Reception** All attendees are welcome to attend. Come for light hors d'oeuvres and a cash bar will be provided. Exhibitors will be present. **Room:** Regency Ballroom, upper second floor
5:15 – 5:45pm	**USASP Fellows Recognition and Pinning Ceremony** **Room:** Regency Ballroom, upper second floor

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Tuesday, March 24, 2026 – Main Meeting Day 1

8:30 – 9:00am

Empathy, Resilience & Creativity as Tools of Resistance in the Fight for Pain Relief: Perspectives from a Person Living with Chronic Pain

Quána Madison, MS, Person with Lived Experience (PWLE) of pain

Room: Regency Ballroom, upper second floor

9:00 –10:00am

Innovating Pediatric Pain Care: The Promise and Practice of Digital Therapeutics

Jennifer Stinson, RN-EC, PhD, CPNP, FAAN, The Hospital for Sick Children (SickKids) in Toronto

Room: Regency Ballroom, upper second floor

10:15 – 11:30am

Poster Session A

Room: Millennium Hall, lower second floor

11:30 – 11:45am

Break

11:45 – 1:15pm

Symposia Block #1 (TUES)

Innovations in Pain Therapeutics: Translating Novel Mechanisms Into Real-World Relief

William Schmidt[1], Clarence Kong[2], Peter Lascarides[3], Lisa Witkin[4]

[1]Parliamentarian, Eastern Pain Association President, NorthStar Consulting, LLC, [2]Nominations Committee Member, Eastern Pain Association Associate Director of Interventional Spine and Pain Management Long Island Brain & Spine Good Samaritan University Hospital/Catholic Health, [3]Director, Department of Pain Management Northern Westchester Hospital Assistant Professor of Physical Medicine & Rehabilitation Donald and Barbara Zucker School of Medicine at Hofstr, [4]President, Eastern Pain Association Associate Professor of Clinical Anesthesiology New York-Presbyterian/ Weill Cornell

The landscape of pain therapeutics is rapidly evolving, with an unprecedented wave of FDA-approved drugs, devices, and digital therapeutics offering new avenues for acute and chronic pain management. This session spotlights novel mechanisms of action and emerging technologies that are redefining the practice of pain medicine and patient engagement.

Modeled after the Eastern Pain Association's long-running "Innovations in Research" series (2011-2025), the symposium will feature concise, high-impact presentations highlighting newly approved or late-stage analgesic products—including suzetrigine (Journavx), new intravenous meloxicam formulations (Xifyrm, Qamzova), next-generation spinal cord stimulation systems, virtual reality devices (e.g. EaseVRx) for chronic pain, and late-stage products still in Phase 3 clinical development including cebranopadol (a nociceptin-orphanin FQ receptor-targeted agent) and PF-614 (a novel

trypsin-activated, abuse-deterrent oxycodone prodrug). Each segment will cover mechanism, indications, safety, patient acceptance, and integration into multimodal practice.

Speakers will represent complementary disciplines—clinical care, translational science, and product development—offering diverse institutional and experiential perspectives. Following each talk, moderated audience participation will emphasize real-world experience: where these products succeed, where they fall short, and how clinicians can navigate adoption safely and effectively.

We'll close with a discussion of translational and regulatory barriers that slow analgesic innovation, outlining practical ways clinicians, scientists, and industry can collaborate to accelerate safe, evidence-based advances in pain management.

Keywords: Clinical care and/or patient advocacy, Therapeutics

11:45 – 1:15pm **Symposia Block #1 (TUES)**

Evaluating Real World Non-Pharmacologic Treatment Strategies in Chronic Pain: Insights from Embedded Pragmatic Trials

Steven George[1], Natalia Morone[2], Kathleen Sluka[3]
[1]Duke University, [2]Boston University, [3]University of Iowa

Non-drug interventions are considered effective and low-risk for management of chronic pain, yet are often underutilized. The majority of randomized clinical trials in pain research test efficacy (e.g. selective enrollment, laboratory settings). However, individuals with chronic pain often have co-morbid conditions and are treated in real-world settings. The NIH through the HEAL Initiative and in partnership with DoD/VA have provided substantial resources for conducting pragmatic trials designed to determine effectiveness of non-drug interventions in real-world settings. This symposium describes three large, embedded pragmatic trials. The Fibromyalgia TENS in Physical Therapy Study (FM-TIPS) examined effectiveness of adding TENS to outpatient physical therapy on movement-evoked pain and fatigue (FM-TIPS). FM-TIPS enrolled 359 participants with fibromyalgia across 28 outpatient physical therapy settings located in both rural and urban settings across the Midwest. The study showed that TENS produced a clinically meaningful reduction in movement-evoked pain and fatigue that lasted through 6 months. Optimizing Pain Treatment In Medical settings Using Mindfulness (OPTIMUM) examined if telehealth-delivered group mindfulness for chronic low back pain reduced pain, pain interference and psychological function. OPTIMUM enrolled 451 individuals from 3 health care system primary care practices across 3 states. Initial results will be presented. The Improving Veteran Access to Integrated Management of Back Pain (AIM-Back) enrolled individuals seeking primary care for low back pain and examined effectiveness of two different non-drug care pathways on pain interference and function. AIM-Back analyzed 1817 individuals across 17 different primary care clinics with results demonstrating no care pathway superiority, but there was a

subgroup identified in planned responder analyses. After the presentations, a question and answer session will provide the opportunity for participants discuss details of individual trials, barriers and facilitators to conducting pragmatic trials in chronic pain populations, and advantages and opportunities with testing effectiveness instead of efficacy.

Keywords: Clinical/ Trans. Research, Psychological Pain Therapies; Physical Therapy, Fibromyalgia

11:45 – 1:15pm **Symposia Block #1 (TUES)**

RITA ALLEN SCHOLARS/ MAYDAY CLINICAL TRANSLATIONAL RESEARCH AWARD SCHOLARS PANEL
More details coming soon!

11:45 – 1:15pm **Symposia Block #1 (TUES)**

The Chicken or the Ache? Untangling the Relationship of Multisensory Sensitivity and Chronic Pain
Stephanie Voss[1], Andrew Schrepf[2], Dan Wang[3], Laura Payne[4]
[1]Brigham & Women's Hospital, [2]Michigan Medicine, [3]University of Virginia School of Medicine, [4]Harvard Medical School

Multisensory sensitivity (MSS; also known as sensory hypersensitivity and generalized sensory sensitivity) reflects the experience of heightened responses to sensory stimuli, including tactile, visual, olfactory, auditory, and somatic. Recent research has demonstrated that individuals with chronic pain conditions experience increased MSS compared to those without chronic pain, and MSS is associated with the experience of chronic pain over time. This symposium will present data demonstrating how MSS is related to pain experience across chronic pain and healthy populations and whether MSS can be conceptualized as a “cause” or “consequence” of pain.

The moderator, Dr. Stephanie Voss, will introduce the symposium, engage the audience in a sensory exercise, and discuss her lived experience of MSS and pain. Using data from the MAPP Research Network and a large study of analgesic response to surgery in total hip arthroplasty and hysterectomy cohorts, Dr. Andrew Schrepf will demonstrate that the brief assessments of MSS in the form of short screening measures tracks strongly with multiple forms of central nervous system sensitization and are predictive of treatment failure. Next, Dr. Dan Wang will present on the development and validation of the Multisensory Amplification Scale and discuss how findings from her research suggest MSS as a potential risk or resilience factor in the development and maintenance of coexisting chronic pain conditions. Finally, Dr. Laura Payne will explore the role of MSS in adolescents with menstrual pain and show how heightened sensory sensitivity interacts with menstrual pain trajectory and is associated with increased widespread pain over one year. The symposium will conclude with an engaging discussion among the presenters and the audience, with the aim of tackling questions about the importance of consistent terminology, the classification of MSS as a neurobiological difference, and the need for treatment approaches to address sensory processing.

Keywords: Clinical/ Trans. Research, Chronic pain symptoms; Resilience, Pelvic Pain; Pediatric Pain

11:45 – 1:15pm

Symposia Block #1 (WED)

Perceived Healthcare Discrimination and Pain Severity: Insights from the All of Us Research Program

Anitha Saravanan[1], Staja Booker[2], Keesha Roach[3], Ericka Merriwether[4]
[1]Northern Illinois University, [2]University of Florida, [3]Rutgers University, [4]NYU Grossman School of Medicine

Persistent disparities in pain management reflect the enduring influence of structural inequities and discrimination in healthcare. Perceived healthcare discrimination (PHCD), patients' experiences of feeling dismissed, disrespected, or unfairly treated by healthcare professionals, represents a modifiable social determinant of pain and an underexplored driver of pain inequities. This symposium examines perceived healthcare discrimination (PHCD) as a modifiable social determinant of pain using data from the *All of Us Research Program*, one of the most diverse national cohorts to date. Dr. Anitha Saravanan presents findings from over 89,000 adults demonstrating that frequent PHCD is associated with nearly eightfold higher odds of severe pain, introducing the *Perceived Healthcare Discrimination Index (PHCDI)* as a novel metric for population-level research. Dr. Staja Q. Booker contextualizes these findings through psychosocial frameworks and lived experiences of marginalized populations, emphasizing communication and empathy as protective factors. Dr. Ericka N. Merriwether explores the intersection of PHCD with functional health, highlighting implications for physical performance and pain interference. Dr. Keesha Roach concludes with strategies for translating these findings into bias-reduction initiatives and equity-focused clinical practices. Together, presenters integrate data science, rehabilitation, and nursing perspectives to advance equity-driven pain research. The symposium underscores the importance of addressing discrimination as a modifiable factor in pain assessment and management to reduce disparities and improve person-centered outcomes.

Collectively, the symposium underscores the need to recognize discrimination as a measurable, modifiable factor in pain research and clinical care. The discussion will highlight how integrating social determinants into pain assessment and management frameworks can drive equitable, person-centered care and policy transformation.

Keywords: Clinical care and/or patient advocacy, Health care discrimination, Marginalized populations

1:15 – 2:15pm	**Lunch** Committee Meetings Special Interest Group Meetings IDEA Committee & High Priority Awards for Early Career Investigators
2:15 – 3:30pm	**Poster Session B** **Room:** Millennium Hall, lower second floor
3:30 – 3:45pm	**Beverage Break**
3:45 – 5:15pm	**Symposia Block #2 (TUES)**

Dorsal Root Ganglion and Spinal Cord Stimulation in Treating Chronic Pain - New Mechanistic Insights and Clinical Perspectives

Parag Patil[1], Yun Guan[2], Bin Feng[3], Longtu Chen[4]
[1]University of Michigan, Ann Arbor, MI, [2]Johns Hopkins University, Baltimore, MD, [3]University of Connecticut, Storrs, CT, [4]CF Neuromedics, Inc.

Implantable neuromodulation therapies, including spinal cord stimulation (SCS) and dorsal root ganglion (DRG) stimulation, are established, non-opioid treatments for refractory chronic neuropathic pain. Clinical studies consistently demonstrate their efficacy in reducing pain and improving quality of life. Historically, complications and long-term explanation limited their use as "last-resort" options, but recent years have seen broader adoption driven by improved outcomes, expanded indications, and device innovations.

Mechanistic understanding has advanced in parallel with clinical progress, narrowing the gap between application and theory. Preclinical and translational studies implicate spinal inhibitory mechanisms, particularly restoration of GABAergic tone, alongside modulation of excitatory neurotransmission (e.g., glutamate and adenosine pathways) and attenuation of glial activation and neuroinflammation as contributors to SCS-mediated analgesia. At the DRG level, modulation of the T-junction, altered somatic excitability, and selective transmission block of nociceptive signaling are emerging as key mechanisms underlying DRG stimulation's focal efficacy. Recent findings also reveal that sub-kilohertz electrical stimulation of the DRG or peripheral nerves can reversibly block Aδ- and C-fiber transmission, providing a mechanistic basis for selective nociceptor suppression and inspiring next-generation device concepts.

This symposium brings together leading experts across clinical, basic, and translational neuroscience. **Dr. Parag Patil** (University of Michigan) will discuss clinical challenges and opportunities for SCS and DRG stimulation. **Dr. Yun Guan** (Johns Hopkins University) will review recent cellular and neurochemical insights into SCS mechanisms. **Dr. Bin Feng** (University of Connecticut) will present new data showing sub-kilohertz DRG stimulation reversibly blocks afferent transmission. **Dr. Longtu Chen** (CF Neuromedics, Inc.) will introduce SmartStim™, a next-generation platform integrating electrical and pharmacological modulation.

Together, these presentations highlight how basic and translational pain research are driving device innovation, aiming to make neuromodulation a front-line therapy for chronic pain.

Keywords: Clinical/ Trans. Research, Neuromodulation

3:45 – 5:15pm

Symposia Block #2 (TUES)

Biomarkers and Physical Activity Across the Lifespan: Mechanistic Insights into Pain and Recovery

Guillermo Ceniza Bordallo[1, 2], Marina López Solá[3], Ruth LP Chimenti[4], Emily Bartley[5]
[1]Harvard Medical School, [2]Mass General Brigham, [3]Universidad de Barcelona, [4]University of Iowa, [5]University of Florida

Understanding the complex interplay between biological, psychosocial, neural, and behavioral mechanisms of pain across development is essential to advance precision interventions. This multidisciplinary workshop brings together experts in neuroscience, rehabilitation science, and pediatric pain to explore how multimodal biomarkers can illuminate the pathways connecting physical activity, stress physiology, and pain modulation from childhood through adulthood.

Dr. Guillermo Ceniza-Bordallo (Massachusetts General Hospital / Harvard Medical School) will present data integrating physical activity, chronic stress, heart rate variability, and functional neuroimaging (fNIRS) to identify physiological and neural markers of resilience in children with and without chronic pain. His work highlights how movement behaviors interact with autonomic and cortical mechanisms to influence pain sensitivity and functioning.

Dr. Marina López-Solà (University of Barcelona) will discuss recent findings from neuroimaging and psychophysiological studies examining alterations in somatomotor and prefrontal networks underlying strength and physical functioning in pediatric pain. Her research links disrupted motor-related brain circuits with reduced movement confidence and explores how rehabilitative interventions can restore neural function and improve daily activity.

Dr. Ruth Chimenti (University of Iowa) will bridge these perspectives with a focus on movement and imaging biomarkers in adults with musculoskeletal pain. By integrating kinematic analysis with systemic and peripheral markers, her work provides translational insights into how aberrant movement patterns and physiological stress responses contribute to chronicity and recovery.

Together, the presentations will provide a cohesive, lifespan framework addressing how physical activity interfaces with biological and neural systems to drive pain adaptation. The discussion will emphasize the translational potential of multimodal biomarkers for tailoring interventions, enhancing rehabilitation outcomes, and ultimately promoting resilience across the continuum of pain development and recovery.

Keywords: Behavioral and social sciences, Biomarkers, Lifespan, Pediatric pain, musculoskeletal

3:45 – 5:15pm

Symposia Block #2 (TUES)

Temporomandibular Disorders: From Patient Experience to Translational Science - A Multi-Dimensional Approach to Understanding TMDs

Yenisel Cruz-Almeida[1], Jennifer Feldman[2], Alejandro Almarza[3]
[1]University of Florida, [2]Ohmyjaw Inc., [3]University of Pittsburgh

Temporomandibular disorders (TMDs) affect an estimated 5-12% of the population, with women disproportionately impacted. Despite their prevalence and significant impact on quality of life, TMDs remain poorly understood from both mechanistic and clinical perspectives. The multi-dimensional nature of TMDs, encompassing mechanical dysfunction, inflammatory processes, various pain components, and psychosocial factors, requires an integrated research approach that bridges patient experience, basic science, and clinical translation. This 90-minute symposium addresses critical gaps in TMD research through three complementary presentations that provide a comprehensive, translational perspective. The symposium begins with the patient voice, as Jennifer Feldman illuminates the lived experience of TMDs, highlighting the diagnostic odyssey patients navigate, the cascading effects across multiple life domains, and the psychological toll of chronic orofacial pain. This patient-centered foundation emphasizes why research priorities must extend beyond mechanism identification to include quality-of-life measures and treatment accessibility.

Dr. Alejandro Almarza then presents current preclinical approaches to studying TMJ osteoarthritis, reviewing mechanical loading, inflammatory, and genetic models. He will discuss recent advances in recapitulating the human condition, particularly in understanding the tissue damage-pain relationship, while addressing the inherent challenges of translating animal model findings to clinical applications.

Dr. Yenisel Cruz-Almeida concludes by showcasing integrated clinical phenotyping approaches that combine self-reported measures, quantitative sensory testing, and emerging biomarkers including genetic factors, and neuroplasticity indicators. This presentation demonstrates how comprehensive phenotyping identifies clinically meaningful subgroups within the heterogeneous TMD population to guide personalized treatment strategies.

By integrating patient advocacy, preclinical mechanistic insights, and clinical translational research, this symposium provides attendees with a holistic understanding of current TMD research directions. The 30-minute discussion period will facilitate dialogue across these perspectives, fostering collaborative approaches to advancing therapeutic targets and improving outcomes for individuals living with TMDs.

Keywords: Clinical/ Trans. Research, TMD

3:45 – 5:15pm **Symposia Block #2 (TUES)**

Hormones and Pain Across the Lifespan: From Animal Models to Clinical Care

Michael Jankowski[1], Edita Navratilova[2], Hadas Nahman-Averbuch[3]
[1]Cincinnati Children's Hospital Medical Center, [2]University of Arizona, [3]Washington University in St. Louis

Hormones regulate many body functions however, their involvement in pain has not been extensively studied. This symposium includes three experts in the neuroendocrinology of pain who use animal models and human participants with and without chronic pain to better understand hormonal influences on pain across the lifespan. This symposium will help the attending professionals maintain an up-to-date knowledge of innovative advances in hormone-pain research and how preclinical research findings translate into clinical outcomes or novel therapies.

Dr. Jankowski will present his research on how growth hormone is an essential factor in normal somatosensory development and how it plays a critical role in the transition from acute to chronic post-surgical pain in neonates. The role that this hormone plays in modulating immune cell function early in life will be discussed in relation to its influence on neonatal nociceptive priming phenomena. The translatability of their preclinical findings will also be reviewed.

Dr. Navratilova will discuss the role of prolactin in female selective nociceptor sensitization observed across mice, monkeys, and humans. She will present her preclinical research demonstrating that prolactin-mediated nociceptor sensitization may contribute to female-specific pain conditions such as endometriosis and comorbid migraine. These findings offer a pathway for improved pain therapy in females by targeting prolactin signaling.

Dr. Nahman-Averbuch will present the relationships between sex hormones and experimental pain and clinical pain in individuals with and without chronic pain. The effect of age on these relationships will be discussed comparing data from adolescents and adults. Lastly, the potential use of androgens as a chronic pain intervention will be discussed.

Keywords: Clinical/ Trans. Research, Neurobiology, Animal Models, Human Neuroimaging, Pediatric pain, post-surgical pain

3:45 – 5:15pm **Symposia Block #2 (TUES)**

The IMPOWR-YOU Patient Experience Study: A Community-Engaged Approach to Understanding Chronic Pain Care for People Who Use Opioids

Christin Veasley[1], Ann Quinlan-Colwell[2], Michele Bounora[3]
[1]Chronic Pain Research Alliance, [2]American Society for Pain Management Nursing, [3]Montefiore Einstein

Research in non-pain settings shows that patient experience measures—

capturing clinician and staff interactions in domains such as communication and care coordination— strongly correlate to care quality and outcomes. Yet, no studies have examined how those with chronic pain who use opioids experience their pain care, despite this group facing profound healthcare system challenges. Further, few studies have included a community-engaged design with patients and other key partners, an approach essential to improving research relevance, rigor, and real-world impact. The *IMPOWR-YOU Patient Experience Study* addresses these gaps through a novel, community-engaged framework that compares patients' "best" and "worst" clinical encounters to identify factors influencing perceptions of pain care quality. Co-led by an academic researcher and a patient partner and guided by a multidisciplinary Advisory Team - including Veterans, clinicians, researchers, insurers, and patients - the project was collaboratively designed and executed. Surveys were adapted from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) and completed by adults with chronic pain (>3 months) and prescribed/non-prescribed opioid use (>6 months), recruited through four patient advocacy organizations. Participants' narratives yielded novel, actionable insights into how clinician behaviors, communication, and care coordination influence perceptions of pain care quality and opportunities for system improvement. Ms. Veasley will provide an overview of our approach and describe how community-engaged research principles were applied across all stages of the research lifecycle, highlighting best practices and application of insights throughout. Dr. Buonora will present the major findings from the study, highlighting which patient experience domains most strongly correlated with perceptions of pain care quality as well as results from thematic analysis of patient narratives. Lastly, Dr. Quinlan-Colwell will discuss real world implications of our work and highlight opportunities for improving chronic pain care through professional partnerships. Time will be allocated for questions and interactions between the panelists and audience.

5:15 – 5:30pm **Transition**

5:30 – 7:00pm **Special Interest Group Meetings**

PWLE Engagement Committee: Community of Practice Session

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Wednesday, March 25, 2026

8:30 – 9:00am	**Gold-Haythornthwaite Lifetime Achievement Award Presentation**
9:00 – 10:00am	**Neural Circuits and New Therapeutics for the Multiple Dimensions of Pain** Speaker**:** Grégory Scherrer, PharmD, PhD, University of North Carolina at Chapel Hill **Room:** Regency Ballroom, upper second floor
10:15 – 11:30am	**Poster Session C** Room: Millennium Hall, lower second floor
11:30 – 11:45am	**Break**
11:45 – 1:15pm	**Symposia Block #3 (WED)**

Unique and shared elements of different psychological therapies for chronic pain: A panel discussion

Francis Keefe[1], Mark Lumley[2], Katherine Gnall[3], Katherine McDermott[4], Ana-Maria Vranceanu[5]
[1]Duke University, [2]Wayne State University, [3]University of Connecticut, [4]Massachusetts General Hospital, [5]Harvard Medical School

Cognitive Behavioral Therapy (CBT) changed the way that pain was treated by demonstrating that psychological processes could contribute to the development and maintenance of chronic pain. CBT has long been considered the “gold-standard” psychological therapy for chronic pain. There has been an expansion in new pain therapies that use potentially novel methods to address chronic pain, including emotional and exposure-based approaches. There is considerable debate in the field about the extent to which newer therapies differ from traditional CBT. This panel will discuss similarities/differences between psychological treatments for chronic pain through diverse perspectives, including from the developers of these treatments and a trainee studying them:
- Frank Keefe will discuss CBT. Dr. Keefe is the developer of the CBT pain coping skills therapy.
- Mark Lumley will discuss Emotional Awareness and Expression Therapy (EAET) and Pain Reprocessing Therapy (PRT). Dr. Lumley co-developed EAET and is actively involved with PRT trials.
- Katherine Gnall will present the trainee perspective. Katherine is completing her Clinical Psychology PhD with a focus on delivering and testing chronic pain interventions.

Keywords: Clinical/ Trans. Research, Psychological Pain Therapies

11:45 – 1:15pm **Symposia Block #3 (WED)**

Bioenergetic regulation of nociceptive signaling
Douglas Wright[1], Derek Molliver[2], Juliana Navia Pelaez[3]
[1]University of Kansas Medical Center, [2]University of New England College of Osteopathic Medicine, [3]St. Louis University School of Medicine

A growing body of evidence supports bioenergetic regulation in sensory neurons and nociceptive circuits as a set of dynamic and highly regulated processes with major impacts on neuronal excitability, sensitivity, and cellular homeostasis. These processes likely impact the progression of acute and chronic pain across syndromes as well as neurodegenerative conditions. Dr. Wright's presentation will focus on the capacity of nociceptors to rapidly increase bioenergetic activity in response to various stimuli, including bacterial components, chemotherapy, and glycolytic metabolites, and the consequences of these rapid changes *in vivo* and *in vitro*. These mechanisms likely play an important role in nociceptive surveillance and in chronic diseases that impact nociceptive function, including diabetes. In addition, Dr. Wright will address how various dietary interventions, such as the ketogenic diet, may rebalance bioenergic remodeling and normalize nociceptor function and structure. These findings may lead to translational approaches to correct aberrant nociceptor activity. Dr. Molliver will discuss the current understanding of mitochondria as signaling hubs and their contributions to multiple models of pain. He will present evidence for anti-nociceptive actions of mitochondrial uncoupling drugs in mouse, along with results from phospho-protein mass spectrometry in a human sensory neuron cell line, implicating novel molecular mechanisms in the actions of uncoupling drugs. Dr. Navia will describe alterations in glycolysis and lipid metabolism in microglia that lead to sustained pro-inflammatory gene expression in spinal tissue and facilitate chronic pain in chemotherapy-induced peripheral neuropathy (CIPN) and other chronic pain states. She will highlight two key metabolic enzymes that drive spinal cell metabolic reprogramming in CIPN and discuss their potential as novel therapeutic targets.

Keywords: Basic science/preclinical, Neurobiology, Animal Models

11:45 – 1:15pm **Symposia Block #3 (WED)**

Neural Insights of Pain in the Context of Opioid Use and Misuse
Katherine Martucci[1], Saloni Mehta[2], José Morón-Concepcion[3], Brett Froeliger[4]
[1]Duke University School of Medicine, [2]Yale School of Medicine, [3]Washington University in St. Louis, [4]University of Missouri

Opioid analgesics are frequently prescribed as effective pain medications in the acute setting. However, they are less effective chronically, with increased pain sensitivity with continued use. Sensory and affective aspects of the pain experience may increase the risk of opioid misuse and recurrence of opioid use. Neuroimaging can help elucidate the brain mechanisms underlying pain and opioid misuse.

This symposium will present work informing the neural mechanisms of the pain experience in opioid use and misuse. It will cover neuroimaging findings from individuals with chronic pain using prescription opioids, misusing opioids, and in individuals with opioid use disorder (OUD) with or without chronic pain. It will also shed light on the potential mechanisms and proactive regulation of negative affect in pain.

The first talk will use resting-state and reward-task based functional MRI to compare individuals with widespread chronic pain who take prescription opioids with those who do not, highlighting how chronic pain and long-term prescription opioid use interactively influence central nervous system activity. We will then share whole-brain functional connectivity patterns of pain-related measures in OUD and examine their overlap with normative mu- and kappa-opioid receptor distributions, providing systems-level and possible mechanistic insights. This will be followed by preclinical findings, including behavioral and rodent PET imaging, supporting the role of the kappa opioid receptor as a potential target to reverse the emergence of negative affective states, with discussion on noninvasive approaches to target them. Finally, we will share functional connectivity results associated with the proactive regulation of negative emotions in participants with chronic pain misusing opioids, with a discussion on potential strategies for treating emotional dysregulation.

Overall, a better understanding of the neural mechanisms discussed in this symposium will help inform preventative strategies for opioid misuse in individuals experiencing pain, and for effective pain management in co-occurring pain and OUD.

Keywords: Basic science/humans, Neurobiology, Animal Models, Comorbid SUD

11:45 – 1:15pm

Symposia Block #3 (WED)

When Fat Hurts: Lipedema as a Model for Understanding Chronic Pain Biology

Dr. Tim Hucho[1], Dr. Kelsey Collins[2], Dr. Steven Dean[3], Jonathan Kartt[4], Kasi Grosvenor[4]
[1]University of Cologne, [2]University of California San Francisco, [3]The Ohio State University Wexner Medical Center, [4]Lipedema Foundation

Lipedema is a widespread but underrecognized chronic disorder marked by disproportionate, painful fat accumulation, most often in the lower body. It presents both a clinical challenge and a scientific opportunity for the pain research community. Despite its prevalence and the significant burden of pain, tenderness, swelling, and bruising, the biological mechanisms driving pain in lipedema remain poorly understood.

Although lipedema primarily affects women, few data-driven treatments exist, and limited public and clinical awareness continue to impede accurate diagnosis and management. This workshop aims to raise awareness within the USASP

community by highlighting emerging basic, translational, and clinical research that seeks to uncover the mechanisms and manifestations of pain in lipedema. Moderated by Jonathan Kartt, CEO of the Lipedema Foundation, and Kasi Grosvenor, a person living with lipedema and LF Project Manager, the session will foster constructive dialogue around unmet clinical needs, research gaps, and new opportunities for discovery.

Three investigators will offer complementary perspectives:
Dr. Steven Dean, clinician specializing in vascular and adipose disorders, will discuss clinical presentation, diagnostic challenges, patient pain experiences, and management strategies.

Dr. Tim Hucho, neuroscientist, will contextualize lipedema within chronic pain biology and share findings from quantitative sensory testing.
Dr. Kelsey Collins, biomedical engineer, will present a novel microphysiological model exploring the adipose-pain axis and offering a translational platform for mechanistic study.

Together, these talks aim to promote clinician-scientist collaboration, establish lipedema as a model for pain research in metabolic and connective-tissue disorders, and inspire new investigations into its pathogenesis, management, and treatment.

Keywords: Clinical/ Trans. Research, Women's Health, Lipedema

11:45 – 1:15pm

Symposia Block #3 (WED)

From Evidence to Action: Examining provider bias across pain populations and disciplines

Mark Vorensky[1], Margaret Rose-McCandlish[2], Lakeya S. McGill[3], Shanna Katz Kattari[4]
[1]Rutgers University, School of Health Professions, Department of Rehabilitation and Movement Sciences, [2]Indiana University Indianapolis, Department of Psychology, [3]University of Pittsburgh School of Medicine, Department of Medicine, [4]University of Michigan School of Social Work

Provider bias is a persistent contributor to inequities in pain care in the United States. Emerging evidence has expanded understanding of where, how, and why provider bias can occur in pain care, and how it affects patients' experiences in the healthcare system. This symposium convenes persons with lived experience (PWLEs), clinicians, and pain researchers to define, measure, and address provider bias across pain populations and disciplines. The presenters will share their current research on provider bias that uses experimental, mixed-methods, and qualitative designs. Dr. Mark Vorensky will share results from a national study characterizing bias in physical therapists' clinical decision-making for patients with chronic widespread pain. Then, Margaret Rose-McCandlish will explore the discrepancy between providers' reported clinical decision-making process and their enacted clinical behaviors using an aversive racism framework. Dr. Lakeya McGill will present her work on stigma experienced by patients with sickle cell disease and their caregivers presenting to the emergency department for pain care. Dr. Shanna Katz Kattari, a health researcher and a PWLE mentor in the HEAL K12, will enumerate how intersecting forms of provider bias are experienced by people with pain. In the final section of this symposium, evidence is translated into action. Attendees will engage in a structured group-based activity that begins with identifying and discussing challenges to addressing bias in their respective disciplines. Then, groups will work together to generate and critically evaluate realistic 'action items' directed at the identified challenges. Finally, group members will prioritize action items into visual action plans. The action plans, generated by each group, will be on display for attendees to view and discuss at the conclusion of the symposium. This interactive session will provide an opportunity for attendees to share perspectives, knowledge, and problem-solving strategies across basic, translational, and clinical research and practice.

Keywords: Clinical care and/or patient advocacy, Bias and Stigma, Sickle Cell Disease

1:15 – 2:15pm **Wednesday Lunch**

Journal of Pain Editorial Board Meeting
Special Interest Group Meetings
PWLE Engagement Committee Meeting

2:15 – 3:30pm **Poster Session D**
Room: Millennium Hall, lower second floor

3:30 – 3:45pm **Beverage Break**

3:45 – 5:15pm **Symposia Block #4 (WED)**

From Circuits to Clinics: Conceptual, Methodological, and Mechanistic Bridges at the Pain-Addiction Interface
Joao De Aquino[1], Anushree Karkhanis[2], Patrick Finan[3], Katrina Hamilton[4]
[1]Yale University, [2]Binghamtom University, [3]University of Virginia, [4]Johns Hopkins University

Chronic pain and substance use disorders (SUD) frequently co-occur, yet mechanistic and clinical work remain siloed. This symposium integrates a preclinical addiction neuroscientist, a pain psychologist, and an addiction psychiatrist to align reward-circuit mechanisms with psychophysical and clinical endpoints. **Talk 1 (Karkhanis)** will demonstrate that adolescent ethanol exposure induces persistent mechanical allodynia via nucleus accumbens dopamine dysregulation; targeted suppression of accumbal dopamine reverses allodynia, underscoring reward circuitry as a driver of pain sensitization. **Talk 2 (Finan)** will synthesize naturalistic studies at the opioid-sleep-pain interface and present new data showing how improving sleep continuity modifies prescription opioid craving and use in the contexts of acute and chronic pain. He will discuss patient-reported and ecological momentary assessment (EMA) endpoints that can map to laboratory measures. **Talk 3 (De Aquino)** will report on the first randomized, placebo-controlled within-subject human laboratory studies of delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) among persons with opioid use disorder (OUD receiving methadone. Informed by pharmacokinetics/pharmacodynamics (PK/PD), he will outline Phase 1/2 approaches that pair analgesia with SUD outcomes and embed quantitative sensory testing (QST). Across talks, we build a concrete bench-to-bedside crosswalk. We conclude with a **moderator-led discussion (Hamilton)** that will engage the audience to refine concepts and measures and foster transdiciplinary collaborations. Attendees will leave with (i) a shared vocabulary linking reward-circuit changes to human patient-reported and QST outcomes, (ii) considerations for reliable QST and medication-timed testing under opioids, and (iii) a template for experimental-medicine trials that test analgesia and addiction outcomes in tandem.

Keywords: Clinical/ Trans. Research, Addiction, Sleep, Comorbid SUD

3:45 – 5:15pm **Symposia Block #4 (WED)**

Rethinking Pain: Understanding the Interplay of Catastrophizing and Cognitive Function to Facilitate Precision Prevention and Treatment of Chronic Pain

Cory Alcon[1], Madelyn Frumkin[2], Pavithra Thomas[3]
[1]High Point University, [2]Dartmouth College, [3]University of Alabama at Birmingham

Pain is increasingly recognized not solely as a sensory event but as a complex perceptual and cognitive experience shaped by biological, psychological, and sociocultural influences. Among the cognitive determinants, pain catastrophizing—a maladaptive pattern of exaggerated threat appraisal, persistent rumination, and emotional distress—has emerged as a robust predictor of functional impairment and suboptimal treatment outcomes. Concurrently, cognitive dysfunction has been implicated in the onset and maintenance of chronic pain. Emerging evidence suggests a dynamic interplay between cognitive impairment and catastrophizing, wherein deficits in executive function may compromise an individual's ability to regulate maladaptive pain-related cognitions and behaviors. This symposium aims to deepen our understanding of catastrophizing and cognitive dysfunction as interrelated processes with key implications for chronic pain prevention and treatment. Pavithra Thomas, a pain psychology trainee, will present data on associations between cognitive function and pain outcomes in 270 adults with knee osteoarthritis. She will highlight age and socioeconomic disadvantage as moderators of these relationships. Cory Alcon, a physical therapist and researcher, will present data on the relationship between pain catastrophizing and cognitive function among 200 adults with chronic low back pain. He will discuss the clinical implications of this relationship, especially given high reliance on cognitive-behavioral approaches for pain management. Finally, Dr. Madelyn Frumkin, a pain psychologist and researcher, will present data on dynamic associations between cognitive function, catastrophizing, and pain experiences assessed via Ecological Momentary Assessment in over 2,000 surgical patients. She will discuss implications for precision medicine, including identifying patients that may benefit from cognitive approaches to preventing persistent post-surgical pain. This session seeks to inform the development of targeted, personalized interventions by highlighting cultural, contextual, and individual factors that shape associations between pain and cognitive risk factors.

Keywords: Clinical/ Trans. Research, Pain Catastrophizing, Post-surgical pain

3:45 – 5:15pm **Symposia Block #4 (WED)**

Sympathetic Plasticity in Neuropathic Pain

Lite Yang[1], Saad Yousuf[2], Nicole Scheff[3]
[1]Washington University, [2]University of Texas at Dallas, [3]University of Pittsburgh

Chronic pain syndromes frequently co-opt autonomic circuits, yet the cellular and circuit-level mechanisms by which the sympathetic nervous system (SNS), specifically regional sympathetic nerves, contributes to the initiation, maintenance, and spread of pathological pain remain undefined. This symposium brings together 3 recent, complementary studies that map sympathetic cell types and states in human tissue, demonstrate disease- and injury-driven sympathetic remodeling, and link autonomic dysfunction to clinical pain outcomes. First, Lite Yang from Washington University will present exciting new transcriptional and epigenomic atlases of human sympathetic and sensory ganglia which aid in establishing a detailed framework for exploring autonomic involvement in pain and neuropathy. These datasets reveal diverse sympathetic neuron subtypes and dynamic non-neuronal interactions that shift in disease states. Second, Saad Yousuf from University of Texas at Dallas will describe how disease- and injury-associated remodeling induces transcriptional changes consistent with autonomic dysfunction and sensory cross-talk using spatial profiling of human paravertebral sympathetic ganglia from diabetic patients. Lastly, Nicole Scheff from University of Pittsburgh will use reverse translation into preclinical models of head and neck cancer extend these insights to pain pathophysiology with new evidence that sympathetic remodeling following nerve injury promotes sensory neuron sensitization via an alpha 1 adrenergic mechanism, linking sympathetic-sensory interactions to both pain and tumor progression. Together, these studies converge on a model in which injury and disease trigger sympathetic plasticity that amplifies sensory neuron excitability and pain perception. Integrating high-resolution human atlases with mechanistic and clinical data now enables the identification of sympathetic biomarkers and therapeutic targets. This symposium will explore how targeting sympathetic remodeling can inform next-generation interventions for neuropathic, inflammatory, and cancer-associated pain.

Keywords: Clinical/ Trans. Research, Neurobiology, Neuropathic Pain

3:45 – 5:15pm

Symposia Block #4 (WED)

Artificial Intelligence and Clinical Informatics Approaches to Real-World Data in Chronic Pain Research

Selen Bozkurt[1], Yiyu Wang[2], Ashley Lewis[2], Titilola Falasinnu[2], Lola Falasinnu[2]
[1]Emory University School of Medicine, [2]Stanford University School of Medicine

Artificial intelligence and health informatics are reshaping chronic pain research by enabling the analysis of large, unstructured real-world data. This symposium highlights applications of natural language processing, large language models (LLMs), and pharmacoepidemiologic methods using social media, electronic health records (EHRs), and claims data.

Dr. Selen Bozkurt will analyze 31,785 Reddit posts from lupus communities, identifying 7,831 pain-related posts (24.7%). Widespread (83.8%) and joint pain (35.7%) were common; nociplastic features appeared in 56.3% of posts, and affective distress in 24.5%. Pain management was discussed in 76.9% of posts, including corticosteroids (32.9%), hydroxychloroquine (32.5%), and nonpharmacologic strategies (35.4%). A fine-tuned LLM accurately summarized narratives (accuracy 3.1/4), showing how social media captures

multidimensional pain experiences not found in clinical data.

Dr. Yiyu Wang will use NLP and LLMs to analyze 2.6 million EHR notes from 5,051 patients to identify self-management practices such as cannabis use. LLM classifiers (F1 up to 0.87) showed that 24.5% of patients had current cannabis use, a 900% increase from 2017-2024, largely for pain (37.9%) and with racial and sex-based disparities. This work demonstrates how unstructured notes reveal pain management behaviors that are rarely coded.

Dr. Ashley Lewis will present a methods-focused session using pharmacoepidemiology and machine learning on Medicaid, MarketScan, and EHR data to evaluate pain management modalities and polypharmacy. She uses sequence analysis to map transitions between opioids, NSAIDs, corticosteroids, and adjuvant therapies, and develops predictive models to identify high-risk multidrug combinations and adverse drug events. She incorporates explainable AI (e.g., knowledge graph-based risk modeling) to support safer pain treatment.

Together, these presentations show how rigorous analytic methods applied to real-world data improve pain phenotyping, reveal patient-centered management strategies, and inform safer treatment decisions. **Dr. Titilola Falasinnu** will moderate the session.

Keywords: Clinical/ Trans. Research, AI/Informatics

3:45 – 5:15pm

Symposia Block #4 (WED)

The How and Why of LGBQTIA+ Inclusion in Pain Research

Benjamin Van Dyke[1], Lauren Harrison[2], Robert Sorge[3], Burel Goodin[4]
[1]Young Harris College, [2]Stanford University School of Medicine, [3]University of Alabama at Birmingham, [4]Washington University in St. Louis

Persistent discrimination and marginalization experienced by lesbian, gay, bisexual, queer/questioning, transgender, intersex, asexual + (LGBTQIA+) individuals significantly increases their risk for the development of chronic pain. Clinical pain research has traditionally focused on binary sex assigned at birth, with the terms “sex” and “gender” used interchangeably despite representing two distinct influences on the human experience. When gender identity has been assessed, it has been done in a limited way (e.g., man, woman, other). Lack of adequate assessment of sexual orientation and gender identity (SOGI) has resulted in LGBTQIA+ populations being underrepresented in pain research, resulting in a limited understanding and/or misplaced assumptions of the experience of pain in these populations.

This multidisciplinary panel will discuss the importance of thorough assessment of SOGI in pain research and practices to increase representation and inclusion across studies of pain. **Dr. Benjamin Van Dyke** (he/him/his; Associate Professor, Young Harris College) will highlight the best practices for the inclusion and analysis of gender minority adults in pain research and results from ongoing studies. **Dr. Lauren Harrison** (she/her/hers: Clinical Assistant Professor, Stanford University School of Medicine) will present current best

practice guidelines for the assessment of SOGI and will present preliminary data highlighting disparities in pain-related outcomes between LGBTQIA+ youth and cisgender heterosexual youth with chronic pain. **Dr. Robert Sorge** (he/him/his; Professor, University of Alabama at Birmingham) will discuss community engagement in clinical pain studies and preliminary results from an ongoing study of LGBTQIA+ individuals. Finally, a panel of trainees will share their experiences and take questions regarding the challenges and successes of incorporating LGBTQIA+ populations in pain research. **Dr. Burel Goodin** (he/him/his; Professor, Washington University in St. Louis) will moderate. Together, the speakers will provide a comprehensive overview of the importance of inclusion in pain studies with important first-hand experience from this ongoing work.

Keywords: Behavioral and social sciences, Diversity, Inclusion, and Anti-Racism in Pain

5:15 – 5:30pm	**Transition**
5:30 – 6:30pm	**Awards Committee Meeting**
5:30 – 7:00pm	**Special Interest Group Meetings** Basic Science - Preclinical SIG Meeting

Thursday, March 26, 2026

8:30 – 9:00am

Announcement of Poster Awards, G.F. Gebhart Journal of Pain Young Investigators Award, & Excellence in Engagement Award
Room: Regency Ballroom, upper second floor

9:00 – 10:00am

Context is Key: How Spinal Cord Neuromodulation Shapes Our Somatosensory Experiences
Victoria Abraira, PhD, (Rutgers University)
Room: Regency Ballroom, upper second floor

10:00 – 10:15am

Transition/Break

10:15 – 11:45am

Symposia Block #5 (THURS)

Psychosocial Trauma and Chronic Pain: Translating Research into Responsive Clinical Care

Hallie Tankha[1], Jolin Yamin[2], Jennifer Pierce[3], Jonathan Bittner[4], Mao Taketani[5]
[1]Cleveland Clinic, [2]Brigham and Women's Hospital/Harvard Medical School, [3]University of Michigan, [4]Chestnut Hill Therapy Collective, [5]Jorna Therapeutics

Individuals with chronic pain have elevated rates of psychosocial trauma exposure, with 15-35% meeting criteria for posttraumatic stress disorder (PTSD), exceeding the 6-12% in the general population. Trauma has been linked with altered stress response systems and pain modulatory pathways, potentially sensitizing individuals to future pain and increasing risk for chronicity. Mounting evidence suggests that trauma contributes to greater pain severity and interference, diminished response to standard pain treatments, and heightened risk of pain-related disability. Despite the well-established trauma-pain comorbidity, trauma remains insufficiently recognized and addressed in pain management settings, and trauma-related disorders are treated in separate mental health clinics without care coordination across disciplines. This fragmented care pathway requires patients to navigate multiple healthcare departments, resulting in treatment delays and suboptimal care. Consequently, there is a critical need to better understand trauma in the context of chronic pain and integrate trauma-responsive care into pain management.

This symposium will integrate epidemiologic, mechanistic, clinical, and lived experience perspectives to promote trauma-responsive approaches to chronic pain care. Dr. Pierce, a social psychologist and pain researcher, will present epidemiologic evidence on the prevalence of trauma among individuals with chronic pain and data from a study examining multisensory sensitivity as a potential mechanistic pathway linking trauma to pain. Drs. Tankha and Yamin, pain-focused clinical psychologists, will discuss core trauma-responsive care principles and provide practical trauma-focused adaptations for the assessment and treatment of chronic pain. Finally, Mr. Bittner, a person with lived experience, will share how trauma shaped his personal experience of pain,

highlighting gaps in care and providing insight into both helpful and unhelpful healthcare encounters from the patient perspective. Together, these speakers will highlight the importance of addressing trauma as a key factor in chronic pain outcomes and offer pathways for advancing more integrated, trauma-responsive models of pain care.

Keywords: Clinical/ Trans. Research, Trauma, Comorbid PTSD

10:15 – 11:45am

Symposia Block #5 (THURS)

Defining the "I" in Pain: Advancements in Precision Medicine Approaches

Laura Simons[1], Paul Geha[2], Matthew Herbert[3]
[1]Stanford University Medical School, [2]University of Rochester Medical Center, [3]University of California San Diego

Pain is a complex and inherently subjective experience encompassing sensory, emotional, and cognitive dimensions associated with actual or potential tissue damage. Its expression is shaped by a wide range of biopsychosocial factors and is assessed through an individual's self-report. Although precision medicine approaches are increasingly recognized as critical to optimizing chronic pain management, advances in characterizing, modeling, and treating pain at the individual level have thus far been modest. This symposium highlights recent advances in precision medicine approaches in chronic pain. Dr. Matthew Herbert will describe an innovative methodology integrating high-density longitudinal data and machine learning to model multidimensional biopsychosocial predictors of individual pain variability, with the aim of identifying top predictors that serve as personalized, intervenable treatment targets. Dr. Paul Geha will present on the use of natural language and audio-visual processing during patient interviews to identify unique pain phenotypes among patients with chronic low-back pain and predict treatment response to spinal cord stimulation. Dr. Laura Simons will discuss the use of single-case experimental designs to characterize within-person treatment responses and mechanisms of change in the context of randomized controlled trials, as well as hybrid designs that integrate group-level inference with detailed individual-level trajectories. Together, these presentations will illustrate how precision medicine approaches are advancing the ability to characterize, predict, and personalize chronic pain treatment, moving the field toward more effective and individualized care.

Keywords: Clinical/ Trans. Research, AI/Informatics, Musculoskeletal

10:15 – 11:45am **Symposia Block #5 (THURS)**

Sex-Specific Mechanisms of Central Sensitization, Opioid Use, and Placebo Analgesia in Chronic Postsurgical Pain

Lori Schirle[1], Paramita Basu[2], Nandini Raghuraman[3]
[1]Vanderbilt University Medical Center, [2]University of Pittsburgh, [3]University of Maryland

Chronic postsurgical pain (CPSP) and opioid use vary widely across patients, even after similar surgical procedures, and recent evidence suggests sex-dependent mechanisms of central sensitization (CS) and pain modulation may play a role. In an observational study of 61 total knee arthroplasty (TKA) patients (61% female, mean age 66), we assessed pain, psychological factors, and opioid use preoperatively and postoperatively. Despite no preoperative sex differences in CS or psychological variables, males consumed significantly more opioids than females six weeks after surgery (605 vs. 348 morphine milligram equivalents, $p = .027$). Importantly, CS was strongly correlated with opioid duration in males ($r = .81$, $p < .001$) but not in females ($r = -.11$, $p = .64$), revealing distinct sex-specific mechanisms of CS and opioid responsiveness.

Preclinical work complements these clinical findings, identifying a male-specific mechanism in CPSP involving kappa opioid receptor-N-methyl-D-aspartate-cyclic adenosine monophosphate-protein kinase A signaling regulated by spinal androgen receptor (AR) pathways. Exogenous testosterone restores this mechanism in females, while AR blockade or gonadectomy in males induces a female-like CPSP phenotype.

Extending these mechanistic insights to human models of endogenous pain control, placebo analgesia studies reveal that naloxone—an opioid receptor antagonist—blocks placebo-induced analgesia primarily in men, but not in women. This suggests that men rely more heavily on opioid-dependent descending inhibition, whereas women may engage alternative, possibly dopaminergic or oxytocinergic, systems for pain relief. These findings provide converging evidence that both exogenous and endogenous opioids are differentially modulated by sex-dependent neurobiological pathways.

Together, this symposium integrates clinical, preclinical, and psychoneurobiological data to highlight how sex shapes pain processing, opioid use, and treatment response. Understanding these mechanisms can drive the development of precision, sex-informed approaches to chronic postsurgical pain management

Keywords: Clinical/ Trans. Research, Neurobiology, Animal Models, Post-surgical pain

10:15 – 11:45am **Symposia Block #5 (THURS)**

Bridging Identities: Lived Experience and Professional Insight in Pain Science

Ryan Wexler[1], Amanda Stone[2], Melissa Pielech[3], De'Sha Wolf[4], Michael A. Owens[5], Katrina Hamilton[6], Michael Gold[7]
[1]National University of Natural Medicine, [2]Vanderbilt University, [3]Brown University, [4]Portland State University, [5]The University of Alabama at Birmingham, [6]Ohio University, [7]University of Pittsburgh

The perspectives of persons with lived experience (PWLE) of pain are increasingly recognized as critical to advancing the science and practice of pain care. Yet, little attention has been given to the growing number of professionals who bridge both worlds as individuals with dual identities - scientists and clinicians who also live with pain. This symposium brings together a panel of early-career faculty, each with direct and indirect lived experience of pain, to explore how dual identities shape professional motivations, methodological approaches, and opportunities for advocacy within the pain field.

Drawing from personal and collective reflections, presenters will discuss themes related to disclosure, stigma, identity integration, and the ethics of self-representation in scientific spaces. The symposium will illuminate the benefits and challenges of engaging authentically as professionals with lived experience, highlighting how personal insight can enrich the scientific process and foster community while also acknowledging structural and cultural barriers that can limit participation or safety.

Through facilitated discussion, this session will engage the audience in considering how institutions, collaborators, and professional societies can better support scientists and clinicians with lived experience. In doing so, this session aims to reframe lived experience as a valuable dimension of expertise that can strengthen the rigor, relevance, and humanity of pain research and care instead of as a source of bias.

Keywords: Clinical care and/or patient advocacy, Lived Experience Integration,

10:15 – 11:45am

Symposia Block #5 (THURS)

From Immune-Epigenetic to Gut-Brain Mechanisms: Integrative Approaches to Understanding and Preventing Chronic Pain Transitions

Siva Athitya Lakshamana Vijayarajan[1], Edgar Alfonso Romero-Sandoval[2], Kara Margolis[3], Vidya Chidambaran[1]
[1]Cincinnati Children's Center, [2]Wake Forest University School of Medicine, [3]New York University

The transition from acute to chronic pain remains a major clinical and research challenge. While most patients recover, a vulnerable subset develops persistent pain despite similar surgical exposure—suggesting that susceptibility arises well before pain begins, shaped by psychological, immune, and molecular factors. *Clinical studies in pediatric patients (Chidambaran Lab) reveal preoperative immune activation in those who later develop chronic postsurgical pain (CPSP), including increased classical and intermediate monocytes, elevated NK cells, and reduced CD8⁺ T cells, alongside higher circulating IL-6, IL-8, and IL-10.*

Dr.LVijayarajan will present new scRNAseq and immune-epigenetic findings from a pediatric surgical cohort. Mechanistic insights from animal models support this framework. Dr. Alfonso-Romero will present findings in rodents, elucidating activation of the IRE1α-XBP1s stress pathway in leukocytes following nerve injury or chemotherapy drives prolonged inflammation, through cytokines like IL-1β and TNFα, followed by data showing blockade of IRE1α with the small molecule MKC8866 may be a therapeutic target in the prevention of chronic pain. We also know that children with *high anxiety sensitivity*, are significantly more likely to experience chronic pain transitions. *This mood-pain link may be mediated by gut-brain signaling.* Enterochromaffin cell-derived serotonin—produced primarily in the gut—modulates both mood and nociception via immune-glial and vagal pathways. Dr.Margolis will present findings showing alterations in the serotonergic axis may amplify emotional and sensory pain dimensions. This multidisciplinary symposium features investigators from anesthesia, pediatric pain, neuroscience, immunology, and gastroenterology across three major academic centers, representing diverse career stages from postdoctoral scientist to senior professor. Under Dr. Chidambaran's moderation, the panel will integrate mechanistic, translational, and clinical insights on immune-epigenetic stress, neuroimmune crosstalk, and gut-brain signaling, using short talks, audience polls, case scenarios, and dedicated time for robust discussion at the end.

Keywords: Clinical/ Trans. Research, Neurobiology, Immune System, Animal Models, Pediatric pain

12:00 – 1:30pm **Advocacy Lunch Panel Discussion: Advocacy**
More details coming soon!

1:45 – 3:00pm **Advocacy Workshop Breakout Sessions**
More details coming soon!

Be sure to complete the meeting evaluation and have a safe trip home!