Application season opens August 1st for the 2022-2023 Poster to Podium Program SCAN ME **AMERICAN SOCIETY of PAIN & NEUROSCIENCE**

ASPN Poster to Podium Program 2021-2022



AMERICAN SOCIETY OF PAIN & NEUROSCIENCE

Miami ,Florida, July 15, 2022



"The P2P program signifies the essence of the ASPN mission to promote mutual encouragement and diversity. This has been my privilege and honor to serve as faculty for the inaugural program. I am extremely proud watching our initial group of participants making podium presentations at this year's ASPN conference."

- Dr. Sean Li

ASPN P2P Class of 2021-2022

Participants

Kirsten Baca Ryan Budwany Sahil Gupta Hemant Kalia Ammar Mahmoud Daniel Pak Adam Rupp Franceso Vetri Ashley Bailey-Classen Brandon Gish Sameer Jain Aashish Jay Kumar Melissa Murphy Shawn Puri Poyi (Bernie) Wu

Faculty & Mentors

Kas Amidelfan	Tim Deer
Ramsin Benyamin	Johnathan Goree
Sean Li	Jessica Jameson
Kate Meacham	Erika Petersen
Dawood Sayed	David Reece
Michael Schatman	Peter Staats
Natalie Strand	Jackie Weisbein
	The ASPN Board

P2P: Main objectives and professional development thrusts

• Research advancement

Leadership development

Presentation skills

Industry relationships

P2P is a unique offering among mentoring experiences that requires deep commitment and participation in order to meet professional development goals

P2P Calendar of Events: 2021-2022

September	Kickoff meeting (today)
October	 mentor meeting and research plan (participant's own schedule) research basics webinar (how to go from idea to study in feasibility, interest, time & resources, how to write a paper, what kinds of research and how to choose)
November	presentations skills webinar (presentation with panel discussion)
December	ugly sweater meetup with 90-second presentations by participants
January 7-8, ASPN Innovations Summit, Las Vegas, IN PERSON	P2P members to attend Las Vegas Innovations. Plan for 2-minute talk on research background/aims at a reception or session
February	leadership skills webinar with Q&A forum with leaders from ASPN and industry and young guns
March	"madness" peer mentoring roundtable with young guns and residents section
May	research preview presentations to each other with 360 critiques
June	prep for ASPN presentation with mentor. Practice sessions offered as needed
July, ASPN Annual Meeting, Miami IN PERSON	 ASPN P2P science session: each participant with <u>3 minute</u> talk, <u>q&A</u> at the end. P2P reception for completing class and to welcome new class (with sponsor TBD)

The year weaves together webinar and in-person programs along with independent work on a mentored research project.



The P2P Mission

The ASPN mentoring program provides a distinctive and valuable offering intended to develop the talent, knowledge, and leadership skills of ASPN members in order to advance the scientific understanding, supportive patient engagement, and clinical application of pain medicine treatments

Ashley Bailey-Classen, DO

Trinity Interventional Pain and Spine

Fort Worth, TX



"The exposure to such an expansive knowledge base and the connections made while in this program have been truly invaluable. It has been an honor and a privilege to be included in such a talented group of physicians."

A Novel Approach to a Lumbar Posterolateral Arthrodesis – A Case Series to Showcase the Safety and Efficacy.

Lumbar arthrodesis surgeries have long been utilized as a way to arrest the progression of the normal degenerative cascade of the spine. Historically this has been done in an open manner with the use of pedicle screws and rod placement. As our society moves further into a world of minimally invasive surgery, lumbar spine surgery in general has sought to minimize the amount of tissue trauma while maximizing the efficacy of the procedure. This has led to multiple advancements in the world of lumbar spine surgery; including this novel technique utilizing a lateral percutaneous approach for a posterolateral arthrodesis in the lumbar spine that allows for sparing of the musculature as well as the supraspinous ligament.

This case series seeks to showcase the safety and efficacy of this novel percutaneous approach to a posterolateral arthrodesis utilized in a single interventional pain practice.

Ryan Budwany, MD, MPH, MBA

The Spine and Nerve Centers of the Virginias

Charleston, WV



"It has truly been a privilege to have participated in the inaugural class for Poster to Podium. I am incredibly grateful to ASPN for this amazing opportunity and to all the mentors for their leadership. The future is bright!!"

Back Pain in a Galaxy Far, Far, Away

As SpaceX, NASA, Blue Origin, and Virgin Galactic among many others rapidly work to increase human presence in space, so too will rise the morbidity, complications and medical problems associated with space travel. Decades of research and medical data on astronauts has shown that back pain is highly prevalent among space travelers. Space adaptation back pain (SABP) results from spending time in a microgravity environment and may significantly increase risks to future space travelers.

NASA researchers have documented pathophysiologic changes in the spine as a result of space travel. While specific contribution from radiation, space launch and landings as well as prolonged time in a weightless environment remains to be debated, what is certain is that there are notable changes in the spine with the amount of time spent in space.

With the hopes of traveling to a galaxy far, far away or simply spending extensive time on a base on the Moon or reaching Mars, it is important for the interventional spine and pain

physician to better understand space adaption back pain so that we may contribute to the science and research to help progress this field.

The role of this project is to discuss the concept of SABP and the ongoing research during my time at NASA as well as to highlight the epidemiology, pathophysiology and opportunities for future research in the growing area of space medicine.

Brandon Gish, MD

Commonwealth Pain and Spine

Lexington, KY



"The ASPN P2P program is a perfect opportunity for motivated young physicians to meet and collaborate with physician leaders in pain management. No other society or program offers such an opportunity to elevate your skillset to help achieve your professional goals."

Neuromodulation for the Management of Chronic Pelvic Pain Syndromes - A Systematic Review

Chronic pelvic pain is a burdensome condition to treat that crosses multiple medical sub-specialties. Sacral stimulation for functional bladder disease has been well established, but little large-scale evidence exists regarding utilization of neuromodulation techniques to treat chronic pelvic pain. Emerging evidence does suggest this to be a promising treatment, and we aim to characterize the use and efficacy of such techniques for treating chronic pelvic pain syndromes.

Sahil Gupta

Senior Associate Consultant, Mayo Clinic,

Jacksonville, FL



"This has been an extremely eyeopening experience. The mentorship from the KOLs of Pain medicine has been invaluable."

Gender disparity in Pain Medicine: An Evaluation of Pain Medicine Societies

Background: Women are entering medical school in record numbers, however there are still handful of male-dominated medical specialties, pain medicine among them. Gender disparity at the highest levels of pain medicine societies has not been studied yet, and this study tried to bridge that gap.

Methods: We identified prominent national pain medicine societies and extracted data from public databases and performed comparisons of demographics and academic metrics between male and female leaders among those societies

Results: We identified 5 prominent national pain medicine societies (ASPN, NANS, ASRA, ASIPP, AAPM) and of the 320 committee and leadership positions , only 25% were occupied by females. Overall, men had a higher median h-index, number of publications and number of citations. However, across university academic ranks, the research productivity metrics were similar between genders.

Conclusion: Gender disparity exists in the leadership positions in North American Pain Medicine Societies. We have attempted to study the relationship between gender, academic ranks and research productivity with leadership roles in these societies.

Sameer Jain

Pain Treatment Centers of America

Little Rock, AR



"It has been a very informative journey learning from the stalwarts in the field. This experience has provided me with an opportunity to hone skills that go beyond clinical practice. I would recommend every young physician such as myself to be a part of it." *Application season opens* August 1st *for the 2022-2023 Poster to Podium Program*



More information on Poster to Podium available at https://aspnpain.com/poster-to-podium/ or by emailing Erika Petersen at eapetersen@uams.edu

Hemant Kalia, MD, MPH

Division of Interventional Spine, Pain, and Regenerative Medicine, InvisionHealth

Rochester, NY



"P2P is an exceptional incubator program which provides you with the necessary tools and mentorship to advance your research career goals. It provides networking opportunities with the thought leaders and industry partners to advance the mission of evidenced based medicine in our subspecialty." A Pilot-Prospective observational study on effect of Dorsal Root Ganglion Stimulation in improving limb salvage and wound healing in critical limb ischemia

Critical limb ischemia (CLI) is the most severe manifestation of peripheral arterial disease with significant high risk of amputation, poor wound healing, cardiovascular events and death. Amputation secondary to CLI is the 6th most expensive surgical procedure performed in the US with an estimated healthcare expenditure of \$10.6 billion yearly. Although neuromodulation plays a vital role in treatment algorithm of CLI, most of the literature is focused on dorsal column stimulation.

We believe dorsal root ganglion stimulation may play a more significant role in this specific population due to its direct effect on sympathetic drive resulting in vasodilation. We propose a 12 month, prospective observational study evaluating the effect of DRG-S in improving limb salvage and wound healing in patients with Rutherford Stage III and IV CLI.

Ammar Mahmoud, MD

Northern Light Health Eastern Maine Medical Center Bangor, ME



"The ASPN P2P program allowed me the opportunity to collaborate with several research leaders in our field and served as the launchpad for my research project. Through personalized faculty mentorship, I was able to focus my research ideas and develop longlasting relationships for future collaborations. It has been a privilege to be a part of the inaugural ASPN P2P program. I look forward to this program's development and future contributions to our field."

Education and Proficiency in Intrathecal Drug Delivery Systems (IDDS) during Pain Medicine Fellowship - A Survey Based Study

Background and objectives Intrathecal targeted drug delivery (TDD) via Intrathecal Drug Delivery Systems (IDDS) exposure and adoption remains low despite multiple well-designed trials that demonstrate safety, efficacy, reliability and cost saving benefits. This study aims to understand contributing factors, starting with pain medicine fellowship training.

Methods An internet-based, anonymous survey was distributed to pain medicine fellows enrolled in an Accreditation Council for Graduate Medical Education (ACGME) accredited pain medicine training program during the 2020-2021 academic year identified through pain medicine societies, program directors, and coordinators.

Results Seventy-one of four hundred and twenty-three fellows (17 % response rate) completed the survey. Nine percent of respondents identified the established pain conditions that may be treated by IDDS. Fifty-one percent of respondents felt there was an unmet need for IDDS training. About one third of respondents felt that lack of curriculum, faculty, and cases were barriers to IDDS use, respectively. Thirty-one percent of fellows reported sufficient training for IDDS in their fellowship programs. The majority (70%) of respondents somewhat or strongly support direct training by IDDS manufacturers.

Conclusions A wide variability exists for IDDS training during pain fellowship. Insufficient case exposure and lack of a standardized curriculum may play a role in future therapy adoption.

Melissa Murphy, MD, MPH

North Texas Orthopedics and Spine Center

Dallas-Fort Worth, TX



"The Poster to Podium program changed my life in a very impactful way. It opened up doors for me to connect with senior physician scientists, researchers, speakers, and leaders in the field and get involved in cutting edge research in neuromodulation. The P2P curriculum is also practical and helpful in coaching our speaking and presentation skills. The P2P program has taken my career to the next level." Efficacy of Differential Target Multiplexed Spinal Cord Stimulation (SCS) vs. Traditional Spinal Cord Stimulation vs. High Dose (HD) Kilohertz Spinal Cord Stimulation: A data analysis of the DTM 12-month Randomized Control Trial (RCT) and the Vectors Post-Market Study

Based on the published results, both DTM SCS and HD stimulation provided significant pain relief for patients. The DTM RCT showed 80.1% responder rate (> 50% pain relief) on low back pain vs. 51.2% in the traditional stimulation group at the 3-month follow up. The Vector study showed a responder rate of 79% in at least one pain area (back pain or leg pain) at the 12-month follow up.

However, there has not been any published study comparing DTM SCS to HD stimulation, and it's uncertain which waveform is more superior for low back pain or leg pain.

This data analysis examines both studies to understand waveform superiority on back pain vs. leg pain relief.

Specifically, for each patient cohort group (DTM vs. traditional stimulation vs. HD stimulation), we will examine primary outcomes such as responder rate and VAS reduction, and secondary outcomes including patient reported disability rating, patient satisfaction, and patient global impression of change.

DTM SCS may provide more significant pain relief on axial low back pain than HD and traditional spinal cord stimulation, and all of these waveforms provide comparable relief on leg pain.

Daniel Pak, MD, MPH

Weill Cornell Medical College

New York, NY



P2P has given me the opportunity to directly engage with leaders in the field in an informal and fun setting--it's been tremendously helpful with advancing my own career. Use of a cadaver-based simulation curriculum to teach and assess interventional pain procedures

We have created a cadaver-based simulation curriculum for pain fellows with the goal of developing technical skills for basic and advanced spine procedures. Each session consists of a didactic lecture and debriefing to provide feedback to the trainee. The goals of the curriculum include the following:

- 1) Teach technical skills in a safe and realistic learning environment
- 2) Measure trainee performance and milestones throughout the year
- 3) Teach fluoroscopic anatomy
- 4) Improve patient and radiation safety

5) Continue to advance simulation education and develop tools to better prepare our fellows for independent practice

Shawn Puri, MD

Pain Specialists of America Austin, TX



I would encourage my colleagues to apply to this program. It will help you to strengthen your connections with your colleagues across the country, learn valuable skills to help you in your own career, and have amazing opportunities with the thoughts leaders in our field.

A quality-of-life assessment for pre and post MILD patients utilizing the Short Form (SF-36) survey

This is a pilot study utilizing the validated Short Form (SF-36) instrument to determine the effects of the MILD procedure on eight specific health concepts that are vital in "quality of life": physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions.

Adam Rupp, MD

Rehabilitation medicine resident University of Kansas City



A great program for young innovators. Establish connections with some of the biggest names in pain as well as industries in various branches of pain management. Learn to do research under the guidance of a mentor. Great time investment.

The impact of spinal cord stimulation on opioid utilization in failed back surgery syndrome compared to surgery naïve patients

Background: Spinal cord stimulation (SCS) has been utilized for failed back surgery syndrome (FBSS) with well-documented improvements in pain and function. However, limited studies have investigated the impact of surgical history on SCS and opioid use outcomes.

Methods: A narrative review utilizing the scale for the quality assessment of narrative review articles (SANRA) methodology.

Results: Twenty-six studies met inclusion criteria. Surgery-naïve subjects had the greatest mean opioid dose reduction of 50.39% morphine milliequivalents, and the greatest number of patients who discontinued opioids at 53.72%.

Conclusion: SCS has a positive impact on opioid reduction, regardless of surgical history. However, when compared to those with FBSS, surgery-naïve subjects had greater improvements in opioid related outcomes.

Francesco Vetri, MD

National Spine and Pain Centers Bloomington, IL



"The program was extremely valuable in providing an educational frame and resources to improve presentation skills and networking, I surely recommend it." Activation of neuroinflammation via mTOR pathway is regulated by Differential Target Multiplexed and Low Rate spinal cord stimulation in a neuropathic pain

model

Neuroinflammation is involved in causing and maintaining chronic neuropathic pain. This process involves the mTOR signaling pathway. We used two different modalities of Spinal cord stimulation, traditional 50Hz tonic and differential target multiplexed programming (DTM), and we looked at protein expression changes in the spinal cord of rats subjected to spared nerve injury model. Our dataset was cross-referenced with protein databases for mTOR-related proteins. We isolated 49 proteins, and 8 of this showed a significant change in response to the pain model relative to uninjured animals, while expression levels of 25 proteins were significantly changed with DTM, but only 8 by LR-SCS treatment. We found that the expression changes caused by the pain model, were largely reversed by DTM stimulation for 48 h, and to a lesser extent by low rate SCS.

Also the phosphorylation changes that occur with both the pain model and spinal cord stimulation were analyzed. We identified 141 different phosphorylated isoforms for 57 proteins related to mTOR signaling. The SNI pain model alone affected expression levels in 84.4% of these isoforms. Treatment with DTMP, and to a lesser extent LR stimulation, was able to back-regulate expression levels of 2/3 of these proteins towards levels found in uninjured animals.

In conclusion, DTM programming and LR-SCS have shown to have the potential for reversing some of the biological processes related to neuroinflammation responsible for chronic pain.

Bernie Wu

Cleveland Clinic Lerner College of Medicine Cleveland, OH



"I am so happy and grateful that I got to be part of the P2P program. I cannot believe it has been almost a year since our first meeting. I have learned so much about the field of pain medicine that I could not have experienced anywhere else as a junior trainee. It is a truly humbling and inspiring experience learning from the great mentors that have been so generous in sharing their wisdom and advice for the upcoming generation of physicians."

Trigeminal nerve blocks for trigeminal neuralgia: Is there a point of diminishing returns?

Trigeminal neuralgia (TN) is characterized by recurrent unilateral brief electric shock-like pain, which are abrupt in onset and termination, and limited to the distribution of one or more divisions of the trigeminal nerve. When conservative treatments lose their efficacy, or adverse drug effects become intolerable, trigeminal nerve blocks can serve as an alternative therapeutic option, in advance of surgical consideration. These blocks serve to deliver local anesthetic and/or steroid in close proximity to the Gasserian ganglion or the peripheral trigeminal branches to address facial pain symptoms.

Clinical experience has demonstrated efficacy of the trigeminal nerve block; however, there has yet to be a study which evaluates effectiveness of repeat injections in patients suffering from TN.

Our study retrospectively analyzes 109 patients who have received trigeminal nerve blocks for trigeminal neuralgia at an academic pain management department. We assessed the degree of pain relief following each block and quantified treatment success rate, which was defined as 30% or greater pain relief with each injection. We found treatment success rates of 25.2%, 29.3%, 53.8%, 52.9%, 36.4%, 60% and 50% for block one to block seven, respectively.

In conclusion, treatment success rates of repeat trigeminal nerve blocks for TN neither increase nor decrease with repeat injections.

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