
BIOGRAPHICAL

Name: Neal Shah
Home Address: 700 Easton Lane, Elk Grove Village, IL 60007
Cell Phone: (847) 312 - 9191
Email: nshah2407@gmail.com

EDUCATION and TRAINING

UNDERGRADUATE

Saint Louis University, St. Louis, MO

Bachelor of Science in Investigative Medical Science

August 2009 – May 2013

Minors: Biology and Health Management

Honors: Summa Cum Laude

GRADUATE

Saint Louis University School of Medicine, St. Louis, MO

Doctor of Medicine

August 2013 – May 2017

POSTGRADUATE

University of Pittsburgh Medical Center, Pittsburgh, PA

Anesthesiology Residency

June 2017 – June 2021

Rush University Medical Center, Chicago, IL

Fellow Physician

July 2021 – June 2022

ACADEMIC APPOINTMENTS

University of Pittsburgh Medical Center, Pittsburgh, PA

Resident Physician

June 2017 – June 2021

Rush University Medical Center, Chicago, IL

Fellow Physician

July 2021 – June 2022

EMPLOYMENT

Orthoillinois

Interventional Pain Physician

August 2022 – Present

CERTIFICATION and LICENSURE

SPECIALTY CERTIFICATION:

American Board of Anesthesiology

May 15, 2022 – December 31, 2032

American Board of Anesthesiology – Pain Medicine

Board Eligible

MEDICAL or OTHER PROFESSIONAL LICENSURE:

State Board of Medicine (Graduate Training License), Pennsylvania

June 2017 – June 2021

State Board of Medicine (Permanent Medical License), Illinois

March 2017 – Present

LEADERSHIP

Indian Student Association at Saint Louis University, St. Louis, MO

Class Representative, Secretary, Treasurer, Vice-President

August 2009 – May 2013

- Served as an executive board member for all four years and worked closely with other student

leaders to teach students about Indian culture on campus through cultural events.

- Hosted multiple cultural events each year including a charity concert with local area acapella groups and Penn Masala, a nationally recognized Indian American acapella group.
- Raised \$10,000 for an annual charity (Manav Sadhna) linked to the organization.

Big Brothers Big Sisters of St. Louis, St. Louis, MO

Student Mentor

August 2009 – May 2010

- Served as a mentor to third graders through an after-school program by assisting students with homework and involving them in numerous physical education exercises.

Project LEAN for YWCA, St. Louis, MO

Project Developer

March 2010 – March 2011

- Collaborated with other students to develop a program to educate women who are transitioning between jobs or housing about health and wellness.
- The program consisted of a multiple week approach to show the women how they can live a healthy life on a budget and how they can improve their outlook on life.

Organization of Student Representatives (OSR) at Saint Louis University School of Medicine, St. Louis, MO

Primary OSR Delegate at Saint Louis University School of Medicine

October 2013 – May 2017

- Worked with three other student representatives to communicate the opinions of the student body to national representatives and implemented OSR national priorities and objectives at SLU School of Medicine.
- Major projects developed and implemented included a student health and wellness initiative and the introduction of a Business in Medicine elective for students.

Business in Medicine Interest Group, St. Louis, MO

Interest Group Leader

April 2014 – April 2015

- Worked with two other students to organize guest lectures on topics related to private practice, hospital management, and business education in medical school.

Anesthesiology Interest Group, St. Louis, MO

Interest Group Leader

April 2014 – April 2015

- Promoted the specialty of anesthesiology to medical students by hosting guest anesthesiology attendings that spoke about the profession.
- Planned and led simulation activities such as airway management and intravenous line access.

American Medical Student Association, St. Louis, MO

President

April 2014 – April 2015

- Collaborated with the executive board to plan and host events in line with AMSA national guidelines and priorities including a M1-M2 mentorship program.

Billiken Angels Network (BAN), St. Louis, MO

Fellow

September 2014 – May 2017

- Provided input to Billiken Angel Investors on potential investments with a focus on those that were related to the healthcare industry.
- Served to evaluate the necessity of a product or service that was being presented by the entrepreneurs by performing due diligence with a group of BAN Fellows.

Student Financial Services Advisory Board, St. Louis, MO

Class of 2017 Student Representative and Board Member

October 2014 – May 2017

- Worked with other students and the Financial Aid Office staff to provide students with more information about financial planning and loan repayment programs.
- Increased awareness to the staff about the cost of medical education due to test preparation materials and the residency interview process.

Organization of Student Representatives (OSR) - AAMC Group on Student Affairs-Committee on Student Financial Assistance (GSA-COFSA), Washington D.C., USA

OSR Liaison

April 2015 – May 2017

- Worked closely with the national administrative board through the AAMC as the sole student OSR liaison to the committee.
- Provided the committee with a medical student's perspective on financial aid issues and participated in discussions regarding national legislation involving student aid.
- Briefed all delegates and students nationally on changes occurring with financial aid and tools available to educate themselves on loan repayment options and financial literacy via newsletters and articles.

Student Professional Conduct Council of Saint Louis University School of Medicine, St. Louis, MO

Medical Student Advisor

July 2015 – May 2017

- Specially appointed by Dean Philip O. Alderson, M.D. of Saint Louis University School of Medicine.
- Attended hearings on professional conduct cases between students and faculty at Saint Louis University School of Medicine and investigated violations of the Code of Professional conduct.
- Worked with committee members to impose sanctions or remediation in cases where a violation has occurred.

American Society of Anesthesiologists (ASA) Medical Student Component House of Delegates, St. Louis, MO

Saint Louis University School of Medicine Delegate

July 2016 – May 2017

- Served as a medical student liaison between ASA Medical Student Component and Saint Louis University.
- Maintained contact with the Anesthesiology Interest Group and recruited interested members to join American Society of Anesthesiology.
- Represented Saint Louis University within the Medical Student Component and attended House of Delegates Annual Meeting at the fall national meeting.

Leadership in Education and Patient Safety (LEAPS), subcommittee of the UPMC Medical Education, Graduate Medical Education Committee (GMEC), Pittsburgh, PA

Peer-Selected Resident Member

October 2017 – June 2021

- Collaborated with colleagues across all specialties to perform root cause analysis on adverse events that occurred within the hospital.
- Developed and implemented quality improvement on patient safety initiatives.
- Key initiatives thus far include central line removal safety and reduction in drug administration errors.

Pennsylvania Society of Anesthesiologists, Harrisburg, PA

President of Resident Component

October 2018 – October 2020

- Represented anesthesiology residents from across the state and gave recommendations on legislation and other issues that affect the practice of anesthesiology in Pennsylvania.

- Attended the Resident House of Delegates meeting at the fall national meeting and discussed all legislative issues affecting residents nationally.
- Major initiatives included encouraging residents to participate in the Lifebox challenge all residency programs in Pennsylvania and increasing awareness and attendance at resident organized events across the state.

Anesthesiology Residency Program, Pittsburgh, PA

Junior Chief of Advocacy

June 2019 – June 2020

- Promoted resident involvement in professional societies and physician advocacy conferences, events and activities.
- Engaged residents on active political issues and coordinated resident efforts in communicating with local, state, and national government officials.
- Hosted annual charity events to support key issues affecting anesthesiology and medicine.
- Organized Opioid Epidemic Awareness Fundraiser. Obtained multidisciplinary support from Pennsylvania Society of Anesthesiologists (PSA), Pennsylvania Association of Nurse Anesthetists (PANA), UPMC Health Network, Graduate Nursing Student Organization. Raised \$26,000 for Light of Life Rescue Mission, a nonprofit organization that provides resources to homeless individuals suffering from opioid addiction in Pittsburgh PA.

COVID-19 Clinical Decision Team, Pittsburgh, PA

Resident Representative

March 2020 – July 2020

- Worked with Department of Anesthesiology leadership to develop protocols and guidelines to manage COVID-19 patients and ensure safety of anesthesiologists.

Anesthesiology Residency Program, Pittsburgh, PA

Chief Resident

July 2020 – June 2021

- Worked with two associate chief residents to serve as a liaison between residents and administration.
- Ensured that all ACGME and educational activities are optimized and effective.
- Coordinated scheduling of anesthesiology interns, off-service residents, and medical students during their OR Anesthesiology rotation.
- Collaborated with junior chiefs to implement various educational goals to improve resident learning.
- Attended workshops and teaching sessions for medical students at University of Pittsburgh.
- Served as a peer that discussed resident issues with program administration and advocated on their behalf.
- Represented residents at the monthly OR Clinical Competency Committee where issues of OR efficiency and staffing are discussed.

North American Neuromodulation Society, Las Vegas, NV

Co-Chair of Residents and Fellows Section (RFS)

March 2021 – Present

- Worked alongside appointed legacy Co-Chair to ensure the seamless continuation of RFS mission.
- Assisted in membership recruitment and retention, organizing feedback and recommendations from residents and fellows on national level to assist NANS in executing its educational and outreach.
- Organized creation of visual abstract series to highlight notable publications in neuromodulation.

MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES

American Medical Student Association
American Medical Association

August 2013 – May 2017
August 2013 – May 2017

Missouri State Medical Association	August 2013 – May 2017
American Society of Anesthesiologists	November 2015 – Present
Pennsylvania Society of Anesthesiologists	June 2017 – June 2021
American Society of Regional Anesthesia and Pain Medicine	January 2019 – Present
American Academy of Pain Medicine	November 2019 – Present
North American Neuromodulation Society	March 2021 – Present

HONORS

Dean's List, <i>St. Louis University</i>	August 2009 – May 2013
Summa Cum Laude, <i>St. Louis University</i>	May 2013
Rodney Coe Distinction in Community Service, <i>St. Louis University</i>	January 2014 – May 2017

PUBLICATIONS

Schmitz P, **Shah N** (Ed.) Proximal Tubule. Clinical Implications of Renal Physiology (pp. 113-139). 2016. St. Louis: Learning Innovations, LLC.

Da Fonseca M, Patrick J, Kaste L M, Fadavi S, **Shah N**, Sroussi H. Oral Health-related Quality of Life in Pediatric Patients with Cystic Fibrosis. *Special Care in Dentistry*. July 2016. PMID: 26763465.

Shah N. Advocacy is Paramount to Our Field. *Pennsylvania Society of Anesthesiologists Sentinel*. 05/15/2019.

Shah N, Archie C, Pribonic P. PA's Opioid Epidemic: What is our role as anesthesiologists?. *Pennsylvania Society of Anesthesiologists Sentinel*. 1/15/2020.

Shah N, Engle A, Raggi E, Alter B A, Emerick T D. Pulsed Radiofrequency Ablation: An Alternative Treatment Modality for Radiation Induced Brachial Plexopathy. *Pain Medicine*, pnaa382. 11/8/2020. <https://doi.org/10.1093/pm/pnaa382>

Shah N K, Emerick T D. Lean Six Sigma Methodology and the Future of Quality Improvement Education in Anesthesiology. *Anesthesia & Analgesia*. 6/17/2021. - Volume Publish Ahead of Print - Issue - 10.1213/ANE.0000000000005636 doi: 10.1213/ANE.0000000000005636

POSTER and ORAL PRESENTATIONS

Kristin Pacl, **Neal Shah**, Brandon T. Beal, Stuart J. Slavin, Debra Schindler. Arching Mind Over Matter: An Integrated Approach to Improving Student Well-Being at Saint Louis University School of Medicine. Presented at Association of American Medical Colleges (AAMC) National Meeting Learn, Serve, Lead; Chicago, IL. 11/09/2014.

Adam Thompson-Harvey, **Neal Shah**, Kristin Pacl, Clare Brady. Community Impact of Improved Mental Health of Medical Students: Highlighting Three Student Led Innovations at Saint Louis University School of Medicine. Presented at Association of American Medical Colleges (AAMC) National Meeting Learn, Serve, Lead; Baltimore, MD. 11/6/2015.

Clare Brady, **Neal Shah**, Adam Thompson-Harvey, Kristin Pacl, Kamal Gursahani. Improving Medical Student Knowledge at St. Louis University. Presented at Association of American Medical Colleges (AAMC) National Meeting Learn, Serve, Lead; St. Louis, MO. 06/23/2016.

Clare Brady, Adam Thompson-Harvey, **Neal Shah**, Stuart J Slavin. Reducing Depression and Anxiety Rates in Second Year Medical Students at St. Louis University. Presented at: Association of American Medical Colleges (AAMC) National Meeting Learn, Serve, Lead; Seattle, WA. 11/11/2016.

Neal Shah MD, Trent D. Emerick MD, MBA. Using an Anesthesiology Trained Chronic Pain Physician for Perioperative Inpatient and Outpatient Pain Management as Part of the Perioperative Surgical Home. Presented at American Society of Anesthesiologists (ASA) Practice Management 2018; New Orleans, LA. 01/26/2018.

Neal Shah MD, Jamie Artman CRNA, MSN, Sanford M. Littwin, MD, Mark E. Hudson MD, MBA. Utilizing a “Value” Incentive to Rapidly Introduce Evidence Based Practice Across a Large Multihospital Health Care System. Presented at American Society of Anesthesiologists (ASA) Practice Management 2018; New Orleans, LA. 01/26/2018.

Neal Shah MD, Jamie Artman CRNA, MSN, Sanford M. Littwin, MD, Mark E. Hudson MD, MBA. Utilizing a “Value” Incentive to Rapidly Introduce Evidence Based Practice Across a Large Multihospital Health Care System. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Philadelphia, PA. 05/19/2018.

Neal Shah MD, Trent D. Emerick MD, MBA. Using an Anesthesiology Trained Chronic Pain Physician for Perioperative Inpatient and Outpatient Pain Management as Part of the Perioperative Surgical Home. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Philadelphia, PA. 05/19/2018.

Neal Shah MD, Trent D. Emerick MD, MBA. Using an Anesthesiology Trained Chronic Pain Physician for Perioperative Inpatient and Outpatient Pain Management as Part of the Perioperative Surgical Home. Presented at: Safar Symposium at University of Pittsburgh Medical Center; Pittsburgh, PA. 05/31/2018.

Evan E. Lebovitz MD; **Neal Shah MD**; Sanford M. Littwin MD; Mark E. Hudson MD, MBA. Comparison of Clinical Productivity Metrics Between Anesthesiology Divisions Within a Large Academic Medical Center. Presented at American Society of Anesthesiologists (ASA) Annual National Meeting 2018; San Francisco, CA. 10/13/2018.

Neal Shah MD, Sara Straesser MD, Sanford M. Littwin MD, MBA. Effects on Operating Room Costs due to Inefficient Scheduling. Presented at American Society of Anesthesiologists (ASA) Practice Management 2019; Las Vegas, NV. 01/18/2019.

Neal Shah MD, Evan E. Lebovitz MD, Jamie Artman CRNA, MSN, Sanford M. Littwin MD, MBA, Mark E. Hudson MD, MBA. Riding the Winds of Change: Evolution of an Anesthesiology Value Metrics Incentive Program within a Large Academic Medical System. Presented at American Society of Anesthesiologists (ASA) Practice Management 2019; Las Vegas, NV. 01/18/2019.

Samuel Goldstein MD, **Neal Shah MD**, Evan E. Lebovitz MD, Sanford M. Littwin MD, MBA, Mark E. Hudson MD, MBA. Seasonal Variation in Operating Room Costs. Presented at American Society of Anesthesiologists (ASA) Practice Management 2019; Las Vegas, NV. 01/19/2019.

Neal Shah MD, Susan E. Jarquin PhD, Andrea G. Gillman PhD, Ajay D. Wasan MD, MSc, Trent D. Emerick MD, MBA. Developing the Department of Anesthesiology as a Cost-Savings Leader through a Smoking Cessation Program in an Outpatient Chronic Pain Clinic. Presented at American Society of Anesthesiologists (ASA) Practice Management 2019; Las Vegas, NV. 01/19/2019.

Evan E. Lebovitz MD, **Neal Shah MD** Jamie Artman CRNA, MSN, Sanford M. Littwin MD, Mark E. Hudson MD, MBA. Cost Effectiveness Analysis of Sugammadex Compared to Neostigmine for Reversal of Rocuronium-Induced Neuromuscular Blockade in a Large, Multi-Hospital Healthcare System. Presented at American Society of Anesthesiologists (ASA) Practice Management 2019; Las Vegas, NV. 01/19/2019.

Aamir Zariwala MD, Evan E. Lebovitz MD, **Neal Shah MD**, Sanford Littwin MD MBA, Mark Hudson, MD MBA. Variations in Costs Per Operating Room Hours Between Hospitals and Ambulatory Surgical Centers. Presented at American Society of Anesthesiologists (ASA) Practice Management 2019; Las Vegas, NV. 01/19/2019.

Neal Shah MD, Laura Nelson, James W. Ibinson MD, PhD, Steven L. Orebaugh MD. Retrospective Evaluation of Interscalene Nerve Block Efficacy in Patients with Chronic Opioid Use. Presented at American Society of Regional Anesthesia and Pain Medicine (ASRA) Spring 2019; Las Vegas, NV. 04/11/2019.

Neal Shah MD, Jennifer Andersen MD, Jacques E. Chelly MD, Ph.D., MBA. All Ears: Auriculotherapy as a Nonpharmacologic Method of Post-Operative Pain Control. Presented at American Society of Regional Anesthesia and Pain Medicine (ASRA) Spring 2019; Las Vegas, NV. 04/13/2019.

Neal Shah MD, Laura Nelson, James W. Ibinson, MD, PhD, Steven L. Orebaugh, MD. Retrospective Evaluation of Interscalene Nerve Block Efficacy in Patients with Chronic Opioid Use. Presented at: Safar Symposium at University of Pittsburgh Medical Center; Pittsburgh, PA. 04/22/2019.

Neal Shah MD, Sara Straesser MD, Sanford M. Littwin MD, MBA. Effects on Operating Room Costs due to Inefficient Scheduling. Presented at: Safar Symposium at University of Pittsburgh Medical Center; Pittsburgh, PA. 04/22/2019.

Neal Shah MD, Evan E. Lebovitz MD, Jamie Artman CRNA, MSN, Sanford M. Littwin, MD, MBA, Mark E. Hudson MD, MBA. Riding the Winds of Change: Evolution of an Anesthesiology Value Metrics Incentive Program within a Large Academic Medical System. Presented at: Safar Symposium at University of Pittsburgh Medical Center; Pittsburgh, PA. 04/22/2019.

Neal Shah MD, Susan E. Jarquin PhD, Andrea G. Gillman PhD, Ajay D. Wasan MD, MSc, Trent D. Emerick MD, MBA. Developing the Department of Anesthesiology as a Cost-Savings Leader through a Smoking Cessation Program in an Outpatient Chronic Pain Clinic. Presented at: Safar Symposium at University of Pittsburgh Medical Center; Pittsburgh, PA. 04/22/2019.

Samuel Goldstein MD, **Neal Shah MD**, Evan E. Lebovitz MD, Sanford M. Littwin MD, MBA, Mark E. Hudson MD, MBA. Seasonal Variation in Operating Room Costs. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Pittsburgh, PA. 05/04/2019.

Neal Shah MD, Evan E. Lebovitz, MD, Jamie Artman, CRNA, MSN, Sanford M. Littwin, MD, Mark E. Hudson, MD, MBA. Riding the Winds of Change: Evolution of an Anesthesiology Value Metrics Incentive Program within a Large Academic Medical System. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Pittsburgh, PA. 05/04/2019.

Evan E. Lebovitz, MD, **Neal Shah MD**, Jamie Artman, CRNA, MSN, Sanford M. Littwin, MD, Mark E. Hudson, MD, MBA. Cost Effectiveness Analysis of Sugammadex Compared to Neostigmine for Reversal of Rocuronium-Induced Neuromuscular Blockade in a Large, Multi-Hospital Healthcare System. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Pittsburgh, PA. 05/04/2019.

Aamir Zariwala MD, Evan E. Lebovitz MD, **Neal Shah MD**, Sanford Littwin MD MBA, Mark Hudson, MD MBA. Variations in Costs Per Operating Room Hours Between Hospitals and Ambulatory Surgical Centers. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Pittsburgh, PA. 05/04/2019.

Evan E. Lebovitz, MD, **Neal Shah MD**, Jamie Artman, CRNA, MSN, Sanford M. Littwin, MD, Mark E. Hudson, MD, MBA. Cost Effectiveness Analysis of Sugammadex Compared to Neostigmine for Reversal of Rocuronium-Induced Neuromuscular Blockade in a Large, Multi-Hospital Healthcare System. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2019; Orlando, FL. 10/19/2019.

Neal Shah MD, Peter T. Ritchie. Acute Management and Workup of Anaphylaxis in the Operating Room. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2019; Orlando, FL. 10/20/2019.

Neal Shah MD, Susan E. Jarquin PhD, Andrea G. Gillman PhD, Ajay D. Wasan MD, MSc, Trent D. Emerick MD, MBA. Developing Anesthesiology as a Cost-Savings Leader through a Smoking Cessation Program in a Chronic Pain Clinic. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2019; Orlando, FL. 10/20/2019.

Neal Shah MD, Evan E. Lebovitz MD, Jamie Artman CRNA, MSN, Sanford M. Littwin MD, MBA, Mark E. Hudson MD, MBA. Evolution of an Anesthesiology Value Metrics Incentive Program and its Financial Impact in a Large Academic Healthcare System. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2019; Orlando, FL. 10/22/2019.

Neal Shah MD, Sara Straesser MD, Sanford M. Littwin MD MBA. Overlapping Surgery Scheduling Model and its Financial Implications for a Department of Anesthesiology. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2019; Orlando, FL. 10/22/2019.

Neal Shah MD, Eugene P. Raggi MD, Benedict Alter MD PhD, Trent D. Emerick MD MBA. Pulsed Radiofrequency Ablation: An Alternative Treatment Modality for Radiation Induced Brachial Plexopathy. Presented at: American Society of Regional Anesthesia and Pain Medicine (ASRA) Fall 2019; New Orleans, LA. 11/15/2019.

Neal Shah MD, Sheri Wang BS, Christian Molzahn MD, Evan E. Lebovitz MD, Mark E. Hudson MD MBA. Using Cost and Productivity Surveillance to Identify Variance in Surgical Services

Efficiencies Across a Large Multihospital Healthcare System. Presented at: American Society of Anesthesiologists (ASA) Practice Management 2020; Las Vegas, NV. 01/17/2020.

Neal Shah MD, Trent D. Emerick MD, MBA. Utilization of Lean Methodology and Six Sigma Methodology in an Academic Chronic Pain Practice. Presented at: American Society of Anesthesiologists (ASA) Practice Management 2020; Las Vegas, NV. 01/17/2020.

Sheri Wang BS, **Neal Shah MD**, Christian Molzahn MD, Evan E. Lebovitz MD, Mark E. Hudson MD MBA. Using Cost and Productivity Surveillance to Identify Unjustified Provider Underutilization Stemming from Gap Time and Delayed First Starts. Presented at: American Society of Anesthesiologists (ASA) Practice Management 2020; Las Vegas, NV. 01/17/2020.

Evan E. Lebovitz MD, Ryan Ball MD, **Neal Shah MD**, Mark E. Hudson MD MBA. Cost Analysis of Anesthesia Type Variation Between Hospitals within a Large Academic Medical Center. Presented at: American Society of Anesthesiologists (ASA) Practice Management 2020; Las Vegas, NV. 01/17/2020.

Neal Shah MD, Semerjit Bains MD, Ajay D. Wasan MD, MSc, Benedict Alter MD PhD. Real-world Outcomes of Genicular Nerve Radiofrequency Ablation for Chronic Knee Pain. Presented at: American Academy of Pain Medicine (AAPM) Annual Meeting 2020; National Harbor, MD. 2/27/2020.

Evan E. Lebovitz MD, Ryan Ball MD, **Neal Shah MD**, Mark E. Hudson MD MBA. Cost Analysis of Anesthesia Type Variation Between Hospitals within a Large Academic Medical Center. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2020; Washington DC, USA. 10/03/2020.

Neal Shah MD, Sheri Wang BS, Christian Molzahn MD, Evan E. Lebovitz MD, Mark E. Hudson MD MBA. Using Cost and Productivity Surveillance to Identify Variance in Surgical Services Efficiencies Across a Large Multihospital Healthcare System. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2020; Washington DC, USA. 10/03/2020.

Neal Shah MD, Trent D. Emerick MD, MBA. Utilization of Lean Methodology and Six Sigma Methodology in an Academic Chronic Pain Practice. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2020; Washington DC, USA. 10/03/2020.

Neal Shah MD, Ryan S Holden MD, Trent D. Emerick MD, MBA. Intrathecal Ziconotide: An Alternative Treatment for Chronic Migraine Headaches. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2020; Washington DC, USA. 10/03/2020.

Sheri Wang MD, **Neal Shah MD**, Christian Molzahn MD, Evan E. Lebovitz MD, Mark E. Hudson MD MBA. Using Cost and Productivity Surveillance to Identify Unjustified Provider Underutilization Stemming from Gap Time and Delayed First Starts. Presented at: American Society of Anesthesiologists (ASA) Annual National Meeting 2020; Washington DC, USA. 10/03/2020.

Sheri Wang MD, **Neal Shah MD**, Evan E. Lebovitz MD, Mark E. Hudson MD MBA. The Impact of COVID-19 Pandemic on Operating Room Utilization and Anesthesia Group Productivity in Academic Medical Centers, Community Hospitals, Pediatric Hospital, and Ambulatory Surgery

Centers. Presented at: American Society of Anesthesiologists (ASA) Practice Management Meeting 2021. 1/30/2021.

Wu Yin MD, MBA, Mackenzie Noonan MD, **Neal Shah MD**, Christopher McNulty MD, Steven L. Orebaugh MD. Retrospective Study of Association Between Anesthesia Type and Neurologic Outcomes with Hand and Wrist Nerve Trauma. Presented at: American Society of Regional Anesthesia and Pain Medicine (ASRA) Spring 2021; Orlando, FL. 05/15/2021.

Christopher A. McNulty MD, Maria Alejandra Hernandez MD, **Neal Shah MD**, Andrea Ibarra MD, Steven L. Orebaugh MD. Regional Anesthesia in Patients Undergoing Ulnar Nerve Transposition, Neurolysis, Decompression or Repair. Presented at: Pennsylvania Anesthesiology Resident Research Conference (PARRC); Philadelphia, PA (virtual). 05/22/2021.

Neal Shah MD, Timothy R. Lubenow MD. Novel Approach to Cervical Dorsal Root Ganglion Stimulation for CRPS of the Upper Extremity. Presented at: American Society of Regional Anesthesia and Pain Medicine (ASRA) Spring 2022, Las Vegas, NV. 04/01/2022.

AWARDS

FAER Resident Scholar Award for Best Resident Poster

Awarded 01/27/2018

- Received at American Society of Anesthesiologists (ASA) Practice Management 2018.
- Poster Title: Utilizing a "Value" Incentive to Rapidly Introduce Evidence Based Practice Across a Large Multihospital Health Care System.

3rd Place Poster Presentation

Awarded 01/27/2018

- Received at American Society of Anesthesiologists (ASA) Practice Management 2018.
- Poster Title: Utilizing a "Value" Incentive to Rapidly Introduce Evidence Based Practice Across a Large Multihospital Health Care System.

1st Place Original Research Oral Presentation

Awarded 05/19/2018

- Received at Pennsylvania Anesthesiology Resident Research Conference (PARRC).
- Poster Title: Utilizing a "Value" Incentive to Rapidly Introduce Evidence Based Practice Across a Large Multihospital Health Care System.

FAER Resident Scholar Award for Best Resident Poster

Awarded 01/19/2019

- Received at American Society of Anesthesiologists (ASA) Practice Management 2019.
- Poster Title: Riding the Winds of Change: Evolution of an Anesthesiology Value Metrics Incentive Program within a Large Academic Medical System.

2nd Place Poster Presentation

Awarded 01/19/2019

- Received at American Society of Anesthesiologists (ASA) Practice Management 2019.
- Poster Title: Riding the Winds of Change: Evolution of an Anesthesiology Value Metrics Incentive Program within a Large Academic Medical System.

Best Resident Scholar

Awarded 06/11/2021

- Received at UPMC Anesthesiology Graduation.
- Given to the resident with the highest volume of publications, poster presentations, oral

presentations and other scholarly work during residency.

Resident Excellence in Teaching

Awarded 06/11/2021

- Received at UPMC Anesthesiology Graduation.
- Given to the resident who exemplifies excellence in medical education within anesthesiology. Awarded by all residents within the Department of Anesthesiology and presented by Program Director and department leadership.

FORMAL PRESENTATIONS

Neal Shah MD, Daniel Huettner MD. Intraoperative Hypotension for LeFort Procedures. Presented at UPMC Mercy Hospital Morning Conference Series; Pittsburgh, PA. 08/22/2018.

Neal Shah MD, Andrew McNicol MD. Association of Left Ventricular Ejection Fraction and Symptoms with Mortality after Elective Noncardiac Surgery among Patients with Heart Failure. Presented at UPMC Department of Anesthesiology Grand Round Series; Pittsburgh, PA. 05/02/2019.

Neal Shah MD, Christopher McNulty MD. Heart Transplant: Lessons Learned about Reversing Anticoagulation. Presented at UPMC Presbyterian Hospital Morning Conference Series; Pittsburgh, PA. 10/30/2019.

Neal Shah MD. Perioperative Management of Patients taking Buprenorphine. Presented at UPMC Mercy Hospital Morning Conference Series; Pittsburgh, PA. 11/20/2019.

Neal Shah MD. Pyloric Stenosis and Anesthetic Implications. Presented at UPMC Children's Hospital Morning Conference Series; Pittsburgh, PA. 02/12/2020.

TEACHING

TAR Wars

Medical Student Presenter

October 2014 - May 2015

- Delivered presentations regarding smoking cessation to children at elementary schools in the St. Louis city area.

Child Abuse Prevention Program

Medical Student Presenter

October 2014 – May 2015

- Delivered presentations regarding child abuse prevention to children at elementary schools in the St. Louis metropolitan area.

HIV Task Force

Medical Student Presenter

August 2013 – May 2015

- Delivered presentations regarding HIV and Sexually Transmitted Diseases to children at Juvenile Detention Centers and the St. Louis County Jail.

Intravenous access course at WISER (Simulation Lab)

Resident Educator

March 2019

- Taught students how to properly obtain IV access and draw blood in a safe and sterile manner.

Introduction to Intern Year Boot Camp for 4th year medical students

Resident Educator

April 2019

- Discussed how to handle transition to residency, resiliency and tips to be a successful intern.

Leveraging Social Media for Professional Practice

Chief Resident

September 2020

- Discussed how to use social media effectively and responsibly within medicine. Lecture was part of Anesthesiology Professional Practice Lecture series.

Leadership and Professionalism during Anesthesiology Residency

Chief Resident

September 2020

- Discussed various leadership styles and opportunities available for residents within UPMC Department of Anesthesiology. Lecture was part of Anesthesiology Professional Practice Lecture series.

RESEARCH

Ann & Robert H. Lurie Children's Hospital, Chicago, IL

Research Assistant in Pulmonary and Critical Care

May 2014 – August 2014

Advisor: Dr. Susanna McColley, Division of Pulmonary Medicine

- Administered surveys to cystic fibrosis patients between the ages of 8 – 17 and their guardians to evaluate their perception of the child's own oral health and how cystic fibrosis may be contributing to their health maintenance. Helped evaluate research data in conjunction with Jonathan Patrick, DDS from the University of Illinois at Chicago.
- Performed a retrospective chart review analyzing mode of delivery and its effect on *Pseudomonas aeruginosa* among cystic fibrosis patients born after 2006.

University of Pittsburgh Medical Center, Pittsburgh, PA

Resident Physician

June 2017 – June 2021

Advisor: Dr. Nicholas Schott, Department of Anesthesiology

- **Neal Shah MD**, Alejandra Hernandez MD, Nicholas Schott MD, Charles Luke MD, MBA, Charles Lin MD, David S. Glover DO, Touichi Kawabe MD. *ESP versus PVB nerve blocks for Video Assisted Thoracoscopic Surgery (VATS)*. IRB Approved: Yes. 03/01/2019.

Advisor: Dr. Feyce Peralta, Department of Anesthesiology at Northwestern University, Dr. Grace Lim, Department of Anesthesiology

- Davin Singh MD, **Neal Shah MD**, Thomas R. Gruffi MD, Grace Lim MD MS, Feyce Peralta MD. *Anesthetic Management for Cesarean Delivery of Parturients with Ventriculoperitoneal Shunts: A Case Series*. IRB Approved: Yes.

Advisor: Dr. Steven Orebaugh, Department of Anesthesiology

- **Neal Shah MD**, Christopher McNulty MD, Steven L. Orebaugh MD. *Retrospective Study of Association of Anesthesia Type on Neurological Outcomes of Ulnar Nerve Transposition or Neurolysis*. IRB Approved: Yes. 08/28/2019.

CONFERENCES

American Society of Anesthesiologists (ASA) Annual Meeting

October 2017

American Society of Anesthesiologists (ASA) Practice Management

January 2018

American Society of Anesthesiologists (ASA) Legislative Conference

May 2018

Pennsylvania Anesthesiology Resident Research Conference (PARRC)

May 2018

Safar Symposium at University of Pittsburgh Medical Center	May 2018
American Society of Anesthesiologists (ASA) Annual National Meeting	October 2018
American Society of Anesthesiologists (ASA) Practice Management	January 2019
American Society of Regional Anesthesia and Pain Medicine (ASRA) Spring	April 2019
American Society of Anesthesiologists (ASA) Legislative Conference	May 2019
Safar Symposium at University of Pittsburgh Medical Center	May 2019
American Society of Anesthesiologists (ASA) Annual National Meeting	October 2019
American Society of Regional Anesthesia and Pain Medicine (ASRA) Fall	November 2019
American Society of Anesthesiologists (ASA) Practice Management	January 2020
American Academy of Pain Medicine (AAPM) Annual Meeting	February 2020
American Society of Anesthesiologists (ASA) Annual National Meeting	October 2020
American Society of Regional Anesthesia and Pain Medicine (ASRA) Spring	April 2022