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SYNOPSIS

Dr. Schuster is a Pain and Headache Neurologist at the UC San Diego Center for Pain Medicine, where he serves as Associate Clinic Director. He was principal investigator on the first placebo-controlled study of vaporized cannabinoids for acute migraine and is currently launching an NFL-funded randomized controlled trial of cannabidiol versus non-invasive vagus nerve stimulation versus standard of care for persistent post-traumatic headache in elite athletes. He speaks widely at pain, headache, and neurology conferences. He serves on the board of directors of the American Academy of Pain Medicine, as Senior Vice President of the World Headache Society, as the Vice Chair of the Guidelines Committee for the International Pain and Spine Intervention Society, and as Headache and Facial Pain SIG Chair for ASRA Pain Medicine. He was 1 of 32 speakers at the 2022 Migraine World Summit and recipient of the Migraine Research Foundation's 2018 Impact Award research grant. He is section editor for the Neuropathic Pain section and founding co-section editor for the Teaching Images section for the journal *Pain Medicine*. He guest edited the October 2024 Pain issue of *Continuum*, the American Academy of Neurology's CME publication. He was named a 2023 "Top Doctor" by San Diego Magazine.

EMPLOYMENT

07/2021-Present Associate Professor, Center for Pain Medicine, Department of Anesthesiology, University of California, San Diego

11/2018-Present Associate Clinic Director, Center for Pain Medicine, Department of Anesthesiology, University of California, San Diego

09/2017-06/2021 Assistant Professor, Center for Pain Medicine, Department of Anesthesiology, University of California, San Diego

EDUCATION AND TRAINING

08/2016-07/2017 Pain Medicine Fellowship, Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital, Harvard Medical School

07/2015-06/2016 Headache and Facial Pain Fellowship, Montefiore Headache Center, Albert Einstein College of Medicine

07/2012-06/2015 Neurology Residency, Ronald Reagan-UCLA Medical Center

07/2011-06/2012 Internal Medicine-Preliminary Year Internship, Maimonides Medical Center, Brooklyn, NY

08/2007-05/2011 M.D., University of Michigan Medical School

- M.D. with Distinction in Research and Distinction in Medical Education
- Dean's Scholarship recipient

09/2003-05/2007 B.S., University of California, Los Angeles

- B.S. in Neuroscience with College Honors, graduated Summa Cum Laude and Phi Beta Kappa

PROFESSIONAL CERTIFICATIONS

Neurology (ABPN)	No. 59756	Date of Certification: 9/14/2015
Headache Medicine (UCNS)	No. HM00766-16	Date of Certification: 10/31/2016
Pain Medicine (ABPN)	No. 390	Date of Certification: 9/9/2017

STATE LICENSURES

California	No. A125798	05/2013 – Present (Active)
Massachusetts	No. 266360	06/2016 – 03/2018 (Inactive)

SELECTED HONORS & AWARDS

2024	IPSIS Outstanding Volunteer Award, International Pain and Spine Intervention Society
2024	Presidential Commendation, American Academy of Pain Medicine 2024 Annual Meeting in Scottsdale, AZ
2024	1 of 6 Winning Conference Posters and invitation for Podium Presentation, American Academy of Pain Medicine 2024 Annual Meeting in Scottsdale, AZ
2023	“Top Doctor” in the annual San Diego Magazine “Physicians of Exceptional Excellence” survey
2022	1 of 32 invited speakers at the 2022 Migraine World Summit
2021	3 rd Place Winning Conference Poster at Academy of Integrative Health & Medicine 2021 Annual Conference
2019	1 of 6 Winning Conference Posters and invitation for Podium Presentation, American Academy of Pain Medicine 2020 Annual Meeting in National Harbor, MD
2019	2019 <i>Neurology</i> ® Journal Resident & Fellow Section Writing Award
2019	American Academy of Pain Medicine’s Fellowship Excellence Award (Wrote the winning application)
2018	Migraine Research Foundation Impact Award
2015	“Frontiers in Headache Research” podium presentation and scholarship from American Headache Society November 2015, Scottsdale, AZ
2011	Graduation with Distinction in Research, University of Michigan Medical School
2011	Graduation with Distinction in Medical Education, University of Michigan Medical School
2009	1 st place Research Podium Award in Clinical Research/Health Policy, American Medical Association Medical Student Section and Resident and Fellow Section Joint Research Symposium
2007-2011	Dean’s Scholarship, University of Michigan Medical School
2007	UCLA Chancellor’s Service Award
2006	UCLA Alumni Association 2006 Distinguished Senior Award

RESEARCH PROJECTS

1. “Autoimmune Mechanisms in Neuropathic Pain”
Role: Principal Investigator
Results presented, manuscript in preparation
2. “Efficacy of inhaled cannabis versus placebo for the acute treatment of migraine: a randomized, double-blind, placebo-controlled, crossover trial (NCT04360044)”
Role: Principal Investigator
Results presented, manuscript in preparation
3. “Network Analysis and High-Throughput Screening to Identify Predictors of Response to Cannabis and Opioids Among Chronic Pain Patients”
Role: Principal Investigator
3rd Place Winning Conference Poster at Academy of Integrative Health & Medicine 2021 Annual Conference
4. “Rate and predictors of chronic pain patients establishing care with pain psychology following pain physician referral”
Role: Principal Investigator
1 of 6 Winning Conference Posters and invitation for Podium Presentation, American Academy of Pain Medicine 2020 Annual Meeting in National Harbor, MD
Published
5. “Effect of gabapentin and tizanidine on insomnia in chronic pain patients – A randomized, double-blind, placebo-controlled crossover trial.” (NCT04429347)
Role: Principal Investigator
Concluded recruitment, results in analysis
6. Rates of migraine assessment, diagnosis, and treatment in patients receiving occipital nerve blocks in an academic pain clinic.
Role: Principal Investigator
Published
7. Medication overuse headache in a tertiary academic pain clinic.
Role: Principal Investigator
Published

8. California Clinical and Translational Pain Research Consortium (3U24NS115714)
Role: Co-Investigator (PI: Mark Wallace)
Ongoing
9. Mechanisms of Affective Touch in Chronic Pain (5R00 AT009466-04)
Role: Co-Investigator (PI: Laura Case)
Recruiting
10. A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Assess the Safety and Efficacy of 80mg daily of NRD135S.E1 Versus Placebo in Adult and Elderly Participants with Painful Diabetic Peripheral Neuropathy (SERENDIPITY-1)
Role: Site Principal Investigator
Recruiting
11. Dose-Ranging Trial of Cannabis for Acute Migraine Treatment (NCT05427630)
Role: Principal Investigator
Recruiting
12. Dynamic Evaluation of Neural Mechanisms for Affective Touch: Pathways for Touch-induced Pleasantness and Pain Modulation (R01 AT012048-01A1)
Co-Investigator (PI: Laura Case)
Recruiting
13. STX-015-23-01 SERENITY CM Clinical Trial
Sub-Investigator (Site PI: Farshad Ahadian)
Terminated
14. NFL Grant “A Randomized, Multicenter Study of Non-Invasive Vagus Nerve Stimulation (nVNS), Cannabidiol, and Standard of Care for the Treatment of Persistent Post-Traumatic Headache in Elite Athletes”
Co-Principal Investigator with Erika Petersen
Not yet recruiting
15. RELIEV-CM2 Randomized Controlled Trial Supraorbital and Occipital Nerve Stimulation for Refractory Chronic Migraine
Role: Site Principal Investigator
Recruiting

GRANT SUPPORT

1. Migraine Research Foundation and Association for Migraine Disorders (PI: R. Lipton, \$44,000)
“Plasma Calcitonin-Gene Related Peptide and Nerve Growth Factor levels in New Daily Persistent Headache to Identify Potential Biomarkers and Therapeutic Targets”
2. American Academy of Orofacial Pain (PI: B. Wainger, \$2,800)
“Plasma Calcitonin-Gene Related Peptide levels in Trigeminal Neuralgia to Identify Potential Biomarkers and Therapeutic Targets”
3. National Multiple Sclerosis Society, UCSD Academic Senate, and partially supported by NIH CTSA Grant UL1TR000100 (PI: N. Schuster, \$47,500)
“Autoimmune Mechanisms in Neuropathic Pain”
4. Migraine Research Foundation (PI: N. Schuster, \$200,000)
“Efficacy of inhaled cannabis versus placebo for the acute treatment of migraine: a randomized, double-blind, placebo-controlled, crossover trial
5. UC San Diego Academic Senate (PI: N. Schuster, \$14,500)
“Network Analysis and High-Throughput Screening to Identify Predictors of Response to Cannabis and Opioids Among Chronic Pain Patients”

6. UCSD Department of Anesthesiology RAG, and partially supported by NIH CTSA Grant UL1TR000100 (PI: N. Schuster, \$13,500)
“Effect of gabapentin and tizanidine on insomnia in chronic pain patients – A randomized, double-blind, placebo-controlled crossover trial.”
7. Sierra Health/SAMHSA (Site PI: N. Schuster, \$34,500, Program PI: Scott Fishman)
“Train the Trainer (T3) Primary Care Pain Management Fellowship”
8. UC San Diego Academic Senate (PI: N. Schuster, \$40,000)
“Cannabis for Acute Migraine Treatment”
9. NIH/NINDS U24 NS115714 (PI: Mark Wallace, Role: Co-I, \$995,400)
“California Clinical and Translational Pain Research Consortium”
10. NCCIH 5R00AT009466-04 (PI: Laura Case, Role: Co-I, \$300,158)
“Mechanisms of Affective Touch in Chronic Pain”
11. NIH/HEAL EN21-01 NCT05480228 (Site PI: N. Schuster, Funding Per Patient Enrolled)
A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Assess the Safety and Efficacy of 80mg daily of NRD135S.E1 Versus Placebo in Adult and Elderly Participants with Painful Diabetic Peripheral Neuropathy (SERENDIPITY-1)
12. Novaremed (Site PI: N. Schuster, Funding Per Patient Enrolled)
Extended PK sub-study for the EN21-01 protocol, “A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Assess the Safety and Efficacy of 80 mg daily of NRD135S.E1 Versus Placebo in Adult and Elderly Participants with Painful Diabetic Peripheral Neuropathy (SERENDIPITY-1)
13. 1 R01 AT012048-01A1 (PI: Laura Case, Role: Co-I, \$690,186) “Dynamic Evaluation of Neural Mechanisms for Affective Touch: Pathways for Touch-induced Pleasantness and Pain Modulation”
14. NFL Grant (Role: lead investigator and clinical coordinating center director, Co-PI with Erika Petersen, \$250,000) “A Randomized, Multicenter Study of Non-Invasive Vagus Nerve Stimulation (nVNS), Cannabidiol, and Standard of Care for the Treatment of Persistent Post-Traumatic Headache In Elite Athletes”
16. RELIEV-CM2 Randomized Controlled Trial Supraorbital and Occipital Nerve Stimulation for Refractory Chronic Migraine (Role: Site Principal Investigator, \$1,123,828.00)
Recruiting

PEER-REVIEWED PUBLICATIONS

1. **Schuster NM**, Rogers MA, McMahon LF. “Using Search Engine Query Data to Track Pharmaceutical Utilization: A Study of Statins.” *Am J Manag Care*. 2010;16(8):16(8):e215-e219.
2. **Schuster NM**, Vollbracht S, Rapoport AM. “Emerging treatments for the primary headache disorders.” *Neurological Sciences*. 2015;36 Suppl 1:109-13.
3. **Schuster NM**, Karnezis S, Restrepo L. “Teaching *NeuroImages*: Granulomatosis with polyangiitis causing Collet-Sicard syndrome and refractory headache.” *Neurology*. 2015;8;85(23):e179-80.
4. **Schuster NM**, Rapoport AM. “New strategies for the treatment and prevention of primary headache disorders.” *Nature Reviews Neurology*. 2016;(1211):635-650.
5. **Schuster NM**, Rapoport AM. “Calcitonin Gene-Related Peptide-targeted therapies for migraine and cluster headache: a review.” *Clinical Neuropharmacology*. 2017;40(4):169-174.
6. **Schuster NM**, Hsia-Kiung. “Glossopharyngeal postherpetic neuralgia palliated with fluoroscopic guided nerve block: A case report.” *Headache*. 2018 58(1):154-156.
7. Smith SV, **Schuster NM**. “Relapsing Painful Ophthalmoplegic Neuropathy: No longer a ‘migraine,’ but still a headache.” *Current Headache and Pain Reports*. 2018; 14:22(7).
8. **Schuster NM**. “Cervical posterior epidural space on T1- versus T2-weighted MRI imaging.” *Pain Medicine*. 2018; 19(8): 1694-1695.
9. **Schuster NM**. “Non-small cell lung cancer drop metastasis causing lumbosacral radiculopathy.” *Pain Medicine*. 2018; 19(9) 1874-1975

10. Oswald JC and **Schuster NM**. "Lasmiditan for the treatment of acute migraine: a review and potential role in clinical practice." *Journal of Pain Research* 2018;11 2221–2227.
11. **Schuster NM**, Volney SJ, Kamdar MM. "Sciatic lymphoma mimicking lumbar radiculopathy." *Pain Medicine*. 2018; 19(10):2091-2092.
12. **Schuster NM** and Hascalovici JR. "Emerging Subspecialties in Neurology: Pain Medicine." *Neurology*. 2018; 91(22): 1025-1028.
13. Seav SM and **Schuster NM**. "Cluster-status migrainosus with a weekly periodicity responsive to high-flow oxygen: a case report." *Cephalalgia*. 2019; 39(1):157-160.
14. Trujillo DG, McDonald MA, **Schuster NM**. "Intradural Adhesion at L3-4 Contributing to S1 Radiculopathy in Postlaminectomy Pain Syndrome." *Pain Medicine*. 2019 Sep 1;20(9):1842-1843. doi: 10.1093/pm/pnz171. PubMed PMID: 31329237.
15. Kuo, DC, Castellanos JP, **Schuster NM**. "Crossing Midline and Oblique Imaging During Interlaminar Cervical Epidural Steroid Injection." *Pain Medicine*. 2019 Dec 1;20(12):2599-2600. doi: 10.1093/pm/pnz201. PubMed PMID: 31504871.
16. Maini K & **Schuster NM**. "Headache and Barometric Pressure: A Narrative Review." *Current Pain Headache Reports*. 2019;23(11):87.
17. Aboud T & **Schuster NM**. "Pain Management in Multiple Sclerosis: a Review of Available Treatment Options: *Curr Treat Options Neurol*. 2019 Nov 27;21(12):62.
18. Leung A, Shirvalkar P, Chen R, et al. Transcranial Magnetic Stimulation for Pain, Headache, and Comorbid Depression: INS-NANS Expert Consensus Panel Review and Recommendation. *Neuromodulation*. 2020;23(3):267-290. doi:10.1111/ner.13094
19. Lyon, RY and **Schuster NM**. "Poster Abstract 506: Factors related to chronic pain patients' decision to initiate behavioral pain treatment following their pain specialist referral. AAPM 2020 AWARD-WINNING SCIENTIFIC POSTER ABSTRACTS." *Pain Medicine*, 21(6), 2020, 1307–1310. <https://doi.org/10.1093/pm/pnaa106>
20. Robbins MS, Victorio MCC, Bailey M, Cook C, Garza I, Huff JS, Ready D, **Schuster NM**, Seidenwurm, D, Seng E, Szperka C, Lee E, Villanueva R. Quality Improvement in Neurology: Headache Quality Measurement Set. *Neurology*, 2020 (Online First) DOI: <https://doi.org/10.1212/WNL.0000000000010634>
21. Robbins MS, Victorio MCC, Bailey M, Cook C, Garza I, Huff JS, Ready D, **Schuster NM**, Seidenwurm, D, Seng E, Szperka C, Lee E, Villanueva R. Quality Improvement in Neurology: Headache Quality Measurement Set. *Headache*, 2020 61(1):219-226.
22. Farmer AD, Strzelczyk A, [...] **Schuster NM** [...] Koenig J. International Consensus Based Review and Recommendations for Minimum Reporting Standards in Research on Transcutaneous Vagus Nerve Stimulation (Version 2020). *Frontiers Human Neuroscience* 2020 23;14:568051.
23. Conger AM, **Schuster NM** [...] McCormick, ZL. "The Effectiveness of Intraosseous Basivertebral Nerve Radiofrequency Neurotomy for the Treatment of Chronic Low Back Pain in Patients with Modic Changes: A Systematic Review." *Pain Medicine*. 2021 21;22(5):1039-1054.
24. Migdal CW, Moskatel LS, and **Schuster NM**. Headache Made SIMPAL: A Simple Mnemonic for the Approach to Headache Evaluation and Migraine Treatment." *Pain Medicine*. 2021 Mar 18;22(3):754-758.
25. **Schuster NM**, Clements N, Suri P, and Stojanovic M. "Is this spine pain facetogenic? Addressing diagnostic myths." *Pain Medicine*. 2021 Jul 25;22(Suppl 1):S31-S35.
26. **Schuster NM** and Gasperi M. "Not just preaching to the CHOIR—a map for improving comprehensive care of patients with chronic migraine and comorbid non-cephalic pain." *Headache*. 2021 61(6):805-807.
27. DeJulio PA, Perese JK, **Schuster NM**, & Oswald JC. Lasmiditan for the acute treatment of migraine. *Pain Management*. 2021. 11(5):437-449.
28. Eshraghi Y, Chakravarthy K, [...] **Schuster NM** [...] Deer T. The American Society of Pain and Neuroscience (ASPEN) Practical Guidelines to Study Design and Scientific Manuscript Preparation in Neuromodulation. *Journal of Pain Research*. 2021;14(1027-1041).
29. Barad M, Ailani J, Hakim SM, Kisson NR, **Schuster NM**, Percutaneous Interventional Strategies for Migraine Prevention: A Systematic Review and Practice Guideline, *Pain Medicine*, 2021; pna236, <https://doi.org/10.1093/pm/pna236>
30. Baumgartner JN, Quintana D, Leija L, **Schuster NM**, Bruno KA, Castellanos JP, Case LK. Widespread pressure delivered by a weighted blanket reduces chronic pain: A randomized controlled trial. *J Pain*. 2021 Aug 20:S1526-5900(21)00313-8. doi: 10.1016/j.jpain.2021.07.009. Epub ahead of print. PMID: 34425251.
31. Phillips C, Bagley B, McDonald MA, **Schuster NM**. Gibbs or Truncation Artifact on MRI Mimicking Degenerative Cervical Myelopathy. *Pain Med*. 2021 Dec 21:pna2346. doi: 10.1093/pm/pna2346. Epub ahead of print. PMID: 34931656.
32. Grosu O, Yamani N, **Schuster N**, Sreedharan J, Berchan J, Pradeep M, Riahi A, Thomas P. Effects of Anti-CGRP monoclonal antibodies for episodic and chronic migraine on migraine characteristics, disability, impact and quality of

- life beyond 3 months of treatment: A Systematic review and Meta-analysis. *Headach. Med. Con.* 2021;1(2):23–30. https://doi.org/10.52828/hmc.v1i2.1_cgrp
33. Moskatel LS, **Schuster NM**. Medication Overuse Headache: Results from a Pain Medicine Clinic Cohort. *Ann Head Med.* 2021;06:03. DOI: 10.30756/ahmj.2021.06.03
 34. Erosa SC, Moheimani RS, Oswald JC, Castellanos JP, Abraham ME, **Schuster NM**. Peripheral Nerve Stimulation for Chronic Pain and Migraine: A Review. *Phys Med Rehabil Clin N Am.* 2022 May;33(2):379-407. doi: 10.1016/j.pmr.2022.01.007. PMID: 35526976.
 35. Love SM, Hopkins BD, Migdal CW, **Schuster NM**. Occipital headache evaluation and rates of migraine assessment, diagnosis, and treatment in patients receiving greater occipital nerve blocks in an academic pain clinic. *Pain Med.* 2022 May 20;pnac080. doi: 10.1093/pm/pnac080. Epub ahead of print. PMID: 35595240.
 36. Lyon, RY and **Schuster NM**. Rate and Predictors of Chronic Pain Patients Establishing Care with Pain Psychology Following Pain Physician Referral. *Pain Med.* 2022 Jul 21;pnac107. doi: 10.1093/pm/pnac107. Epub ahead of print. PMID: 35861428.
 37. **Schuster NM**, Ahadian FM, Zhao Z, et al. Best practices for interventional pain procedures in the setting of an iodinated contrast media shortage: A multisociety practice advisory. *Interv Pain Med.* 2022;1(3):100122. doi:10.1016/J.INPM.2022.100122.
 38. Kurtz J S, Patel N A, Gendreau J L, [...] Casetellanos J, **Schuster N**, and Abraham, ME. et al. (September 14, 2022) The Use of Psychedelics in the Treatment of Medical Conditions: An Analysis of Currently Registered Psychedelic Studies in the American Drug Trial Registry. *Cureus* 14(9): e29167. DOI 10.7759/cureus.29167
 39. Nagpal AS, Zhao Z [...] **Schuster NM**. Best practices for interventional pain procedures in the setting of a local anesthetic shortage: A practice advisory from the Spine Intervention Society. *Interv Pain Med.* 2023; 2(1): 100177. <https://doi.org/10.1016/j.inpm.2023.100177>.
 40. Durbhakula S, Broachwala M, **Schuster NM**, McCormick ZL. Striking Errors in the Methodology, Execution, and Conclusions of the Cochrane Library Review of Spinal Cord Stimulation for Low Back Pain by Traeger et al. *Pain Med.* 2023 Apr 17;pnad047. doi: 10.1093/pm/pnad047. Epub ahead of print. PMID: 37067491.
 41. Durbhakula S, Broachwala MY, **Schuster NM**, McCormick ZL. A comprehensive response to the letter of Traeger and colleagues on spinal cord stimulation for low back pain. *Pain Med.* 2023 Sep 1;24(9):1129-1130. doi: 10.1093/pm/pnad060. PMID: 37195450.
 42. Towne BV, Gargiss CB, **Schuster NM**. Use of spinal cord stimulation in treatment of intractable headache diseases. *Pain Med.* 2023 Oct 13;24(Supplement_2):S6-S10. doi: 10.1093/pm/pnad090. PMID: 37833045.
 43. Yuan H, Strutner S, Yuh C, Anand S., Chauhan G., Prem A, **Schuster NM**. “Debunking Myths in Headache Diagnosis for the Pain Practitioner.” *Reg Anesth Pain Med.* 2023 Oct 10;rapm-2023-104803. doi: 10.1136/rapm-2023-104803. Epub ahead of print. PMID: 37816519.
 44. Gasperi M, **Schuster NM**, Franklin B, Nievergelt CM, Stein MB, Afari N. Migraine Prevalence, Environmental Risk, and Comorbidities in Men and Women Veterans. *JAMA Netw Open.* 2024 Mar 4;7(3):e242299. doi: 10.1001/jamanetworkopen.2024.2299. PMID: 38483390; PMCID: PMC10940970.
 45. Albinni B, Zimmerman M, Ross J, Ozdoyuran L, Alasha V, **Schuster NM**, Said E, Case L. Subcutaneous Oxytocin Injection Reduces Heat Pain: A Randomized-Controlled Trial. *J Pain.* 2024 Apr 18:104547. doi: 10.1016/j.jpain.2024.104547. Epub ahead of print. PMID: 38642595.
 46. Sandbrink F and **Schuster NM**, Opioids and Cannabinoids in Neurology Practice. *Continuum (Minneapolis Minn)* 2024;30(5, Pain Management in Neurology):1447–1474. Doi: 10.1212/Con.0000000000001487
 47. Lebel A And **Schuster Nm**, Pediatric Pain. *Continuum (Minneapolis Minn)* 2024;30(5, Pain Management in Neurology):1517-1535. Doi: 10.1212/Con.0000000000001489

SELECTED POSTERS

1. Lyon, RY and **Schuster NM**. “Poster Abstract 506: Factors related to chronic pain patients' decision to initiate behavioral pain treatment following their pain specialist referral. AAPM 2020 AWARD-WINNING SCIENTIFIC POSTER ABSTRACTS.” *Pain Medicine*, 21(6), 2020, 1307–1310. <https://doi.org/10.1093/pm/pnaa106>. American Academy of Pain Medicine Annual Meeting (National Harbor, MD). February 27-March 1, 2020.
2. Adams D, Catapano M, Kissoon NR, Barad M, Feoktistov A, Watson J, **Schuster N**, Kohan L, Knezevic N, Haque H, Gothard D, McNinch N, Souza D, Narouze S. “Greater Occipital Nerve Block for Migraine: A Meta-Analysis.” 19th Annual Pain Medicine Meeting. Nov 20-22, 2020. Virtual Meeting. <https://epostersonline.com/ASRA FALL20/node/506>
3. Love S, Migdal C, Hopkins B, **Schuster NM**. “Rates of migraine assessment, diagnosis, and treatment of patients receiving occipital nerve blocks in an academic pain clinic.” American Academy of Pain Medicine 2021 Virtual Annual Meeting. April 23-25, 2021.

4. Sexton, M, Telese, F, Montilla-Perez, P, Xu, G, Fisch, KM, Amador, A, **Schuster, NM**. “Transcriptional Changes in Patients with Chronic Neuropathic Pain: A Pilot Study.” Academy of Integrative Health & Medicine 2021 Annual Conference October 29-31, 2021.
5. **Schuster NM**, Lyon, RY, Chernov AV, Angert M, Strongin AY, Remacle AG, Lerman IR, Jones III RCW, Shubayev, VI. “Anti-myelin basic protein antibodies in women with radicular and non-radicular lumbar spine pain: A prospective pilot study.” American Academy of Pain Medicine 2022 Annual Meeting (Scottsdale, AZ). March 17-20, 2022.
6. **Schuster NM**, Wallace MS, Buse D, Marcotte T, Sexton M. Vaporized cannabis for the acute treatment of migraine: A double-blind, placebo-controlled, crossover RCT.” 2023 International Headache Congress (Seoul). September 14-17, 2023.
7. Zimmerman M, Ross J, Ozdoyuran L, Albinni B, Alasha V, **Schuster N**, Said E, and Case L. “Subcutaneous Oxytocin Injection Reduces Perception of Heat Pain.” Society for Social Neuroscience Annual Meeting. Virtual. November 2-3, 2023.
8. Gebre M and **Schuster N**. Percutaneous sphenopalatine ganglion stimulation using a 60-day temporary lead: A caution. North American Neuromodulation Society 2024 Annual Meeting (Las Vegas, NV). January 18-21, 2024.
9. Perese J, Chaudry S, Yih C, **Schuster N**. “Cervical Radiofrequency Ablation in a Patient with Deep Brain Stimulators: 6 treatments over 1.5 years.” North American Neuromodulation Society 2024 Annual Meeting (Las Vegas, NV). January 18-21, 2024.
10. Yih C, Chaudry S, Perese J, **Schuster N**. “Spinal Cord Stimulation in Restless Leg Syndrome.” North American Neuromodulation Society 2024 Annual Meeting (Las Vegas, NV). January 18-21, 2024.

BOOK CHAPTERS

1. **Schuster NM** and Robbins MS. “Headache in Pregnancy and Postpartum.” In Ravishankar, K., Evans, RW, and Wang, S-J (eds.) Modern Day Management of Headache- Questions and Answers. Jaypee, 2017.
2. **Schuster NM**. “Diagnosis and Management of Migraine.” In Suen J and Petersen E (eds) Diagnosis and Management of Head and Face Pain: A Practical Approach. Springer, 2018.
3. Nassery A, **Schuster NM**. “Cervicogenic Headache.” In Mao J. (ed.) Spine Pain Care: A Comprehensive Clinical Guide. Springer, 2019.
4. Gutin G, **Schuster NM**. “Inpatient Headache.” In Edwards DA, Gulur P and Sobey CM(eds.) Hospitalized Chronic Pain Patient: A Multidisciplinary Treatment Guide, 1st Ed. Springer, 2022.
5. **Schuster NM**, Wainger BJ. “Headache.” In Brenner GB and Rathmell JP (eds.) Massachusetts General Hospital Handbook of Pain Management, 4th Ed. Lippincott, Williams and Wilkins, 2020.
6. Cheng DS and **Schuster NM**. “Indications.” International Pain and Spine Intervention Society Technical Manual, 3rd Ed. (In Press).
7. **Schuster NM** and Sharma AK. “Contraindications.” International Pain and Spine Intervention Society Technical Manual, 3rd Ed. (In Press).
8. Ehsanian R, Haring S, **Schuster N**, Hambraeus J, Nagpal A, Boies B, Miller D. “Informed Consent.” International Pain and Spine Intervention Society Technical Manual, 3rd Ed. (In Press).
9. Moskatel LS and **Schuster NM**, “Migraine Pathophysiology.” In Krishnan V. Chakravarthy MD, PhD, Mark Wallace MD, Tony Yaksh PhD (eds.) Mechanisms of Pain, (In Press).
10. Smuck M, Cheng D, **Schuster NM**, Kreiner DS. “Basivertebral Nerve Radiofrequency Neurotomy.” International Pain and Spine Intervention Society Technical Manual, 3rd Ed. (In Press).
11. Naftulin S, Scholten P, **Schuster NM**, El-Yahchouchi C, Gill J. “Cervical Epidural Steroid Injection.” International Pain and Spine Intervention Society Technical Manual, 3rd Ed. (In Press)
12. Rangon CM, DeJulio P, and **Schuster NM**. Interventional procedures for headaches and facial pains. Thomas P and Green M (eds.), Clinician’s Companion to Headache and Facial pain. Elsevier (In Press).
13. DeJulio P, Rangon CM, and **Schuster NM**. Non-invasive neuromodulation for headaches and facial pains. Thomas P and Green M (eds.), Clinician’s Companion to Headache and Facial pain. Elsevier (In Press).
14. Menon, M, Sharma, Y, Girgiss, C and **Schuster NM**. Approach to a patient with neck pain. Thomas p and green m (eds.), clinician’s companion to Headache and Facial pain. Elsevier (In Press).
15. Kesayan T, Flannery MP, and **Schuster NM**. “Migraine and Pain Disorders.” Monteith TS and Riggins NY (eds.), Comprehensive Migraine Management. Springer, (In press).

PRESENTATIONS

1. “Using Search Engine Query Data to Track Trends for Health Services Research: A Study of Statins.” **Schuster NM**, Rogers MA, and McMahon LF. Podium Presentation. American Medical Association Medical Student Section and Resident and Fellow Section Joint Research Symposium, 2009 American Medical Association Interim Meeting (Houston, TX). November 6-7, 2009.
2. “Frontiers in Headache Research” Scholarship Presentation: “Serum CGRP and NGF levels in New Daily Persistent Headache.” **Schuster NM**, Robbins MS, Lipton RB. Scottsdale Headache Symposium. Scottsdale, AZ. November 21,

2015.

3. "Headache and Pain." **Schuster NM**. Podium Presentation. 2018 American Academy of Neurology Annual Meeting Brain Health Fair (Los Angeles, CA). April 20, 2018.
4. "A Critical Review of the Influential Papers of 2017." Podium Presentation. Schwarzer AC, **Schuster NM**, Rivers WE, Schneider BJ. 2018 Spine Intervention Society Annual Meeting (Chicago, IL). August 16, 2018.
5. "Headache Evaluation & Management: Medical & Interventional Approaches." Podium Presentation. **Schuster NM** and Feoktistov A. 2019 American Academy of Pain Medicine "Pain Management Best Practices" Pre-Conference Session (Denver, CO). March 6, 2019.
6. "Is there a role for greater occipital nerve blocks in migraine?" **Schuster NM**. American Academy of Pain Medicine Annual Meeting (Denver, CO). March 9, 2019.
7. "Procedures Workshop: Nerve Blocks and OnabotulinumtoxinA." Marmura M, **Schuster NM**, Ansari, H. American Headache Society Next Generation Migraine Therapies Course (San Diego, CA). April 6, 2019.
8. "A Critical Review of the Influential Papers of 2018." Podium Presentation. **Schuster NM***, Schwarzer AC, Zheng P, Rivers WE. 2019 Spine Intervention Society Annual Meeting (New York, NY). August 15, 2019. *Session Moderator and Speaker.
9. "Clinical Trials and Cutting-Edge Therapies for Refractory Pain." Podium Presentation. **Schuster NM**. Facial Pain Association Annual Conference (San Diego, CA). November 3, 2019.
10. "Factors Related to Chronic Pain Patients' Decision to Initiate Behavioral Pain Treatment Following Pain Specialist Referral." Podium Presentation. **Schuster NM**. American Academy of Pain Medicine Annual Meeting (National Harbor, MD). February 28, 2020.
11. "The Headache Toolkit: Treating (and Teaching) Headache for Non-Neurologists." Podium Presentation. **Schuster NM***, Barad, M and Kissoon, N. American Academy of Pain Medicine Annual Meeting (National Harbor, MD). March 1, 2020. *Session Moderator and Speaker.
12. "Next Generation Acute Treatment: Addressing Unmet Needs." **Schuster NM**. American Headache Society Next Generation Migraine Therapies Course (Seattle, WA). March 21, 2020. (Scheduled but not presented due to COVID-19; this talk was developed by the American Headache Society)
13. "Next Generation Preventive Treatment." **Schuster NM**. American Headache Society Next Generation Migraine Therapies Course (Salt Lake City, UT). April 4, 2020. (Scheduled but not presented due to COVID-19; this talk was developed by the American Headache Society)
14. "Alternative Treatments for Migraine." **Schuster NM**, Gottschalk FC, Golden K. RetreatMigraine 2020 Annual Meeting (Redondo Beach, CA but converted to Virtual Conference on same date). April 19, 2020.
15. "Technology and Pain Medicine in 2020: Breakthrough or Just Another Widget?" **Schuster NM**, Sivanesan E, Hah J, Shirvalkar, P. Podium Presentation and Panel. International Anesthesia Research Society 2020 Annual Meeting (San Francisco, CA). May 17, 2020. (Accepted but not presented due to conference cancellation due to COVID-19)
16. "New Strategies for Treatment and Prevention and Primary Headache Disorders." **Schuster NM**. 2020 Tiantan Neurology Annual Meeting (Beijing, China). June 19-21, 2020. (Accepted but not presented due to COVID-19)
17. "Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies." Smith CC and **Schuster NM**. Spine Intervention Society Annual Meeting (Scheduled initially as pre-course at Annual Conference in San Diego, CA but converted to Virtual Conference due to COVID-19, and this pre-course changed into webinars to take place several times over the year). July 15, 2020.
18. "Approaches to Headache" **Schuster NM**, Barad MJ, Argoff CE, Pilitsis JG, Deer T, Chakravarthy KV. Understanding Advances in Headache Management. American Society of Pain and Neuroscience Webinar. July 29, 2020.
19. "Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies." **Schuster NM**. Webinar. October 20, 2020.
20. "Acute Migraine Treatment." **Schuster NM**. 2nd Iranian International Headache School. Iranian Headache Society and International Headache Society. Virtual Conference. January 15, 2021.
21. "Headache Made SIMPAL." **Schuster NM**. 1st World Headache Society Headache School. World Headache Society. Virtual Conference. February 28, 2021.
22. Headache Rapid Fire: Medical and Interventional Management Pearls. Podium Presentation. Kissoon N, Barad M, Watson J, and **Schuster NM**. American Academy of Pain Medicine Annual Meeting (Virtual Conference). April 23, 2021.
23. "Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies." **Schuster NM**. Webinar. May 2, 2021.
24. "Innovations in Migraine: Newly Approved Therapies, Those in Development, and Emerging, Alternative Treatment Options." **Schuster NM**. San Diego, Evolving Approaches in Pain Management. MJH Life Sciences. Physician's Education Resource. August 14th, 2021.

25. "Epidural Use of Biologics." **Schuster NM**. Spine Intervention Society Annual Meeting. Washington, DC. August 19, 2021.
26. Speaker for Migraine World Summit on Cannabinoids for Migraine. Recorded September 17, 2021.
27. "Botulinum Toxin Injections for Chronic Migraine and Cervical Dystonia." American Society of Anesthesiology Annual Conference. San Diego, CA. October 11, 2021.
28. "Procedural Headache (Part 1)." World Headache Society Headache & Facial Pain Medicine Certification Course. October 10, 2021
29. "Procedural Headache (Part 2)." World Headache Society Headache & Facial Pain Medicine Certification Course. October 17, 2021.
30. "Portable Non-Invasive Neuromodulation for Headache" **Schuster NM**, Narouze S, Barad M, Pingree M, Leung A, Kisson N. Podium Presentation, North American Neuromodulation Society 2022 Annual Meeting. Orlando, FL. January 14, 2022.
31. "Navigating the Intersection of Migraine and Opioid Use Disorder. Part 2: Interventional, Neuromodulation, and Behavioral Approaches." Barad MJ, **Schuster, NM**, Kisson NR, Poupore-King, H. American Academy of Pain Medicine/Providers Clinical Support System CME Webinar Series. Feb. 2, 2022.
32. "Navigating the Intersection of Migraine and Opioid Use Disorder. Part 3: Clinical Case Discussion." Barad MJ, **Schuster, NM**, Argoff, C. American Academy of Pain Medicine/Providers Clinical Support System CME Webinar Series. Feb. 14, 2022.
33. "Headache: Where we are and where we are going." Barad MJ, **Schuster NM** and Halker-Singh R. 2022 American Academy of Pain Medicine Annual Conference. Scottsdale, AZ. March 19, 2022.
34. "Hot Topics in Headache." Burish MJ, **Schuster, NM**, Schindler EM, Largent-Milnes, T. 2022 American Headache Society Annual Scientific Meeting. June 9, 2022, Denver, CO.
35. "Neck Pain." World Headache Society Headache & Facial Pain Medicine Certification Course. June 26, 2022.
36. Speaker and Moderator, "Headache and Facial Pain Case Discussion. American Society of Regional Anesthesia and Pain Medicine (ASRA Pain Medicine). Webinar. July 27, 2022.
37. Podcast Guest. American Society of Regional Anesthesia and Pain Medicine (ASRA Pain Medicine) Regional Anesthesiology and Pain Podcast (RAPP). Livestreamed July 18, 2022 and Podcast August 9, 2022.
<https://www.asra.com/news-publications/podcasts/podcast-item/rapp-podcast/2022/08/09/episode-47-advances-in-headache-treatment-with-the-headache-sig>
38. Speaker, "New and Emerging Migraine Treatments." 25th National Conference of Neurology. Chinese Medical Association. Chongqing, China but changed to Virtual due to pandemic-related lockdowns. September 17, 2022.
39. Speaker, "Acute Migraine Treatment. **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. October 2, 2022.
40. "Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies." **Schuster NM**. Spine Intervention Society. Webinar. October 30, 2022.
41. Speaker, "Cannabinoids: What Headache Practitioners Should Know." **Schuster NM**. American Headache Society Scottsdale Headache Symposium. Plenary Session Podium Presentation. November 18, 2022.
42. "Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies." **Schuster NM**. Spine Intervention Society. Webinar. December 4, 2022.
43. Speaker, "Fluoroscopic-Guided Treatments for Head, Neck, and Facial Pain. **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. December 18, 2022.
44. Discussant, "Case Presentations. **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. January 1, 2023.
45. "Peripheral Field Stimulation and Non-Invasive Neuromodulation for Trigeminal Autonomic Cephalalgias" **Schuster NM**, Narouze S, Antonescu, M, D'Souza R, Kisson N. Podium Presentation, North American Neuromodulation Society 2023 Annual Meeting. Las Vegas, NV. January 14, 2023.
46. Speaker and Moderator, "Headache and Facial Pain Case Discussion. American Society of Regional Anesthesia and Pain Medicine (ASRA Pain Medicine). Webinar. January 28, 2023.
47. Podcast Guest. Durbhakula S, Broachwala M, McCormick ZL, **Schuster NM**, "Reaction & Analysis to the March 2023 Cochrane Library Review on Spinal Cord Stimulation for Low Back Pain with Nathaniel M. Schuster, MD, and Zachary McCormick, MD." American Academy of Pain Medicine Pain Matters Podcast. Livestreamed March 25, 2023 and Podcast March 30, 2023.
48. **Schuster NM** "Percutaneous Ligamentum Flavum Decompression: an Evidence Update." Part of "Mega Session: Advances in Minimally Invasive Spine." McCormick, Z, Conger A, Smuck M, Mahan M, **Schuster NM**. American Academy of Pain Medicine 2023 Annual Meeting. Ft. Lauderdale, FL. March 25, 2023.
49. Aggarwal A, Kisson NR, **Schuster NM**, Qian X. "The Management of Complex Neck and Head Pain: A Problem Based Approach. American Academy of Pain Medicine 2023 Annual Meeting. Ft. Lauderdale, FL. March 25, 2023.
50. **Schuster NM** and LeBel A. Pain Research Abstract Session. American Academy of Neurology 2023 Annual Meeting.

Boston, MA. April 25, 2023.

51. Speaker, “Acute Migraine Treatment. **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. May 7, 2023.
52. Speaker, “Neck Pain.” **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. May 28, 2023.
53. **Schuster NM**, “Vaporized cannabis for the acute treatment of migraine: A double-blind, placebo-controlled, crossover RCT.” 2023 American Headache Society Annual Scientific Meeting (Austin, TX).
54. **Schuster NM**, “Rimegepant for the Treatment of Migraine.” 26th National Conference of Neurology. Chinese Neurology Association Annual Meeting in Chengdu, China. Recorded Virtually, July 27, 2023. Presented to audience in Chengdu, China September 7-10, 2023.
55. Speaker, “Fluoroscopic-Guided Treatments for Head, Neck, and Facial Pain. **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. August 20, 2023.
56. Speaker, “Peripheral Nerve Stimulation for Shoulder and Neck Pain.” International Pain and Spine Intervention Society (IPSIS; previously SIS) 2023 Annual Meeting. Chicago, IL, September 21, 2023..
57. Speaker, “Indications and Selection Process for Implantable Neuromodulation to Maximize Outcomes and Best Treat the Patient’s Diagnosis.” International Pain and Spine Intervention Society (IPSIS; previously SIS) 2023 Annual Meeting. Chicago, IL, September 22, 2023.
58. Moderator and Speaker, “Cannabinoids for Headache” talk, “Cannabinoids Pain and Headache” webinar. ASRA Pain Medicine Webinar. October 25, 2023.
59. Speaker, “Approach to Neck Pain.” World Headache Society Winter Regional Symposium Abu Dhabi (presented virtually). December 24, 2023.
60. Speaker, “Neurology in the Cross Section of Neuromodulation.” Neuromodulation: From Brain to Peripheral Nerve Pre-Course. North American Neuromodulation Society (NANS) Annual Meeting (Las Vegas, NV). January 18, 2024.
61. Panelist, “Let’s Talk Multi-Disciplinary Groups- Panel.” Neuromodulation: From Brain to Peripheral Nerve Pre-Course. North American Neuromodulation Society (NANS) Annual Meeting (Las Vegas, NV). January 18, 2024.
62. Panelist, “Discussion of Tough Cases- Panel.” Neuromodulation: From Brain to Peripheral Nerve Pre-Course. North American Neuromodulation Society (NANS) Annual Meeting (Las Vegas, NV). January 18, 2024.
63. Moderator, “Facial Pain Breakfast Session.” North American Neuromodulation Society (NANS) Annual Meeting (Las Vegas, NV). January 19, 2024.
64. Podcast Guest. Durbhakula S, Broachwala M, **Schuster NM**, “Setting the Record Straight: A Response to JAMA on Corporate Influences on Spinal Cord Stimulation. American Academy of Pain Medicine Pain Matters Podcast. Podcast Jan. 25, 2024.
65. Speaker, “Vaporized Cannabis for Acute Migraine: A Randomized, Double-Blind, Placebo-Controlled Trial.” American Academy of Pain Medicine Annual Meeting, March 8, 2024.
66. Speaker, **Schuster NM**, Romero-Reyes M, and Barad M. “Cases at the Intersection of Headache and Facial Pain.” American Academy of Pain Medicine Annual Meeting, March 9, 2024.
67. Moderator, “Pain Research Abstracts.” American Academy of Neurology Annual Meeting, April 16, 2024.
68. Speaker, “Vaporized Cannabis for Acute Migraine: A Randomized, Double-Blind, Placebo-Controlled Trial.” American Academy of Neurology Annual Meeting, April 16, 2024.
69. “Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies.” **Schuster NM**. Webinar. May 9, 2024.
70. Speaker, “Vaporized Cannabis for Acute Migraine: A Randomized, Double-Blind, Placebo-Controlled Trial.” American Headache Society Annual Meeting, San Diego, CA, June 14, 2024.
71. Speaker, “Migraine Prevalence in Veterans.” American Headache Society Annual Meeting, San Diego, CA, June 14, 2024.
72. Speaker, “Neck Pain.” World Headache Society Headache & Facial Pain Medicine Certification Course. June 23, 2024.
73. Speaker, “Fluoroscopic-Guided Treatments for Head, Neck, and Facial Pain. **Schuster NM**. World Headache Society Headache & Facial Pain Medicine Certification Course. August 28, 2024.
74. Moderator of Headache Session and Speaker, “Headache Made SIMPAL,” International Pain and Spine Intervention Society Annual Meeting, Boston, MA, September 12, 2024.

EDITORIAL BOARDS

2018-Present	Pain Medicine- Section Co-Editor, Teaching Images
2019-Present	Annals of Headache Medicine- Section Editor, Head and Neck Imaging
2020-2021	Pain Medicine- Section Co-Editor, Neuropathic Pain
2021-Present	Pain Medicine- Section Editor, Neuropathic Pain
2021	Practical Neurology- Guest Co-Editor, Pain and Headache Double-Issue March/April and May 2021
2021-Present	Interventional Pain Medicine

2023-2024 Guest Editor, Pain Issue (October 2024), *Continuum* (American Academy of Neurology)

REVIEWER

2015-Present The International Journal of Neuroscience
2016-Present Headache
2016-Present Clinical Pharmacology in Drug Development
2016-Present SAGE Open Medical Case Reports
2017-Present Pain Medicine
2017-Present The Journal of Headache and Pain
2017-Present Cephalalgia
2017-Present Pharmacology
2017-Present American Journal of Managed Care
2017-Present Clinical Neuropharmacology
2018-Present Journal of the American Geriatrics Society
2018-Present Annals of Medicine
2018-Present Brain and Behavior
2019-Present Scientific Reports
2020-Present British Journal of Pharmacology
2020-Present Journal of Pain Research
2020-Present Neuromodulation
2021-Present Clinical Journal of Pain
2021-Present Interventional Pain Medicine
2021-Present Headache Medicine Connections
2022-Present Annals of Headache Medicine
2022-Present Drugs of Today
2022-Present Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy
2022-Present Pain Practice
2022-Present PM&R: The Journal of Injury, Function and Rehabilitation
2022-Present Pain Management
2022-Present Nature Communications
2022-Present iScience
2023-Present Expert Review of Neurotherapeutics
2023-Present Neurology
2023-Present Mayo Clinic Proceedings
2023-Present Cephalalgia Reports

RESEARCH TRAINING COURSES

1. Introductory Course in Clinical Research, University of Michigan Medical School, Spring 2009
2. Design and Conduct of Clinical Trials, Massachusetts General Hospital, Fall 2016
3. Accreditation Course in Evidence-Based Medicine: Assessing Studies of Treatment, Spine Intervention Society, Summer 2018
4. Accreditation Course in Evidence-Based Medicine: Assessing Studies of Diagnostic Tests and Strategies, Spine Intervention Society, Summer 2019
5. Grant Writing Course, UC San Diego Office of Faculty Affairs, Fall 2021

RESEARCH GRANT REVIEWER

2017-2021 Spine Intervention Society Research Division Grants
2021-Present Patient-Centered Outcomes Research Institute (PCORI)
2024-Present NIH/NINDS

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

2007-Present American Academy of Neurology

- 2018-2020 Member, American Academy of Neurology/American Headache Society Headache Measure Development Work Group
- 2019 Reviewer, American Academy of Neurology Annual Meeting Pain/Palliative Scientific Abstract Reviewer
- 2022-Present Pain Topic Chair for 2023, 2024, and 2025 AAN Annual Meetings Scientific Programs
- 2023-Present Guest Editor, *Continuum* Pain Issue (October 2024)
- 2025 (Incoming) Vice Chair-Elect, Pain Special Interest Group

2015-Present American Headache Society

- 2018-2020 Member, American Academy of Neurology/American Headache Society Headache Measure Development Work Group

2016-Present Interventional Pain and Spine Intervention Society (formerly Spine Intervention Society)

- 2017-2021 Member, Research Division
- 2019-2021 Member, Evidence Analysis Committee
- 2021-Present Member, Standards Division
- 2021-Present Vice Chair, Guidelines Committee
- 2023-Present Member, 2023, 2024, and 2025 Annual Meetings Planning Committee

2016-Present American Academy of Pain Medicine

- 2018-2021 Migraine Guidelines Consensus Panel
- 2020-Present Finance Committee Member
- 2024-Present Board of Directors

2018-2019 North American Neuromodulation Society Transcranial Magnetic Stimulation Consensus Panel

2019-Present International Headache Society

2020-Present World Headache Society

- 2021-2023 Executive Vice President
- 2022-Present Co-Director, World Headache Society Headache & Facial Pain Medicine Certification Course
- 2023-Present Senior Vice President

2017-2018, 2022-Present American Society of Regional Anesthesia and Pain Medicine

- 2022-Present Chair, Headache and Facial Pain Special Interest Group (SIG)