

CURRICULUM VITAE



SHOBANA RAJAN, M.D

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EXPERIENCE

- Anesthesiologist and Vice Chair of Education, Associate Director of Neuroanesthesiology, Academic Officer for Anesthesiology(2019-2020), Allegheny Health Network, Feb 2019 to current, Pittsburgh, PA, USA
- Staff Anesthesiologist/Assistant Professor of Anesthesiology, Cleveland Clinic/ Lerner College of Medicine, July 1, 2015 to February 2019,Cleveland, OH,USA
- Attending anesthesiologist, Albany medical center, 2014 – 2015, Albany, NY,USA
- Senior consultant, Apollo specialty hospital, Anesthesiology, January 1, 2001-October 17, 2006, Chennai, India
- Assistant professor, Sri Ramachandra Medical college Hospital and Research Institute, Anesthesiology, Nov 1996- Dec 2000, Chennai, India

EDUCATION & TRAINING

- Resident in Anesthesiology, 2010- 2014
Cleveland Clinic, Cleveland OH,USA
- Fellow in Neuro-anesthesiology, 2009- 2010,Cleveland,OH

- Senior Resident General Anesthesia/ Fellowship in Cardiac Anesthesia, Sanjay Gandhi, Postgraduate Institute of Medical sciences, Lucknow, India, 1994- 1996.
- Resident in Anesthesiology, Post Graduate Institute of Medical Education and Research, Chandigarh India, 1991- 1993.
- Medical School – Madras medical college, Chennai, India- 1984-1990

CERTIFICATIONS

- American Board of Anesthesiology (ABA) 2015
- National Board of Echocardiography Basic TEE exam 2014
- Program Director Certification course, Cleveland clinic 2017
- Foundations of FLEX program (Leadership program for women offered by case Western Reserve University) 2018
- MD(Anesthesiology) , Chandigarh, India 1993
- PDCC(Postdoctoral certificate course) Cardiac anesthesia, Lucknow, India 1996

LICENSURE

- Ohio State Medical Board Initial License date: Dec 6, 2013, current
 - License No: 35.122619
- Pennsylvania State Medical Board Initial License date: Jan 25 2019, current
 - License No: MD 466416

HONORS AND AWARDS

- **ASA Distinguished educator award 2021**
- **2020 Teacher of the year- Lifetime educator award- SNACC**
- **Educator of the year award 2020- Allegheny Health Network**
- **Affiliate faculty member, Harborview Injury Prevention & Research Center, UW**

- Second prize- Residents research day presentation- Factors predicting renal failure after partial nephrectomy-Cleveland Clinic 2014
- Third prize- Midwest anesthesia resident's conference- "Awake craniotomy-An analysis of intraoperative management" - Podium presentation - MARC 2010.
- House staff association of the Cleveland clinic grant for conducting a study on "Simulation for education in Neuro-anesthesia" (year 2011 & 2012).
- Research grant from Hospira for the study "A comparison of remifentanyl versus dexmedetomidine for craniotomy". (2010)- Randomized controlled trial, Cleveland Clinic., Manuscript published 2015, Journal of Neurosurgical Anesthesiology.

EDITORIAL BOARD

Editorial board member of Journal of Neurosurgical Anesthesiology - 2021

REVIEWER

- Journal of Neuro surgical Anesthesiology and Critical Care
- Indian Journal of Neuro Anesthesiology and Critical Care
- Journal of Education and Peri-operative Medicine

MEMBERSHIP AND APPOINTMENTS IN PROFESSIONAL SOCIETIES

Society of Neurosciences in Anesthesiology and critical care (SNACC)

- **Director at Large – Board of Directors (Current appointment)**
- **Chair of Trainee Engagement Committee (2017 to current)**
- **Executive Council member of International Council of Perioperative Neuroscience Training(ICPNT)- (Neuroanesthesia fellowship accreditation)**
- **Chair of Neuroanesthesia Program Relations Committee of ICPNT**

Society of education in anesthesia (SEA)

- **Advancement of Technology in Anesthesia Education Committee member (Current)**

American Society of Anesthesiologists (ASA)

- **Member and Abstract reviewer for clinical Neuroanesthesiology Committee (2016 to Current)**
- **Neuroanesthesia education sub track committee member 2020**
- ASA committee on Neuroanesthesia member 2021
- Moderator for Medically Challenging cases Poster sessions (2015 to current)
- Society of academic associations of Anesthesiology and Perioperative medicine(SAAPM) 2019-2020
- International Anesthesia Research Society (IARS)
- Pennsylvania Society of Anesthesiology
- Indian society of Neuro Anesthesiology and Critical Care-ISONACC (International committee member)

COMMUNITY SERVICE

- William L Young fundraiser Dinner for the Society of Neuro Anesthesia (SNACC)

EDUCATIONAL ACTIVITIES **(National and International)**

SNACC

I oversee all the educational activities for Residents and fellows such as neuroanesthesia blog posts, challenging case section on SNACC newsletter, Residents audio podcasts.

- Neuroanesthesia quiz- team leader for the quiz group (monthly publication at the SNACC website).page views per 3 months - 300
- Residents and fellows audio corner-SNACC (every two months)-Page views per 3 months 203
- Neuroanesthesia classroom
- Bibliography SNACC website (yearly contribution) – multimodal analgesia for spine surgery, enhanced recovery pathways, hypoxemic ischemic encephalopathy).
- Moderator in SNACC for clinical neurosciences poster session (2017 to 2020)
- Quiz master at SNACC – “Neuroanesthesia review fun” 2017, 2018,2019,2020.

ASA

- Moderator in ASA for clinical neurosciences poster session 2018,2019,2020
- Moderator in American Society of Anesthesiology 2015/2016/2017/2018/2019- sessions on medically challenging case poster presentations.

SEA

- Workshop Leader- Learning Management systems April 2018
- Curing structural racism to make room for Diversity in medicine-Society for education in anesthesiology meeting 2019, Denver Colorado – workshop
- Fair use of copyright- Workshop at SEA, spring 2017 - workshop facilitator.

ISNACC (Indian Society of Neuroanesthesiology and Critical care)

- You tube live- Lead faculty – Anesthesia for awake craniotomy with intraoperative MRI (Dec 2018)- watched by 500.
- Quiz master at I SNACC (Indian society of Neuroanesthesiology and critical care 2018 , 2019
- Quiz master at All India of institute of Medical Sciences, Delhi, India Neuroanesthesia update- Delhi India 2018.
- Judge for poster session at All India of institute of Medical Sciences, Delhi, India Neuroanesthesia update- Delhi India 2018.

EDUCATIONAL ACTIVITIES - AHN

- Created an online learning management system for all residents to use during their rotations. Various modules incorporated (cardiac, neuro, PACU, chronic pain). The software was purchased from Totara.
- Make the lecture schedule for the residents for the whole year incorporating PBLD based learning and electronic quizzes.
- Clinical Competence committee and mentor to residents.

EDUCATIONAL ACTIVITIES- CLEVELAND CLINIC

- Neuroanesthesia rotation residency curriculum development- Cleveland clinic – Web based platform.
- PACU educational curriculum development- Cleveland clinic (web-based learning management system)
- Organized Neuroanesthesia Problem based learning discussion (PBLD) and journal clubs for residents and fellows during neuro rotation (weekly).

- Organized general anesthesia PBLDs for residents during General anesthesia rotation (Weekly)
- Organized Journal clubs with dinner at faculty homes in anesthesia (every two months)
- Conducted quiz programs for residents on a regular basis
- Lecturer at Anesthesia Board recertification course 2017 and 2018
- Anesthesia for Awake Craniotomy- CA 3 class (Annual Resident Lectures)
- Anesthesia for Spine Surgery – CA-2 class(Annual Resident Lectures)

GRAND ROUNDS

- ❖ **Grand Rounds at Emory- Combined neuroanesthesiology and neurosurgery grand rounds – Feb 18, 2021**
- ❖ **Grand rounds at University of Arkansas in December 1 2020**
- ❖ **Extracranial-Intracranial Bypass- Grand Rounds at Penn State Dec 17, 2020**
- ❖ EEG monitoring should become standard of care or not- Moderated debate Allegheny health network 2019
- ❖ Anesthesia for intraoperative MRI and Awake Craniotomy- Cleveland Clinic 2019
- ❖ An unusual reaction to Anesthesia- A case of Sevoflurane induced Hepatotoxicity – Cleveland Clinic 2018
- ❖ Inhalational Anesthetics – Barash Lecture Series – 2017
- ❖ Respiratory physiology –Barash Lecture Series -2016
- ❖ Postoperative Cognitive Dysfunction – Cleveland Clinic 2016 – Mentored Resident Presentation.
- ❖ Management of External Ventricular Drainage Catheters – Cleveland Clinic 2010

LAY PRESS

- Cleveland clinic newsroom: August 28,2018 Baby Born After Unconventional Delivery Celebrates First Birthday – Anesthesiologist Role in the Case. The same case was also featured in the “**Todays Show**” on May 9,2018.
- You tube- Featured IARS 2019 sessions – Anesthesia for stroke
- You tube – Lead faculty- Neuro-anesthesia master classroom- Anesthesia for awake craniotomy with intraoperative MRI

BIBLIOGRAPHY- Peer reviewed Journals

1. **Oculocardiac reflex during retinal surgery using peribulbar block and nitrous narcotic anesthesia** ;Grover VK, Bhardwaj N, **Shobana N**, Grewal SP.. Ophthalmic Surg Lasers. 1998 Mar; 29 (3):207-12.
2. **Optimal Tidal volume during IPPV**; Kaushik.S, **Rajan.S**, Indian Journal of Anesthesia 1998, Jun, 42 (3): 23-6.
3. **Asleep-awake-asleep craniotomy: a comparison with general anesthesia for resection of supratentorial tumors** **Rajan S**, Cata JP, Nada E, Weil R, Pal R, Avitsian R;JClin Neurosci. 2013 Aug; 20(8):1068-73.
4. **Factors predicting incremental administration of antihypertensive boluses during deep brain stimulator placement for Parkinson's disease.** **Rajan S**, Deogaonkar M, Kaw R, Nada EM, Hernandez AV, Ebrahim Z, Avitsian R. J Clin Neurosci. 2014 Oct; 21(10):1790-5.
5. **Retrograde type A aortic dissection after Thoracoabdominal aneurysm repair: early diagnosis with Intraoperative transesophageal echocardiography .** **Rajan S**, Sonny A, Sale S. A A Case Rep. 2015 Mar 1; 4(5):58-60.PMID:25730411
6. **Comparison of 2 resident learning tools interactive Screen-based simulated case scenarios versus problem-based learning discussions: a prospective quasi crossover cohort study.** **Rajan S**, et al;. J Clin Anesth. 2016 Feb; 28: 4-11.
7. **Perioperative Factors Associated with Acute Kidney Injury after Partial Nephrectomy.** **Rajan S** et al; Br J Anaesth. 2016 Jan; 116(1):70-6.
8. **The Effects of Dexmedetomidine and Remifentanil on Hemodynamic Stability and Analgesic Requirement After Craniotomy: A Randomized Controlled Trial .****Rajan S**, Hutcherson MT, Sessler DI, Kurz A, Yang D, Ghobrial M, Liu J, Avitsian R.J Neurosurg Anesthesiol. 2016 Oct;28(4):282-90.
9. **Intraoperative Hypotension during Second Stage of Deep Brain Stimulator Placement: Same Day versus Different Day Procedures** Nada EM, **Rajan S**, Grandhe R, Deogaonkar M, Zimmerman NM, Ebrahim Z, Avitsian R.. World Neurosurg. 2016 Nov;95:40-45.
10. **Lack of Association between Preoperative Statin Use and Respiratory and Neurologic Complications after Cardiac Surgery.** Komatsu R, Yilmaz HO, You J, Bashour CA, **Rajan S**, Soltesz EG, Sessler DI, Turan A. Anesthesiology. 2017 Feb 16.
11. **Steroid administration after anesthetic induction with etomidate does not reduce in-hospital mortality or cardiovascular morbidity after non-cardiac surgery** R.

Komatsu, J. You, **S. Rajan**, Y. Kasuya, D. I. Sessler and A. Turan Br J Anaesth. 2018 Mar; 120(3):501-508.

- 12. Cognitive Aids for the Diagnosis and Treatment of Neuroanesthetic Emergencies: Consensus Guidelines on Behalf of the Society for Neuroscience in Anesthesiology and Critical Care (SNACC) Education Committee.** Hoefnagel AL1, **Rajan S2**, Martin A2, Mahendra V3, Knutson AK4, Uejima JL4, Kositratna G1, Weller M5, Yang H2, Ahuja S2, Bailey C1, Bebawy JF J Neurosurg Anesthesiol. 2018 Oct 16. doi: 10.1097/ANA.0000000000000551. [Epub ahead of print]
- 13. Simulation Versus Problem Based Learning for Cerebrospinal Drainage Catheter Insertion and Management: A Randomized Trial in a Large Academic Anesthesiology Residency Program.** Argalious M, Trombetta C, Makarova N, Saasouh W, **Rajan S.** J Cardiothorac Vasc Anesth. 2018 Jul 25. PMID: 30149982
- 14. Combined use of minimal access craniotomy, intraoperative magnetic resonance imaging, and awake functional mapping for the resection of gliomas in 61 patients.** Whiting BB, Lee BS, Mahadev V, Borghei-Razavi H, Ahuja S, Jia X, Mohammadi AM, Barnett GH, Angelov L, **Rajan S**, Avitsian R, Vogelbaum MA. J Neurosurg. 2019 Jan 25:1-9. doi: 10.3171/2018.9.JNS181802. [Epub ahead of print]
- 15. Hepatotoxicity after sevoflurane anaesthesia: a new twist to an old story.** **Rajan S**, Garg D, Cummings KC 3rd, Krishnaney AA. Br J Anaesth. 2019 Apr;122(4):e63-e64. doi: 10.1016/j.bja.2019.01.003. Epub 2019 Jan 25. PMID: 30857610
- 16. International Multicenter Survey of Perioperative Management of External Ventricular Drains: Results of the EVD Aware Study.** Lele AV, Mills B, Qiu Q, Schloemerkemper N, Naik BI, Williams J, Venkat-Raghavan L, Vavilala MS; Lakireddy V, Yang A, Christensen C, Palmieri K, Avitsian R, **Rajan S**, Algarra NN, Rochlen LR, Fraumann RJ, Takala R, Paisansathan C, Rath GP, Deopujari R, Pasternak J, Abramowicz AE, Dinsmore J, Gollapudy S, Bustillo M, Mathews L, Navarro JC, Kofke A, Kim J, McDonagh D, Jaffe R, Athiraman U, Wu CY, Bergese SD, Ramesh VJ.. J Neurosurg Anesthesiol. 2019 Feb 11. doi: 10.1097/ANA.0000000000000580. [Epub ahead of print] PMID: 30893282
- 17. Perceived Benefits and Barriers to a Career in Neuroanesthesiology: A Pilot Survey of Anesthesiology Clinicians.** **Rajan S**, Theard MA, Easdown J, Goyal K, Pasternak JJ, J Neurosurg Anesthesiol. 2019 Nov 6. doi: 10.1097/ANA.0000000000000655. [Epub ahead of print] PMID:31702586
- 18. Multimodal Analgesic Regimen for Spine Surgery: A Randomized Placebo-controlled Trial.** Maheshwari K, Avitsian R, Sessler DI, Makarova N, Tanios M, Raza S, Traul D, **Rajan S**, Manlapaz M, Machado S, Krishnaney A, Machado A, Rosenquist

R, Kurz A. Anesthesiology. 2020 May;132(5):992-1002. doi:
10.1097/ALN.0000000000003143. PMID:32235144

19. **Opioid alternatives in spine surgery- a narrative review-** Journal of Neurosurgical Anesthesiology(JNA) 2020. **Rajan S** et al.
20. **The Impact of SARS-CoV-2 (COVID-19) on Neuroanesthesiology Fellowship Programs and the Role of ICPNT Accreditation Globally** – Accepted for publication, Journal of Neurosurgical Anesthesiology. **Rajan S et al**
21. **"Chronic use of angiotensin converting enzyme inhibitors and/or angiotensin receptor blockers is not associated with reduced risk of stroke after noncardiac surgery: a case-control analysis"**. Accepted for publication. JNA; **Rajan S et al.**
22. **"Association between Preoperative Statin Use and Respiratory Complications After Non-cardiac Surgery: A Retrospective Cohort Analysis"** in the process of being accepted for publication in JNA 2021..
23. **Standardization of education in neuroanesthesia – need of the hour and way forward** – Accepted for publication in “ **Current anesthesiology reports**”.

Letter to the Editor – All Peer Reviewed

24. **Awake on Twitter-** Journal of Neurosurgical Anesthesiology; 2021
25. **Oculocardiac reflex--peribulbar block or opioid-relaxant anesthesia.** Grover VK, Bhardwaj N, **Shobana N**, Grewal SP. Can J Anesth. 1998 Jul; 45(7):706. (Letter to the Editor)
26. **The LMA in intracranial aneurysm surgery.** Agarwal A, **Rajan S**.. Can J Anesth. 1995 Dec; 42(12):1176-7. Letter to the Editor.
27. **LMA in neurosurgery.** Agarwal A, **Shobana N**. Can J Anaesth. 1995 Aug; 42(8):750. (Letter to the Editor)

NON-PEER REVIEWED PUBLICATIONS

- Impact of the COVID Pandemic on Neuroanesthesia Fellowship Programs: A Global Survey- Summer Newsletter 2020; Shobana Rajan, Val Luoma, Girija Rath
- The SNACC Neuroanesthesia Quiz Team- A Quizzical Force-Summer Newsletter 2020; Shobana Rajan, Suneeta Gollapudy, Verghese Cherian, Angele Theard, Hui Yang.
- ICPNT Continues to Add Accredited Programs to the Worldwide Network of Neuroanesthesia Fellowships; Winter newsletter 2019 Shobana Rajan
- Challenging Case: Anesthesia for Awake Craniotomy in an Intraoperative MRI Suite: Clinical Decision-Making and Dilemmas; SNACC Winter newsletter. Deepali Garg*, MD; Sonal Patel, MD; Shobana Rajan, MD
- Awake Craniotomy for an Arterio-venous Malformation in the Eloquent Area - Clinical Decision Making and Dilemmas. Kevin Piepsney, MD, Rabia Gill, MD, Shobana Rajan, MD. SNACC FALL NEWSLETTER
- Pregnancy Complicated By a Symptomatic Posterior Fossa Arteriovenous Malformation – Clinical Decision Making and Dilemmas: A Case Report. SNACC FALL NEWSLETTER. Shobana Rajan, MD; Christopher J. Yontz, DO; Gargi Banerjee, MD; and Karen Steckner, MD, SNACC News letter, Spring edition, 2018.
- Clinical dilemmas in a patient with heparin allergy in the neurointerventional suite. SNACC newsletter- winter edition 2017
- Neuroanesthesia fellowships from the perspective of trainees SNACC newsletter- Summer edition-2013
- Neuromonitoring case- seizures in awake craniotomy- education corner: SNACC newsletter; Winter 2014.

BOOK EDITOR

1. Anesthesia- Problem based learning approach

Edited by Tracy Straker and Shobana Rajan
Oxford University Press 2019

2. Neuroanesthesia – Problem Based learning approach

Edited by Hemanshu Prabhakar, Shobana Rajan, Indu Kapoor

BOOK Chapters

1. **Essentials of pediatric neuroanesthesia;** (Oxford university press). April 2018;
Anesthesia for functional neurosurgery - Shobana Rajan, Sanchit Ahuja.
2. **Ellenbogen; Principles of Neurological surgery**, 4th ed. Elsevier publications.
December 2017. *Neuro anesthesia and monitoring for cranial and complex spine surgery*. Shobana Rajan, Deepak Sharma
3. **Essentials of neuroanesthesia and neurointensive care;** Elsevier publications. June 2017. *Hypoxic ischemic encephalopathy* - Shobana Rajan, Sanchit Ahuja -.
4. **Essentials of neuroanesthesia;** Elsevier publications. April 2017.
Fluids and blood transfusion in pediatrics - Shobana Rajan, Shilpa Rao; -
5. **Complications in neuroanesthesia;** Elsevier publications. 2016
Chapter -*The difficult pediatric airway*. Shobana Rajan, Melissa Ehlers, Laura Leduc
6. **Co-existing diseases and Neuroanesthesia.** Springers publications 2018
Chapter - *Anesthesia in a patient with liver disease*. Shobana Rajan, Gargi Banerjee, Kevin Piepsney.
7. **Essential of Geriatric Neuroanesthesia** – Taylor and Francis publications. 2019
Chapter - *Parkinson's disease* ; Shobana Rajan, Adriana Martin.

PRESENTATIONS BY INVITATION

INTERNATIONAL

Upcoming Workshop on EEG monitoring January 2021

Workshop on processed EEG monitoring at World congress of Anesthesiology, Prague, 2021

Quiz master for SNACC, ISNACC since 2017- current.- Electronic quizzing in neuroanesthesiology.

- Cognitive aids for the diagnosis and Treatment of Neuroanesthetic Emergencies - Indian society of neuroanesthesiology and critical care annual meeting (ISNACC) 2020 January
- Extracranial-intracranial bypass procedures - Indian society of neuroanesthesiology and critical care annual meeting (ISNACC) 2019 January
- Awake Craniotomy with intraoperative MRI – AIIMS(All india Institute of Medical Sciences) Neuroanesthesia update, 2018 November
- Faculty at Workshop on Neuromonitoring, Cerebral oximetry, ISNACC Jan 2018, Mumbai, India
- Invited lectures in India ISNACC Feb 2017-
 - a. Anesthesia for Deep brain stimulation for Parkinson’s disease
 - b. Brain tissue oxygen tension monitoring

NATIONAL

- IARS meeting 2018, May, Chicago, Hosted Dine around meeting, Adverse Neurologic effects of surgery and anesthesia.
- Faculty presenter at the SNACC (society of neurosciences in anesthesiology and critical care) Annual meeting 2017/2018/2019 - Neuroanesthesia review fun- Interactive quiz session.
- SNACC Annual meeting 2019 – workshop organizer - Neuroanesthesia Essential skills bootcamp
- SNACC annual meeting 2019 – Workshop organizer- Taking the mystery out of curriculum development- the six steps
- **LOCAL**
- Anesthesia for MRI procedures- Comprehensive anesthesia review course-Cleveland clinic 2017 March
- Regional anesthesia for the airway- Comprehensive anesthesia review- Cleveland clinic 2017 March

- Anesthesia for neuromuscular disorders- Comprehensive anesthesia review - Cleveland clinic 2017 March
- Moderated session on " Anesthesia and co-existing diseases"- Comprehensive anesthesia review- Cleveland clinic 2017 March
- Comprehensive anesthesia review 2018- Board review session presenter. Cleveland Clinic, March 2018
- Pathophysiology of Respiratory failure; Talk in CME on Mechanical Ventilation, 2003, June, Chennai India
- Moderation of Seminar on Labor analgesia in CME-RACE(Ramachandra anesthesia continuing education) 2000, Chennai, India
- Labor Analgesia-Trials, Tribulations, triumphs, at the 4th South Asian Congress of Anesthesiology at Chennai, India in 1999.
- Optimal Tidal volume: Indian society of Anesthetists, UP Chapter, India, 1995.

PRESENTATIONS BY COMPETITION & PEER REVIEW

- Clinical conundrums in Neuroanesthesia ASA 2020- Moderator of snap talk panel
- Prioritizing neurosurgical workflow during the covid pandemic in two academic centers- Yale New Haven hospital and Allegheny health Network. Shilpa Rao, Maxwell Laurens, Charles Matouk, Shobana Rajan, Adam Yuan. SNACC 2020, SNACC_APSF award winning abstract.
- Curing structural racism to make room for Diversity in medicine-Society for education in anesthesiology meeting 2019, Denver Colorado - workshop
- ASA(American Society of Anesthesiology) meeting, 2018, San Francisco, Panel on Crisis management in neuroanesthesia, Tips and tricks to enhance patient safety.
- IARS meeting 2017, 2018 AND 2019
PBLD Anesthesia for acute stroke- Updates in management
- SEA meeting, Louisville, April 2018, Learning management systems, Workshop leader.
- SEA meeting, Louisville, April 2018, Poster "A survey on attitudes regarding neuroanesthesia fellowship amongst attending anesthesiologists, fellows and residents"

- Dexmedetomidine for post-craniotomy pain, Experts audio corner, SNACC education, Feb 2018, <http://www.snacc.org/experts-audio/>
- PBLD – Enhanced recovery pathways for spine surgery, , ISNACC Jan 2018, Mumbai, India
- A survey on attitudes regarding neuroanesthesia fellowship amongst attending anesthesiologists, fellows and residents. SNACC, Boston October, 2017
- PBLD- ASA, Boston October 2017- Anesthesia for spine surgery- Emerging trends and enhanced recovery pathways.
- PBLD session in IARS 2017- D.C- Anesthesia for stroke- considerations and controversies.
- Fair use of copyright- Workshop at SEA, spring 2017 - workshop facilitator.
- Interactive neuroanesthesia curriculum through a learning platform – SEA poster presentation spring 2017.
- Just another spine surgery; but my patient is on chronic pain medications- Enhanced recovery pathways- A paradigm shift. ASA 2016.
- Survey of strategies used for neuromonitoring and neuroprotection in an academic center. SNACC 2016 Poster
- Neuromonitoring and identification of potential peripheral nerve injury caused by positioning- SNACC- 2015
- Congenital and acquired cervical spine disorders in pediatric patients producing a difficult airway- mentor for resident presentation- SNACC 2015
- Anesthesia for Von Hippel Lindau disease- SNACC 2015
- Comparison of intraoperative albumin + crystalloid versus crystalloid alone on postoperative complications after Non cardiac surgery- oral presentation- ASA 2015.
- Dexmedetomidine provides better PACU hemodynamic control and reduces PACU analgesic requirements than remifentanyl in intracranial tumor excision- a randomized control trial-SNACC and ASA 2014
- Perioperative factors predicting acute kidney injury after partial nephrectomy. ASA 2014.
- Retrograde aortic dissection in thoracic aortic aneurysm repair- MARC 2014.

- Simulation for education in neuroanesthesia-Poster presentation-2013 SNACC
- An overenthusiastic pacemaker- Poster presentation- Ohio state of anesthesiology conference 2012 and ASA 2012.
- Factors predicting intraoperative hypertension during deep brain stimulation In Parkinson's disease- 2012 SNACC & ASA
- Dexmedetomidine for awake craniotomy-A comparison with general anesthesia for supratentorial tumors- SNACC & ASA 2011
- Poster-Awake versus Asleep Craniotomy for Brain tumors- Presentation at Society of Neurosurgical Anesthesiology-2010
- Dexmedetomidine for awake craniotomy-A comparison with general anesthesia for supratentorial tumors- Ohio State of anesthesiology conference 2010.
- Podium presentation- Awake Craniotomy-An analysis of intraoperative management- Midwest anesthesia residents conference- 3rd prize-Midwest anesthesia resident's conference-2010
- Oculocardiac reflex; poster presentation; Conference of the Indian Society of anesthesiologists; Bangalore, India, 1993.

MENTEES

- Arun George- - CA-2 resident, Allegheny health Network, SNACC 2020 Comparison of non-invasive versus invasive arterial line monitoring on outcomes in stroke patients undergoing endovascular therapy.
- Shivani Varshney -Anesthesia for carotid endarterectomy- Do we need a wider perspective-,
- Ahmad Shoubaki, CA-2 resident, Allegheny health Network, SNACC 2020; Difficult intubation in the interventional radiology suite
- Rachel Diehl- CA-2 Resident, Cleveland Clinic, First prize MARC, Chicago, April 2018- Case presentation, LVAD patient for Bariatric surgery.
- Krysten Rothstein – CA-2 Resident, Cleveland Clinic, Third Prize MARC Chicago, April 2018 - Pregnancy with AVM in the brain

- Sanchit Ahuja M.D- Outcomes research fellow- mentor for his presentation, Preoperative ACE inhibitors and perioperative stroke prevention (Retrospective Study) ; SNACC 2017; ASA 2019 oral presentation
- Wael Saassouh- Mentor for his presentation on Awake craniotomy in the IMRIS suite- IARS 2017
- Rachel Diehl - Anesthesia for bariatric surgery in a patient with LVAD- ASA 2017- poster- Rachel Diehl, Shobana Rajan
- Adriana Martin – CA-2 Resident Cleveland Clinic- Book chapter- Parkinson’s Disease and Anesthesia – Essentials of Geriatric Neuroanesthesia.
- Adriana Martin - CA-2 Resident Cleveland Clinic – Bibliography – Enhanced Recovery Pathways – SNACC website Annual Contribution
- Adriana Martin CA-2 resident- Blood Conservation strategies in a patient undergoing Cerebellar Hemangioblastoma; Clinical Decision making and Dilemmas.
- Sanchit Ahuja – Bibliography – Hypoxic Ischemic Encephalopathy - SNACC website Annual Contribution.
- Vibha Mahendra – CA- 2 resident, Baylor College of Medicine-Manuscript on Cognitive Aids for the Diagnosis and Treatment of Neuroanesthetic Emergencies: Consensus Guidelines on Behalf of the Society for Neuroscience in Anesthesiology and Critical Care (SNACC) Education Committee(2019) – published in Journal of Neuroanesthesiology and Critical care.
- Gargi Banerjee – Intern, University of Washington, Seattle – Book Chapter- Neuroanesthesia and Liver Disease, Book on “ Coexisting Diseases and neuroanesthesia”.
- Gargi Banerjee- Case of Heparin Allergy in a Neurointerventional Procedure- SNACC Newsletter – Winter 2017
- Deepali Garg- Neuroanesthesia fellow –
- 1 Hepatotoxicity after Sevoflurane Anesthesia – A new twist to an old Tale- Case report- BJA 2019,
- 2 Project – Anesthesia for intraoperative MRI procedures.. Ongoing retrospective study
- 3 Anesthesia for awake craniotomy in an Intraoperative MRI suite- Challenging case- SNACC newsletter

- Sonal Patel – Neuroanesthesia Fellow - Anesthesia in a patient with malignant hyperthermia for Awake Craniotomy – Clinical Decision making and Dilemmas. SNACC Newsletter Spring 2019.
- Kevin Piepsney – CA- 2 resident - Awake Craniotomy for an Arterio-venous Malformation in the Eloquent Area – Challenging Case- SNACC newsletter Fall 2018
- Christopher Yontz- Pregnancy complicated by a symptomatic Arteriovenous Malformation- Clinical Decision making and Dilemmas- Challenging Case- SNACC newsletter- spring 2018.
- Jazelle Mealing, M.D- Mentor for presentation in the SNACC meeting 2015 -Resident in anesthesiology, Albany medical center, New York- CA-2 year
- Mentor for high school students - Padua high school; Medtrack program- Parma- Ohio