



Curriculum Vitae
Robert Isaak, DO, D. ABA, FASA
(Revised: June 14, 2023)

Contact Information:

Address: N2198 UNC Hospitals, CB#7010, Chapel Hill, NC, 27599-7010
Phone: (919) 923-9216

Education:

Postgraduate Training:

July 2008 – June 2011	<i>Residency:</i> Vanderbilt University Medical Center, Nashville, TN – Anesthesiology
July 2007- June 2008	<i>Internship:</i> Vanderbilt University Medical Center, Nashville, TN

Degrees:

August 2003- May 2007	<i>Medical School:</i> Nova Southeastern University College of Osteopathic Medicine, Fort Lauderdale, FL; Doctor of Osteopathic Medicine
August 1999- May 2003	<i>Undergraduate College:</i> Vanderbilt University, Nashville, TN, Bachelor of Science in Molecular and Cellular Biology

Board Certifications:

January 2013	Basic Perioperative Transesophageal Echocardiography, National Board of Echocardiography
April 2012	Diplomate, American Board of Anesthesiology (D. ABA) Recertification – December 2022

Other Training and Certifications:

September 2019	American Society of Anesthesiologists Executive Physician Leadership Program
April 2018	Fellow of the American Society of Anesthesiologists (FASA)
December 2014	Lean Six Sigma, Purple Belt Training
October 2014	Lean Six Sigma, Yellow Belt Training
November 2013	Instructor in Medical Simulation, Center for Medical Simulation at the Harvard-MIT Division of Health Sciences and Technology

Licensure:

May 2011 - Present	North Carolina Medical License #: 2011- 00659 NPI #: 1104020692
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Professional Experience - Employment History:

Dec 2022 – Current	<i>Vice-Chair of Education, University of North Carolina at Chapel Hill, Department of Anesthesiology</i>
May 2022 – Dec. 2022	<i>Associate Residency Program Director, University of North Carolina at Chapel Hill, Department of Anesthesiology</i>
December 2021 – Present	<i>Professor, University of North Carolina at Chapel Hill, Department of Anesthesiology</i>
July 2019 – Present	<i>Staff Anesthesiologist, Wayne UNC Health Care, Goldsboro, NC</i>
April 2017 – May 2022	<i>Assistant Residency Program Director, University of North Carolina at Chapel Hill, Department of Anesthesiology</i>
March 2017 – Nov. 2021	<i>Associate Professor, University of North Carolina at Chapel Hill, Department of Anesthesiology</i>
August 2011 – March 2017	<i>Assistant Professor, University of North Carolina at Chapel Hill, Department of Anesthesiology</i>

Honors and Awards:

October 2020	Special Recognition Award: <i>Institutional Spread and Sustainability of the Enhanced Recovery After Surgery (ERAS)</i>
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	<i>Program - University of North Carolina Medical Center Quality and Safety Award</i>
October 2020	Meeting Co-Chair - Society for Education in Anesthesia Fall Meeting – Virtual
June 2020	Distinguished Educator in Anesthesiology Award - American Society of Anesthesiology – Society for Education in Anesthesiology
October 2019	2018-2019 Outstanding Clinician-Research Faculty - University of North Carolina, Department of Anesthesiology
July 2019	Inductee - Association of University Anesthesiologists (AUA)
July 2018	2017-2018 Outstanding Clinician-Research Faculty - University of North Carolina, Department of Anesthesiology
April 2018	Philip Liu Award for Innovation in Anesthesia Education Runner-Up - <i>A Family Focused Experience to Enhance Wellbeing of New Anesthesia Residents: "CA-1 Wellness Orientation and Family Experience.</i> Society for Education in Anesthesia
June 2017	Resident Education Faculty Honor Roll. University of North Carolina, Department of Anesthesiology
January 2017	First Place Research Abstract. <i>Validity of Simulation-based Assessments for ACGME Milestone Achievement.</i> 17 th Annual International Meeting for Simulation in Healthcare.
June 2016	Innovation in Simulation Education University of North Carolina, Department of Anesthesiology Faculty Teaching Award
June 2016	Resident Education Faculty Honor Roll. University of North Carolina, Department of Anesthesiology
May 2016	Innovation in Education Award - University of North Carolina School of Medicine, Academy of Educators
June 2015	Resident Education Faculty Honor Roll. University of North Carolina, Department of Anesthesiology
December 2014	IBM Junior Faculty Development Award - University of North Carolina at Chapel Hill Provost's Office

June 2014	Resident Education Faculty Honor Roll. University of North Carolina, Department of Anesthesiology
May 2014	Inductee - University of North Carolina School of Medicine, Academy of Educators
May 2014	First Place Research Abstract - <i>The Effect of Intern Level Physician Performance During Critical Events When Using Emergency Manuals.</i> Society for Education in Anesthesiology Annual Meeting
January 2014	Professional Development Award in Resident Education. University of North Carolina, Department of Anesthesiology
June 2013	Resident Education Faculty Honor Roll. University of North Carolina, Department of Anesthesiology
March 2013	Professional Development Award in Simulation Education. University of North Carolina, Department of Anesthesiology
November 2012	Professional Development Award in Practice Management. University of North Carolina, Department of Anesthesiology
June 2012	Teaching Excellence Faculty Teaching Award (Selected by Anesthesiology Residents). University of North Carolina, Department of Anesthesiology
August 2003-May 2007	Awardee - Nova Southeastern University College of Osteopathic Medicine Chancellor's Scholarship

Bibliography and products of scholarship:

Refereed (Peer Reviewed) Published Articles:

1. Ander, M., Huang, J., Deshpande R., **Isaak, R.**, Kassel, C., Crouch, C., Fukazawa, K., Mugve, N. *Regional Anesthesia in Transplantation Surgery: A White Paper Part 1: Thoracic Transplantation Surgery.* [Clinical Transplantation. 2023;e15043](#)
2. Szempruch, K., Martschenko, A., Arora, H., **Isaak, R.**, Prasad, R., Schmitz, J., Liu, C., Zou, F., Serrano, P., *Normal saline vs Plasma-Lyte A use intra- and post-operatively in adult kidney transplant recipients.* [OBM Transplantation 2023, Vol. 7, Issue 2](#)

3. Chen, F., **Isaak, R.**, Afroze, F., Mulaikal, T., Licatano, L., Ladlie, B., Jain, A., Willie, C., Bairde, E., Hayes, B., Carter, T., Zisblatt, L., Diachun, D., Martin, T., Marshall, J., Huffmyer, J., Hindle, A., Stahl, D., Martinelli, S., *A Multi-Site Survey Study on the Association Between the COVID-19 Pandemic and Anesthesiology Residents' Mental Health.* [Cureus. 2023 Feb 8;15\(2\):e34782](#)
4. Chen, F., Rahim, S., **Isaak, R.**, Chidgey, B., Teeter, E., Arora, H., Martinelli, S. *Maintaining Social Support in The Era of Social Distancing: Transitioning an In-Person Family-Oriented Wellness Event to a Virtual Venue.* [eLearn. Vol 2023. February. Article 4.](#)
5. Sharkey, A., Mitchell, J., Fatima, H., Bose, R., Quraishi, I., Neves, S., **Isaak, R.**, Wong, V., Mahmood, F., Matyal, R., *National Delphi Survey on Competency of Anesthesiology Residents in Perioperative Ultrasound.* [Journal of Cardiothoracic and Vascular Anesthesia. 2022 Jul 21;S1053-0770\(22\)00535-3.](#)
6. Kazior, M., Chen, F., **Isaak, R.**, Dhanda, V., Cobb, K. *Perception Precedes Reality: A Simulation and Procedural Bootcamp Improves Resident's Comfort with Transitioning to Clinical Anesthesiology Training.* [Cureus. 2022 Jan 29; 14\(1\):e21706](#)
7. Wang, T., Sun, H., Zhou, Y., Chen, D., Harman, A., **Isaak, R.**, Peterson-Layne, C., Macario, A., Fahy, B., Warner, D., *Construct Validation of the American Board of Anesthesiology's APPLIED Examination for Initial Certification.* [Anesthesia and Analgesia. 2021 Jul 1;133\(1\):226-232](#)
8. Martinelli, S., Chen, F., **Isaak, R.**, Hendrickse, A., Mahoney, B., Diachun, C., Mitchell, J., *Transitioning to Virtual Meetings: Experiences from the Society for Education in Anesthesia Virtual Fall 2020 Meeting.* [Journal of Education in Perioperative Medicine. 2021 Jul 1;23\(3\):E667](#)
9. Warner, D., Lien, C., Wang, T., Zhou, Y., **Isaak, R.**, Peterson-Layne, C., Harman, A., Macario, A., Gaiser, R., Suresh, S., Culley, D., Rathmell, J., Keegan, M., Cole, D., Fahy, B., Dainer, R., Sun, H. *Objective Structured Clinical Examination (OSCE)- Are they truly objective – Author's Response.* [Anesthesia and Analgesia. 2021 Jul 1;133\(1\):e5-e7.](#)
10. Hallman, M., Dorinsky, N., Wang, Y., Li, Q., **Isaak, R.**, Kolarczyk, L., Kim, H., Lobonc, A., *Objective Pain Assessment Using Incentive Spirometry Values.* [Pain Management. 2021 May;11\(3\):315-324](#)
11. **Isaak, R.**, Kolarczyk, L., Blacker, S., McNaull, P., Arora, H., Zvara, D., *Time Will Tell: Going Beyond Relative Value Units and American Society of Anesthesiologists Units to Objectively Quantify Non-Clinical Contributions in Academic Medical Practice.* [Anesthesia and Analgesia. 2021 Mar 1; 132\(3\):910-915](#)

12. **Isaak, R.**, Hallman, M., Heller, B., *Dry Ice as an Adjunct for Amputation Surgery.* [Asian Journal of Anesthesiology.](#) 2021 Mar;59(1):39-40
13. Martinelli, S., Chen, F., **Isaak, R.**, Huffmyer, J., Neves, S., Mitchell, J., *Educating Anesthesiologists During the COVID-19 Pandemic and Beyond.* [Anesthesia and Analgesia.](#) 2021 Mar 1;132(3):585-593
14. Muir, M., Szempruch, K., Dupuis, R., Toledo, A., **Isaak, R.**, Arora, H., Prasad, R., Rodriguez, P., *Utilizing Multimodal Analgesia to Evaluate Postoperative Analgesic Requirements in Kidney Transplant Recipients.* [Clinical Transplantation.](#) 2021, Feb 1:e14240
15. Chen, F., **Isaak, R.**, Steiner, B., Martinelli, S., *COVID-19 Impacts University of North Carolina Medical Students' Perception of the Future.* [North Carolina Medical Journal January 2021, 82 \(1\) 84-85.](#)
16. Martinelli, S., **Isaak, R.**, Chidgey, B., Bullard, T., DiLorenzo, A., Rebel, A., Chen, F. *Family Comes First: A Pilot Study of Incorporation of Social Support into Resident Well-Being.* [Journal of Education in Perioperative Medicine.](#) 2020 December;22(4):1-23
17. Warner, D., Lien, C., Wang, T., Zhou, Y., **Isaak, R.**, Peterson-Layne, C., Harman, A., Macario, A., Gaiser, R., Suresh, S., Culley, D., Rathmell, J., Keegan, M., Cole, D., Fahy, B., Dainer, R., Sun, H., *First-Year Results of the American Board of Anesthesiology's Objective Structured Clinical Examination for Initial Certification.* [Anesthesia and Analgesia.](#) 2020 Nov; 131(5):1412-1418
18. Warner, D., **Isaak, R.**, Peterson-Layne, C., Lien, C., Sun, H., Menzies, A., Cole, D., Dainer, R., Fahy, B., Macario, A., Suresh, S., Harman, A., *Development of an Objective Structured Clinical Examination as a Component of Assessment for Initial Certification in Anesthesiology.* [Anesthesia and Analgesia.](#) 2020 Jan;130(1):258-264
19. Dutton, R., **Isaak, R.**, Cammarata, B., Zvara, D., *The Future of Anesthesiology Practice: Pro-Pro-Pro.* [Advances in Anesthesia.](#) 2019 Dec; 37:111-126
20. Martinelli, S., **Isaak, R.**, Schell, R., Mitchell, J., McEvoy, M., Chen, F., *Learners and Luddites in the 21st Century: Bringing Evidence-Based Education to Anesthesiology.* [Anesthesiology.](#) 2019 Oct;131(4):908-928.
21. Katz D, Blasius K, **Isaak R**, Lipps J, Kushelev M, Goldberg A, Fastman J, Marsh B, DeMaria S. Exposure to incivility hinders clinical performance in a simulated operative crisis. [BMJ Quality and Safety.](#) 2019 Sep;28(9):750-757
22. Keil, D., Schiff, L., Carey, E., Moulder, K., Goetzinger, A., Patidar, S., Hance, L., Kolarczyk, L., **Isaak, R.**, Strassle, P., Schoenherr, J., *Predictors of Admission after the Implementation of an Enhanced Recovery After Surgery (ERAS) Pathway for*

Minimally Invasive Gynecologic Surgery. [Anesthesia and Analgesia](#). 2019 Sep;129(3):776-783

23. Chen, F., Carter, T., Maguire, D., Blanchard, E., Martinelli, S., **Isaak, R.**, *Experience is the Teacher of All Things: Prior Participation in Anesthesiology OSCEs Enhances Communication of Treatment Options with Simulated High-Risk Patients.* [Journal of Education in Perioperative Medicine](#). 2019 July 1;21(3):E626
24. Laks, S., **Isaak, R.**, Strassle, P., Hance, L., Kolarczyk, L., Kim, H., *Increased Intraoperative Vasopressor Use as Part of an Enhanced Recovery After Surgery (ERAS) Pathway for Pancreatectomy Does Not Increase Risk of Pancreatic Fistula.* [Journal of Pancreatic Cancer](#). 2018 Aug; 4(1):33-40
25. Rebel, A., DiLorenzo, A., **Isaak, R.**, McGrane, S., Moran, K., Mobley, E., Schell, R., *Replicating an Educational OSCE Project for Skill Assessment of Junior Anesthesiology Residents from One Institution to Others: A Qualitative Description.* [Journal of Education in Perioperative Medicine](#). 2018 Apr;20(2):1-12
26. Scarlet, S., **Isaak, R.**, McGinagle, K., *Design and Implementation of an Enhanced Recovery After Surgery (ERAS) Pathway for Major Limb Amputation in Vascular Surgery.* [American Surgeon](#). 2018 Apr 1;84(4):147-149
27. **Isaak R**, Stiegler M, Hobbs G, Martinelli S, Zvara D, Arora H, Chen F, *Comparing Real-time Versus Delayed Video Assessments for Evaluating ACGME Sub-Competency Milestones in Simulated Patient Care Environments.* [Cureus](#). 2018 Mar 4;10(3):e2267.
28. Kolarczyk, L., Arora, H., Manning, M., Zvara, D., **Isaak, R.**, *Defining Value-Based Care in Cardiac and Vascular Anesthesiology: The Past, Present, and Future of Perioperative Cardiovascular Care.* [Journal of Cardiothoracic and Vascular Anesthesia](#). 2018 Feb;32(1):512-521.
29. Martinelli SM, Chen F, Hobbs G, Chidgey BA, Straube LE, Zvara D, **Isaak R.** *The Use of Simulation to Improve Family Understanding and Support of Anesthesia Providers.* [Cureus](#). 2018 Mar 2;10(3):e2262
30. **Isaak, R.**, Martinelli, S, Chen, F, Arora, H, Zvara, D, Hobbs, G, Stiegler, M. *Validity of simulation-based assessments for ACGME milestone achievement.* [Simulation in Healthcare](#). 2018 June; 13(3):201-210
31. Smeltz A, Kolarczyk L, **Isaak R.** *Update on Perioperative Pulmonary Embolism Management: A Decision Support Tool to Aid in Diagnosis and Treatment.* [Advances in Anesthesia](#). 2017(35), 213-228.

32. Martinelli, S., Chen, F., Hobbs, G., Chidgey, B., Hueske, A., Straube, L., Zvara, D., **Isaak, R.**, *You will never walk alone: A simulation experience for caregiver's family and friends.* [Anesthesia and Analgesia. 2017 Dec;125\(6\):2171](#)
33. **Isaak, R.**, Chen, F., Arora, H., Martinelli, S., Zvara, D., Stiegler, M., *How are Anesthesiology Programs Preparing Residents for the new APPLIED Certification Exam? A Descriptive Survey of Residency Simulation Programs.* [Anesthesia and Analgesia, 2017 Sep 125\(3\):991-998](#)
34. **Isaak, R.**, Kumar P, Arora, H. *Pro: TEE should be used for all liver transplant surgeries.* [Journal of Cardiothoracic and Vascular Anesthesia. 2017 Dec;31\(6\):2282-2286](#)
35. Kazior M, Wang J, Stiegler M, Nguyen D, Rebel A, **Isaak R.** *Emergency Manuals Improve Novice Physician Performance During ICU Emergencies.* [Journal of Education in Perioperative Medicine. 2017. July 1;19\(3\):1-11](#)
36. **Isaak R.**, Chen, F., Hobbs, G., Martinelli, S., Stiegler, M., Arora, H. *Standardized Mixed-Fidelity Simulation for ACGME Milestones Competency Assessment and Objective Structured Clinical Exam Preparation.* [Medical Science Educator. 2016, Sept. 26 \(3\):437-441](#)
37. **Isaak, R.**, Stiegler, M. *Review of crisis resource management (CRM) principles in the setting of intraoperative malignant hyperthermia.* [Journal of Anesthesia, 2016 Apr; 30\(2\), 298-306.](#)
38. Kolarczyk LM, McNaull P, Hance L, Bednar P, Kim HJ, **Isaak R.** *Implementation of an Enhanced Recovery After Surgery (ERAS) Clinical Pathway Using Lean Six Sigma Principles: A Framework for Ongoing Quality Improvement.* [Journal of Anesthesia & Surgery. 2016, Feb; 1\(2\); 1-7.](#)
39. **Isaak R.**, Furman W. *Con: Patients at risk for spinal cord ischemia after thoracic endovascular aortic repairs should not receive prophylactic CSF drainage.* [Journal of Cardiothoracic and Vascular Anesthesia. 2015 Oct; 29\(5\):1381-3](#)

Refereed (Peer Reviewed) Articles – In Press/Submitted

1. Martinelli, S., **Isaak, R.**, Nichols, K., Meltzer-Brody, S., Canter, C., Grewe, M., Chen, F., *Innovation Abstract The Family Experience: A Family-Focused Support Intervention to Enhance Wellness in Undergraduate Medical Education.* [Accepted to Academic Medicine](#)
2. Chen, F., Chen, W., **Isaak, R.**, Shenmeng, X., *Acquire, Curate, Diversify: Staying Current with Medical Education Literature.* [Accepted by Academic Medicine](#)

3. Chen, F., Stiegler, M., Martinelli, S., Arora, H., **Isaak, R.** *No Miracles in Two Minutes: A Randomized Controlled Study on the Impact of Preparatory Expansive Posing on Anesthesiology Residents' Performance in Mock Structured Oral Examinations.* [Accepted by Journal of Education in Perioperative Medicine](#)
4. Woodworth, G., Goldstein, Z., Ambardekar, A., Arthur, M., Bailey, C., Booth, G., Carney, P., Chen, F., Duncan, M., Fromer, I., Hallman, M., Hoang, T., **Isaak, R.**, Klesius, L., Ladlie, B., Mitchell, S., Miller-Juve, A., Mitchell, J., McGrath, B., Shepler, J., Sim, C., Spofford, C., Van Cleve, W., Maniker, R., *Development and Pilot Testing of a Programmatic System for Competency Assessment in United States Anesthesiology Residency Training.* [Accepted by Anesthesia and Analgesia.](#)
5. Martinelli, S., Tran, T., Chidgey, B., **Isaak, R.**, Teeter, E., Chen, F., *Family Anesthesia Experience: Improving Social Support of Residents Through Education of Their Family and Friends.* [Submitted to MedEdPORTAL.](#)
6. Xu, W., Sun, H., Deiner, S., Harman, A., **Isaak, R.**, Keegan, M., *A Comparison of the American Board of Anesthesiology's In-person and Virtual Objective Structured Clinical Examination.* [Submitted Journal of Clinical Anesthesia](#)
7. Rojas, A., Chen, F., Xinming, A., **Isaak, R.**, McMillan, D., Jolly, M., Allan, J., Coombs, R., Nanda, M., Grant, S. *Beyond the Block: Development of an Objective Structured Clinical Examination to Evaluate Communication and Interpersonal Skills in Regional Anesthesia Training.* [Submitted to MedEdPORTAL.](#)
8. Blacker, S., Chen, F., Winecoff, D., Arora, H., Hierlmeier, B., Kacmar, R., Passannante, A., Plunkett, A., Zvara, D., Cobb, B., Doyal, A., Rosenkrans, D., Brown, K., Gonzalez, M., Hood, C., Pham, T., Lele, A., Hall, L., Ali, A., **Isaak, R.**, *An Exploratory Analysis of ChatGPT Compared to Human Performance with the Anesthesiology Oral Board Exam: Initial Insights and Implications.* [Submitted to Anesthesia and Analgesia.](#)
9. Ander, M., Mugve, N., Crouch, C., Kassel, C., Fukazawa, K., **Isaak, R.**, Deshpande, R., Huang, J., *Regional Anesthesia for Transplantation Surgery – A White Paper Part 2: Abdominal Transplantation Surgery.* [Submitted Journal of Clinical Transplantation.](#)

Refereed (Peer Reviewed) Published Abstracts:

1. Chen, F., Stiegler, M., **Isaak, R.**, *Global Rating Scores Have a Strong Correlation to Competence Referenced Checklist Scores for OSCEs.* In: Abstracts of Posters presented at the 2017 Annual Meeting of the International Anesthesia Research Society, Washington, DC. May 4, 2017. *Anesthesia and Analgesia*, 2017; 123; S117
2. Laks, S., Kolarczyk, L., **Isaak, R.**, Hance, L., Strassle, P., H, Kim. *Enhanced Recovery After Surgery (ERAS) for Pancreatectomy: Increased Vasopressor Use Does Not Increase Pancreatic Fistula Rates.* In: Abstracts to be Presented at the Society of

Surgical Oncology 70th Annual Cancer Symposium. Ann Surg Oncol, 2017, 24; S1, 6-195.

3. **Isaak, R.**, Chen F., Stiegler, M., Arora, H., *Financial Analysis and Cost-Saving Strategy for a Large-Scale Objective Structured Clinical Exam for Residents*. In: Abstracts to be Presented at the 17th Annual International Meeting on Simulation in Healthcare: January 28th – February 1st, 2017 Orlando, FL, Simulation in Healthcare, 2016, Dec:11(6); 425 – 509
4. Hobbs, G., Chen F., Stiegler, M., **Isaak, R.**, *1200 Evaluations in 45 Hours: An Efficient Logistical Operations Model for Large-Scale Simulation-Based ACGME Milestones Assessments*. In: Abstracts to be Presented at the 17th Annual International Meeting on Simulation in Healthcare: January 28th – February 1st, 2017 Orlando, FL, Simulation in Healthcare, 2016, Dec:11(6); 425 – 509
5. Balfanz, G, Blasius, K, Cobb, K, Specht, B, Rosenkrans, D, **Isaak, R.** *In-Situ Simulation Program in GI Procedures Suite Improves Application of Crisis Resource Management Principles*. In: Abstracts to be Presented at the 17th Annual International Meeting on Simulation in Healthcare: January 28th – February 1st, 2017 Orlando, FL, Simulation in Healthcare, 2016, Dec:11(6); 425 – 509
6. McQueen, J., Chen F., Stiegler, M., **Isaak, R.**, *An Innovative Three-Stage Training Program for Standardized Patient and Clinician Actors in High Stakes Objective Clinical Skills Exams*. In: Abstracts to be Presented at the 17th Annual International Meeting on Simulation in Healthcare: January 28th – February 1st, 2017 Orlando, FL, Simulation in Healthcare, 2016, Dec:11(6); 425 – 509
7. Stiegler, M., Hobbs, G., Chen F., Martinelli, S., Arora, H., **Isaak, R.**, *Validity of Simulation-based Assessments for ACGME Milestone Achievement*. In: Abstracts to be Presented at the 17th Annual International Meeting on Simulation in Healthcare: January 28th – February 1st, 2017 Orlando, FL, Simulation in Healthcare, 2016, Dec:11(6); 425 – 509
8. Rebel, A., **Isaak, R.**, DiLorenzo, A., Schumacher, M., Stiegler, M., Schell, R., *Rating Objective Structured Clinical Exams: It Matters How (But Not Who)*. In Abstracts of Posters presented at the 2016 Annual Meeting of the International Anesthesia Research Society, San Francisco, CA, May 22, 2016. Anesthesia and Analgesia, 2016; 122; S117
9. **Isaak, R.**, Hobbs, G., Kolarczyk, L., Balfanz, G., Bass, C., Stiegler, M., *Real Time vs. Delayed Assessment of ACGME Milestones Through Simulation Scenarios*. Published Abstract. Simulation in Healthcare, 2015 Dec ;10(6): 399.
10. Kirby H, Rohman T, **Isaak R**, Hance L, Kim H, Kolarczyk L. *Enhanced Recovery After Surgery (ERAS) for Pancreatic Surgery Decreases Hospital Length of Stay*. Published Abstract. Clark JD et al. Anesthesiology, 2015 Oct; 123:750-758.

Refereed other products of scholarships:

Martinelli, S., **Isaak, R.**, (2019). AMB OSCE 1: Informed Consent for a Regional Block. Anesthesia Education Toolbox. (Peer-Reviewed). Published 04/11/2019.
<https://www.anesthesiatoolbox.com/docs/DOC-4518>

Isaak, R., AMB OSCE 3: Cancellation. Anesthesia Education Toolbox . Published 04/11/2019 (Peer-Reviewed). <https://www.anesthesiatoolbox.com/docs/DOC-4519>

Eskildsen, J., **Isaak, R.** (2019). AMB OSCE Periprocedural Complications. Anesthesia Education Toolbox. Published 04/10/2019 (Peer-Reviewed).
<https://www.anesthesiatoolbox.com/docs/DOC-4516>

McDaniel, M., **Isaak, R.** (2018). Peds OSCE 1: Family Discussion about Blood Products. Anesthesia Education Toolbox: Published 12/9/2018 (Peer-Reviewed)
<https://www.anesthesiatoolbox.com/docs/DOC-4310>

McDaniel, M., **Isaak, R.** (2018). Peds OSCE 2: NPO Status
Anesthesia Education Toolbox: Published 12/9/2018 (Peer-Reviewed)
<https://www.anesthesiatoolbox.com/docs/DOC-4319>

McDaniel, M., **Isaak, R.** (2018). Peds OSCE 3: Medical Disclosure
Anesthesia Education Toolbox: Published 12/9/2018 (Peer-Reviewed)
<https://www.anesthesiatoolbox.com/docs/DOC-4321>

Digital and Other Novel Forms of Scholarship (with links):

Consortium of Anesthesiology Patient Safety and Experiential Learning (CAPSEL)
Residency Critical Event Management (CEM) Simulation Scenarios:

Kyle R, **Isaak R**, Lupa C, Kumar P, Stiegler M, & Kolarczyk L. (2014) *Can't Intubate/Can't Ventilate (CICV)*. University of North Carolina, Chapel Hill, NC.

Lupa C., Kumar P., Bass C., Stiegler M., **Isaak R.**, & Kolarczyk L. (2014). *Pediatric Anaphylaxis*. University of North Carolina, Chapel Hill, NC.

Kyle R., **Isaak R.**, Cobb K., Stiegler M., & Kolarczyk L. (2014). *Malignant Hyperthermia*. University of North Carolina, Chapel Hill, NC.

Kolarczyk L., **Isaak R.**, Cobb K., Balfanz G., & Stiegler M. (2014). *Local Anesthetic Toxicity*. University of North Carolina, Chapel Hill, NC.

Bass C., **Isaak R.**, Harker E., Balfanz G., Stiegler M., & Kolarczyk L. (2014). *High Spinal*. University of North Carolina, Chapel Hill, NC.

Cobb K., Harker E., Stiegler M., **Isaak R.**, & Kolarczyk L., (2014). *Severe Preeclampsia*. University of North Carolina, Chapel Hill, NC.

Baboolal H., **Isaak R.**, Balfanz G., Stiegler M., & Kolarczyk, L. (2014). *Amniotic Fluid Embolism*. University of North Carolina, Chapel Hill, NC.

Isaak R., Stiegler M., & Kolarczyk L. (2013). *Trauma/Rhabdomyolysis*. University of North Carolina, Chapel Hill, NC.

Isaak R., Stiegler M., Barrick B., Kyle R., Baboolal H., & Kolarczyk L. (2014). *Trauma/Transfusion Reaction*. University of North Carolina, Chapel Hill, NC.

Barrick B., **Isaak R.**, Lupa C., Kyle R, Stiegler M., & Kolarczyk L. (2014). *Machine and Equipment Failures*. University of North Carolina, Chapel Hill, NC.

Bass C., **Isaak R.**, Kumar P., Stiegler M., & Kolarczyk L. (2014). *Venous Air Embolism*. University of North Carolina, Chapel Hill, NC.

Balfanz G., **Isaak R.**, Baboolal H., Stiegler M., & Kolarczyk L. (2014). *Myocardial Infarction vs. Pulmonary Embolism*. University of North Carolina, Chapel Hill, NC.

Refereed Oral Presentations and Unpublished Abstracts:

Oral Presentations:

Martinelli, S., **Isaak, R.**, Nichols, K., Meltzer-Brody, S., Canter, C., Grewe, M., Chen, F., Innovation Abstract The Family Experience: *A Family-Focused Support Intervention to Enhance Wellness in Undergraduate Medical Education*. Presented at Learn Serve Lead 2023: The AAMC Annual Meeting, Nov. 3, 2023. Seattle, WA. Solicited.

Bullard, T., **Isaak, R.**, Chen, F., Arora, H., *Improving Residents' Financial Literacy as an Essential Component of Wellness*. Presented at the Society for Education in Anesthesiology Annual Meeting. Virtual Meeting. April 16, 2021. Solicited.

Chen, F., Carter, T., MacGuire, D., **Isaak, R.** *Could prior experience enhance resident performance in objective structured clinical exams?* Presented at Society for Education in Anesthesiology Annual Meeting. Louisville, KY., April 20, 2018. Solicited.

Martinelli, S., Chen, F., **Isaak, R.** *CA-1 Wellness Orientation and Family*
Presented at Society for Education in Anesthesiology Annual Meeting.
Louisville, KY., April 20, 2018. Solicited.

Isaak, R., Chen, F., *Delayed Video Evaluations are Effective for Assessing
Milestones in a Simulated Patient Care Environment.* Presented at:
American Association of Medical Colleges Annual Meeting, Seattle, WA.,
November 15, 2016. Solicited.

Kazior, M., Wang, J., Rebel, A., Nguyen, D., Stiegler M., **Isaak, R.**, *Emergency
Manuals Improve Patient Care Provided by Intern Level Physicians During
Simulated Critical Events.* Scientific Abstract Oral Presentation presented
at: American Society of Anesthesiologists Annual Meeting. Chicago, IL.
October 24, 2016. Solicited

Kirby, H., Rohman, T., Bialas, R., **Isaak, R.**, Hance, L., Kim, H., Kolarczyk, L.,
*Enhanced Recovery After Surgery (ERAS) Clinical Pathway for Patients
Undergoing Pancreatic Surgery Decreases Hospital Length of Stay.* Presented
at: "Best of Abstracts – Clinical Science" American Society of
Anesthesiologists Annual Meeting. San Diego, CA., October 24, 2015. Solicited

Kazior, M., **Isaak, R.**, *The Effect of Intern Level Physician Performance During
Critical Events When Using Emergency Manuals.* Presented at: George F.
Sheldon Resident Research Symposium. Chapel Hill, NC., May 8, 2014.
Solicited

Kazior, M., **Isaak, R.** *The Effect of Intern Level Physician Performance During
Critical Events When Using Emergency Manuals.* Presented at: Society for
Education in Anesthesiology Annual Meeting. Boston, MA., May 31, 2014.
Solicited.

Poster Discussions:

Abiona, V., Eastlack, S., Isaak, R., *Carcinoid Crisis During
Pancreaticoduodenectomy For Neuroendocrine Tumor Resection Under
Chloroprocaine Epidural Anesthesia.* American Society of Anesthesiologists
Annual Meeting. New Orleans, LA, October 20, 2022. Solicited

Szempruch, K., Isaak, R., Prasad, R., Arora, H., Martschenko, D., Serrano, P.,
*Normal Saline Vs Electrolyte-a Use Peri- And Post-operatively In Adult Kidney
Transplant Recipients.* Scientific Abstract Poster presented at: American
Transplant Congress, Boston, MA., June 4, 2020. Solicited.

Chen, F., Stiegler, M., Martinelli, S., Arora, H., Isaak, R., *No Miracles in Two
Minutes: Preparatory Expansive Postures Has No Impact on Anesthesiology*

Residents' Performance in Mock Oral Examinations. Poster Scientific Abstract
Poster presented at: Society for Education in Anesthesiology Annual Meeting,
Pittsburgh, PA, April 8, 2022.

Shelton, B., Brown, **K., Isaak, R.**, *Walking the Tight Rope: Anesthetic Management for a Patient with Myasthenia Gravis and Asthma.* Scientific Abstract
Poster Presentation presented at: North Carolina Society of Anesthesiologists
Annual Meeting, Poster Presentation, Myrtle Beach, SC, September 18, 2021.
Solicited.

Kazior, M., Isaak, R., Chen, F., Cobb, K. *A Simulation and Procedural Skills Bootcamp Improves Residents' Perceptions of Transitioning to Clinical Anesthesiology Training.* Presented at the Society for Education in Anesthesiology Annual Meeting. Virtual Meeting. April 16, 2021. Solicited.

Martinelli, S., **Isaak, R.**, FAX Study Group (16 additional members).
Unexpected Minimal Impact of COVID-19 on Anesthesiology Resident Well-Being. International Conference on Physician Health. Virtual Meeting. April 26, 2021. Solicited.

Brown, K., **Isaak, R.**, Acton, J. *Intraoperative Radiation for Squamous Cell Carcinoma Involving the Carotid Artery.* American Society of Anesthesiologists Annual Meeting. Virtual Meeting. October 5, 2020. Solicited

Pham, T., Rojas, A., **Isaak, R.**, *Perianesthetic Implications of Pheochromocytoma After Recent NSTEMI During COVID-19 Pandemic.* American Society of Anesthesiologists Annual Meeting. Virtual Meeting. October 5, 2020. Solicited

Hunter, D., **Isaak, R.**, *Point of Care Ultrasound as an Aid in Diagnosing Eosinophilic Myocarditis.* American Society of Anesthesiologists Annual Meeting. Virtual Meeting. October 5, 2020. Solicited

Martinelli, S., Chen, F., Chidgey, B., Bullard, T., Rebel, A., DiLorenzo, A., **Isaak, R.**, *Family Anesthesia Experience: A Family Focused Experience to Enhance Wellbeing of New Anesthesia Residents.* UNC 1st Annual Wellness Scholarship Expo. November 20, 2019. Chapel Hill, NC. Solicited.

Woody, N, Chidgey, B, Mann, J, Gilmore, J, McCall, C, **Isaak, R**, Lobonc, A, Balfanz, G, Kolarczyk, L, Nielsen, M, Maltais, T, McNaul, P., *Utilizing Technology to Increase Inclusion of ERAS Pathways in a Hospital Opioid Stewardship Program.* Research Abstract Poster Presentation at: American Society of Enhanced Recovery (ASER) / Evidence Based Perioperative Medicine (EBPOM) Annual Congress of Enhanced Recovery and Perioperative Medicine. April 25, 2019. Washington, D.C. Solicited.

Hance, L., Chidgey, B., McNaull, P., Mann, J., Woody, N., McCall, C., **Isaak, R.**, Lobonc, A., Balfanz, G., Kolarczyk, L., Nielsen, M., Pappas, A., Gilmore, J., Maltais, T., *Two Low-Cost Sustainable Programs Work Synergistically Together to Impact the Opioid Crisis*. Quality Improvement Poster Abstract Presented at: EBPOM-USA Chicago Masters Course: A Perioperative Care Practicum, Chicago, IL. September 30, 2018

Hance, L., Hackman, T., Tanner, A., Du, E., Hampton, H., **Isaak, R.**, Serrano, R., *Developing a Pathway for the Unique Needs and Risks of Laryngectomy Patients*. Quality Improvement Poster Abstract Presented at: EBPOM-USA Chicago Masters Course: A Perioperative Care Practicum, Chicago, IL. September 30, 2018

Ezimora, C., **Isaak, R.**, Arora, H., *Anesthetic Management and Neurological Monitoring for Transcarotid Artery*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Francisco, CA. October 15, 2018. Solicited

Sriram, N, Gue, J, Harkrider, B. Balfanz, G, **Isaak, R.** *Who's Who In A Code Blue: A Quality Improvement Project To Improve Role Assignments in Critical Situations*. Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Francisco, CA. October 14, 2018. Solicited

Rose, K, Hill, A, Snow, E, Rojas, A, **Isaak, R.**, Henry, M, Kolarczyk, L. *A Simulation Study to Evaluate Improvements in PACU NSTEMI Response Following Implementation of a Clinical Pathway*. Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Francisco, CA. October 13, 2018. Solicited

Serrano R, Tanner M, Du E, **Isaak R**, Kolarczyk L, Hance L, Hackman T. *Enhanced Recovery After Surgery in Otolaryngology: A Multidisciplinary Approach to Improving Patient Care*. Scientific Poster Presentation at: American College of Surgeons Quality and Safety Conference. July 23, 2018. Orlando, Florida.

Kazemi, A., Chen, F., **Isaak, R.**, *OSCE Simulation for Assessing Efficacy of Training in Regional Anesthesiology*. Presented at: ASRA's World Congress on Regional Anesthesia & Pain Medicine. New York, NY., April 19, 2018. Solicited.

Rosenkrans D, Heniser E, Rowan C, Gue J, Mozingo, C, **Isaak R**, *Improving the Securement of Peripheral Nerve Catheters for Perioperative Pain Management*. Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Boston, MA. October 23, 2017. Solicited

Marino M, Kirby H, Specht B, Hance L, Kim H, **Isaak R**, Kolarczyk L. *Decreased PACU time and improved immediate postoperative mental status as a result of an ERAS clinical pathway*. Scientific Abstract Poster Presentation presented at: University of North Carolina Health Care Quality Expo October 12, 2017. Solicited

Specht B, Kirby H, Marino M, Hance L, Kim H, Kolarczyk L, **Isaak R**, *Enhanced recovery clinical pathway for pancreatic surgical patients decreases unanticipated ICU admissions*. Poster Presentation presented at: University of North Carolina Health Care Quality Expo October 12, 2017. Solicited

Rohman T, Judd B, Mayo K, Hance L, Burns C, Haithcock B, Long J, **Isaak R**, Teeter E, Kolarczyk L. *Enhanced Recovery Program (ERP) for thoracic surgical patients decreases PACU recovery time and opioid use*. Poster Presentation presented at: University of North Carolina Health Care Quality Expo October 12, 2017. Solicited

Stiegler, M., Hobbs, G., Chen F., Martinelli, S., Arora, H., **Isaak R**, *Validity of Simulation-based Assessments for ACGME Milestone Achievement*. Scientific Abstract Poster Presentation presented at: Academy of Educators Evening of Scholarship Research Symposium Chapel Hill, NC May 11, 2017. Solicited.

Smith M, Joyner B, Waller, E, Smith B, Aliaga S, Hobbs G, **Isaak R**, Blasius K. *Measuring Milestones: Training Pediatric Subspecialists in Communication and Professionalism*. Abstract Poster Presentation at: Pediatric Academic Societies Annual Meeting, May 6, 2017. San Francisco. Solicited. Published in The Cureus Journal of Medical Science

Scarlet S., Kolarczyk L, **Isaak R**, McGinagle, K. *Development of a novel enhanced recovery after surgery pathway for major lower extremity amputation*. Research Abstract Poster Presentation at: American Society of Enhanced Recovery (ASER) / Evidence Based Perioperative Medicine (EBPOM) Annual Congress of Enhanced Recovery and Perioperative Medicine. April 27, 2017. Washington, D.C. Solicited.

Prasad R, Hance L, Khullar L, Kolarczyk L, **Isaak R**. *Development of a Web-Based Smart Phone App: A Sustainable Measure Enable of Pathway Details*. Research Abstract Poster Presentation at: American Society of Enhanced Recovery (ASER) / Evidence Based Perioperative Medicine (EBPOM) Annual Congress of Enhanced Recovery and Perioperative Medicine. April 27, 2017. Washington, D.C. Solicited.

Hance L, Goetzinger A, Patidar S, Schoenherr J, Kolarczyk L, **Isaak R**, Keil D, Michael L, Carey E, Schiff L, Moulder J. *Preoperative Mental Health*

Optimization in an ERAS Pathway Leads to Increased Rate of Same-Day Discharge for Laparoscopic Hysterectomy Patients. Research Abstract Poster Presentation at: American Society of Enhanced Recovery (ASER) / Evidence Based Perioperative Medicine (EBPOM) Annual Congress of Enhanced Recovery and Perioperative Medicine. April 27, 2017. Washington, D.C. Solicited.

Rebel, A., DiLorenzo, A., **Isaak, R.**, Moran, K., Mobley, E., Schell, R., *Transferring an Educational OSCE Project from one institution to others: A Qualitative Description.* Curriculum Abstract Poster Presentation at: Society for Education in Anesthesiology Spring Meeting, Jacksonville, FL. April 27, 2017. Solicited

Blasius, K., Baboolal, H., Singh, D., Smith, M., Chen, F., **Isaak, R.**, McDaniel, M., Gurnaney, H., Joyner, B., Hobbs, G., Lupa, C., *Professionalism and Communication Assessment for Milestones in Pediatric Anesthesia: Thinking Outside the Box.* Abstract Poster Presentation at: Society for Pediatric Anesthesia Spring Meeting, Austin, TX., March 4, 2017. Solicited

Smith, M., Baboolal, H., Chen, F., Hobbs, G., Joyner, B., Lupa, C., McDaniel, M., Singh, D., **Isaak, R.**, Blasius, K *Implementation of an Advanced Level Milestone Assessment Program Utilizing High Fidelity Simulation.* Program Innovation Abstract Poster Presentation presented at: International Meeting for Simulation in Healthcare. Orlando, FL., January 29, 2017. Solicited

Balfanz, G., Sellers, S., **Isaak, R.**, *In-Situ "Code-Blue" Simulations Unmask Areas in Critical Need of Improvement by Code Response Team.* Program Innovation Abstract Poster Presentation presented at: International Meeting for Simulation in Healthcare. Orlando, FL January 29, 2017. Solicited

McMillan, D., **Isaak, R.**, Arora, H., *Intraoperative Pulmonary Embolism Identified in Patient with Persistent Hypoxia: How to Proceed with Management.* Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 22, 2016. Solicited

Marino M, Kirby H, Specht B, Hance L, Kim H, **Isaak R**, Kolarczyk L. *Decreased PACU time and improved immediate postoperative mental status as a result of an ERAS clinical pathway.* Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 24, 2016. Solicited

Smeltz, A, S., **Isaak, R.**, Hwang, J., Painter, N., *Detection of Massive Pulmonary Embolism in the Absence of Right Heart Strain on Transesophageal Echocardiography.* Medically Challenging Case Poster Presentation presented

at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 23, 2016. Solicited

Specht, B, S., **Isaak, R.**, *Cardiopulmonary Bypass Options for Open TAAA Repair*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 23, 2016. Solicited

Specht B, Kirby H, Marino M, Hance L, Kim H, Kolarczyk L, **Isaak R**, *Enhanced recovery clinical pathway for pancreatic surgical patients decreases unanticipated ICU admissions*. Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 22, 2016. Solicited

Rohman T, Judd B, Mayo K, Hance L, Burns C, Haithcock B, Long J, **Isaak R**, Teeter E, Kolarczyk L. *Enhanced Recovery Program (ERP) for thoracic surgical patients decreases PACU recovery time and opioid use*. Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 22, 2016. Solicited

Acosta, S., **Isaak, R.**, *Perioperative Management of the Patient Undergoing a Descending Thoracic Aorta to Femoral Artery Bypass*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Chicago, IL. October 22, 2016. Solicited

Kazior, M., Wang, J., Rebel, A., Nguyen, D., Stiegler, M., **Isaak, R.**, UNC. *Emergency Manuals Improve Patient Care Provided by Intern Level Physicians During Simulated Critical Events*. Scientific Abstract Poster Presentation presented at: Academy of Educators Evening of Scholarship Research Symposium Chapel Hill, NC May 26, 2016. Solicited.

Isaak, R., Hobbs, G., Kolarczyk, L., Balfanz, G., Bass, C., Stiegler, M., , *Real Time vs. Delayed Assessment of ACGME Milestones Through Simulation Scenarios*. Scientific Abstract Poster Presentation presented at: International Meeting for Simulation in Healthcare. San Diego, CA, January 17, 2016. Solicited

Isaak, R., Stiegler, M., Martinelli, S., Kolarczyk, L., Arora, H., *Mixed-fidelity Simulation for Assessment of ACGME Milestones and ABA APPLIED Exam Preparation*. Scientific Abstract Poster Presentation presented at: Educational Session American Society of Anesthesiologists Annual Meeting. San Diego, CA, October 25, 2015. Solicited.

Rohman, T., Kirby, H., Bialas, R., **Isaak, R.**, Hance, L., Kim, H., Kolarczyk, L., *Enhanced Recovery After Surgery (ERAS) Clinical Pathway for Patients Undergoing Pancreatic Surgery Decreases Blood Product Administration*.

Scientific Abstract Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Diego, CA., October 24, 2015. Solicited

Specht, B., **Isaak, R.**, *Adequacy of Disposable Stethoscopes to Detect Common Perioperative Respiratory Findings*. Scientific Abstract Poster Presentation presented at: North Carolina Society of Anesthesiologists Annual Meeting, Poster Presentation, Asheville, NC, September 25, 2015. Solicited.

Isaak, R., Stiegler, M., Martinelli, S., Kolarczyk, L., Arora, H., *Mixed-fidelity Simulation for Assessment of ACGME Milestones and ABA APPLIED Exam Preparation*. Scientific Abstract Poster Presentation presented at: UNC Academy of Educators Evening of Scholarship Research Symposium. Chapel Hill, NC May 27, 2015. Solicited.

Kirby, H., Rohman, T., Bialas, R., **Isaak, R.**, Hance, L., Kim, H., Kolarczyk, L., *Enhanced Recovery After Surgery (ERAS) Clinical Pathway for Patients Undergoing Pancreatic Surgery Decreases Hospital Length of Stay*. Scientific Abstract Poster Presentation presented at: George F. Sheldon Resident Research Symposium. Chapel Hill, NC., May 15, 2015. Solicited.

Rohman, T., Kirby, H., Bialas, R., **Isaak, R.**, Hance, L., Kim, H., Kolarczyk, L., *Enhanced Recovery After Surgery (ERAS) Clinical Pathway for Patients Undergoing Pancreatic Surgery Decreases Blood Product Administration*. Scientific Abstract Poster Presentation presented at: The George F. Sheldon Resident Research Symposium. Chapel Hill, NC., May 15, 2015. Solicited

Isaak, R., Stiegler, M., *Successful Use of Crisis Resource Management, a Cognitive Aid, and a "Reader" During an Episode of Malignant Hyperthermia*. Innovative Ideas Abstract Poster Presentation presented at: 15th International Meeting for Simulation in Healthcare · New Orleans, LA, January 11, 2015. Solicited

Judd, B., **Isaak, R.**, Qadri, M., Arora, H., *Liver Transplantation in a Patient with Moderate Portopulmonary Hypertension: When to Proceed versus Cancel*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. New Orleans, LA. October 13, 2014. Solicited

Claar, S., Kolarczyk, L., **Isaak, R.**, Jain, L., Hardman, D., Williams, J., *Intraoperative PEA Arrest in the Prone Position with Unstable Cervical Spine Fracture in Mayfield Frame*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. New Orleans, LA. October 12, 2014. Solicited.

Helgren, W., **Isaak, R.** Stiegler, M., *Crisis Resource Management, Cognitive Aids, and a "Reader": Utilization in Malignant Hyperthermia*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. New Orleans, LA, October 12, 2014. Solicited

Dalal N., **Isaak, R.**, *Medical and Ethical Challenges in a Patient with a Known History of Anaphylactic Reaction to Contrast Dye Presenting for Endovascular Surgery*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Francisco, CA. October 11, 2013. Solicited

Asgarian C., **Isaak, R.**, *Spinal Subdural Hematoma After Lumbar Drain Placement for FEVAR*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Francisco, CA. October 13, 2013. Solicited

Isaak, R. *Emergent Cardiopulmonary Bypass due to SAM Physiology Secondary to Massive Hemorrhage During IVC Reconstruction*. Case Report Poster Presentation presented at: Mount Sinai School of Medicine and Department of Anesthesiology 31st Annual Symposium, Clinical Update in Anesthesiology, Surgery, and Perioperative Medicine. Curacao, Netherlands Antilles. January 20, 2013. Solicited

Lasater M., **Isaak, R.**, *Case Report of a Novel Hybrid Approach to Endovascular TAAA Repair and Anesthetic Concerns*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. Washington, DC. October 14, 2012. Solicited

Isaak, R., Boyle, J., Downing, J., *Emergent Pubic Symphysiotomy Under Epidural Anesthesia*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. San Diego, CA. October 17, 2010. Solicited

Isaak, R., Boyle, J., Downing, J., Research Abstract. *Emergent Pubic Symphysiotomy Under Epidural Anesthesia*. Case Report Poster Presentation presented at: NYSORA World Conference. Dubai, United Arab Emirates. March 7, 2010. Solicited

Isaak, R., Blair, J., *Intraoperative Management of a 6 cm Giant Right Middle Cerebral Artery Aneurysm*. Medically Challenging Case Poster Presentation presented at: American Society of Anesthesiologists Annual Meeting. New Orleans, LA. October 19, 2009. Solicited

Isaak, R., Figueroa, J., *Quantification of Nitric Oxide Synthase in Fetal Sheep Kidneys*. Scientific Abstract Poster Presentation presented at: Wake Forest

University Undergraduate Summer Research Symposium. Winston Salem, NC. July 29, 2002. Invited

Isaak, R, Figueroa, J., *Expression of Nitric Oxide Synthase in Fetal Sheep Kidneys*. Scientific Abstract Poster Presentation presented at: Wake Forest University Undergraduate Summer Research Symposium. Winston Salem, NC. July 30, 2001. Invited

Workshops:

Faculty. Introduction to Perioperative Point-of-Care Ultrasound and Transthoracic Echocardiography. American Society of Anesthesiologists Annual Meeting. Washington, DC. Invited. October 6, 2020 (Session Cancelled due to COVID-19)

Lead Faculty. *A Day in the Life of an Anesthesiologist: Kids Track* American Society of Anesthesiologists Annual Meeting. Washington, DC. Invited. October 4, 2020 (Session Cancelled due to COVID-19)

Lead Faculty. *A Day in the Life of an Anesthesiologist: Adult Track* American Society of Anesthesiologists Annual Meeting. Washington, DC. Invited. October 4, 2020 (Session Cancelled due to COVID-19)

Lead Faculty. *A Day in the Life of an Anesthesiologist* American Society of Anesthesiologists Annual Meeting. Orlando, FL. October 20, 2019 Invited

Faculty. Introduction to Perioperative Point-of-Care Ultrasound and Transthoracic Echocardiography. American Society of Anesthesiologists Annual Meeting. Orlando, FL. October 19, 2019. Invited

Faculty. *Introduction to Point-of-Care Ultrasound and Focused Assessed Transthoracic Echocardiography*. American Society of Anesthesiologists Annual Meeting. San Francisco, CA. October 15, 2018. Invited

Faculty. *Create Your Own OSCE for Simulation-Based Milestone Assessments: Multicenter Blueprints for Successful Concept, Construction, Execution, and Validation*. International Meeting for Simulation in Healthcare. Orlando, FL. January 28, 2017. Invited

Faculty. *Objective Structured Clinical Exam to Assess Resident Milestones*. Society for Education in Anesthesiology 31st Spring Meeting, Baltimore, MD, June 5, 2016. Invited

Faculty. *Objective Structured Clinical Exam to Assess Resident Milestones*. Society for Education in Anesthesiology 31st Spring Meeting, Baltimore, MD, June 3, 2016. Invited

Faculty. *Creating New Scenarios for a Milestones Based OSCE*. 16th International Meeting for Simulation in Healthcare. San Diego, CA. January 18, 2016. Invited

Faculty. *Frames, Knowledge Gaps, and Cognitive Errors: Advanced Debriefing Tools for Exploring Decision Behavior*. 15th International Meeting for Simulation in Healthcare. New Orleans, LA. January 17, 2015. Invited

Panels:

Faculty. Hepatobiliary and Pancreatic Enhanced Recovery After Surgery Case Discussions. April 29, 2017. Invited (Presented twice)

Faculty. *Milestones in Anesthesia*. Society for Simulation in Health Care Anesthesia Section Webinar. September 15, 2016. Invited

Faculty. *Incorporating Standardized Patients into a Milestones Based OSCE*. Expert Panel at the 16th International Meeting for Simulation in Healthcare. San Diego, CA. January 18, 2016. Invited

Moderator and Lead Speaker. *Assesment of ACGME Milestones Using Simulation: Multi-Institutional Perspectives*. Expert Panel at the 15th International Meeting for Simulation in Healthcare. New Orleans, LA. January 13, 2015. Invited

Faculty. UNC-Chapel Hill Carolina Covenant Health Care Professions Seminar. Chapel Hill, NC. January 16, 2013. Invited

Other products of scholarship:

Online Learning Modules

Martinelli SM, Chen F, Chidgey BA, Zvara DA, **Isaak RS**. Simulation exercise improved family understanding and support of anesthesia providers. STEPS Forward. April 2. Accessed April 9, 2020. <https://edhub.ama-assn.org/steps-forward/module/2763263>

Isaak R, Balfanz G, Serrano R, Stiegler M. Neuraxial Management of the Obstetric Patient. In: *Access Anesthesiology Virtual*

Cases. <http://accessanesthesiology.mhmedical.com/MultimediaPlayer.aspx?MultimediaID=8830255> McGraw-Hill Education. Published November 2014.

Newsletters

Chen, F., Martinelli, S., **Isaak, R.** *The Highlights of the SEA 2020 Fall Meeting.* SEA Winter 2020 Newsletter.

Martinelli, S., **Isaak, R.**, Chen, F., *2020 SEA Fall Meeting: 2020 SEA Fall Meeting Preview: Advancing Your Educational Scholarship.* SEA Fall 2020 Newsletter.
[Article Link](#)

Martinelli, S., **Isaak, R.** *Take Your Child to ANESTHESIOLOGY 2019.* [ASA Monitor.](#) 9, 2019. Vol. 81, 34-35.

Isaak, R., Martinelli, S., *Take Your Child to Work.* The Anesthesiology Annual Meeting Newsletter, October 19, 2019. [Article Link](#)

Recordings

Isaak, R. *Perioperative Management of Pulmonary Embolism* Audio-Digest Anesthesiology, Vol 61, Issue 19, May 21, 2019
http://legacy.audio-digest.org/adfwebcasts/mp3/AN6119/an6119_1.mp3

Isaak, R. *Goal-Directed Fluid Therapy and Dynamic Indices of Management* Audio-Digest Anesthesiology, Vol 61, Issue 07, Feb 21, 2019 <http://legacy.audio-digest.org/adfwebcasts/mp3/AN6107/an6107.mp3>

Isaak, R. *The 5 Most Important Journal Articles of the Year in Anesthesiology.* Audio-Digest Anesthesiology, Vol 59, Issue 43, Nov 21, 2017.

http://legacy.audio-digest.org/adfwebcasts/mp3/AN5943/an5943_1.mp3

Isaak, R. *Anaphylaxis and Anaphylactoid Reactions: Myths, Facts and Treatment Recommendations.* Audio-Digest Anesthesiology, Vol 56, Issue 38 Oct 14, 2014
http://legacy.audio-digest.org/adfwebcasts/mp3/AN5638/an5638_1.mp3

University of North Carolina Department of Anesthesiology Residency Objective Structured Clinical Exam (OSCE) Scenarios:

Eskildsen., **Isaak, R.** (April 2021) – *Interpersonal and Communication Skills 2 – Disruptive Resident.* University of North Carolina, Chapel Hill, NC

Isaak, R. (October 2019) – *Patient Care 10–Interpretation of Ultrasound – Upper and Lower Extremity Nerve Blocks*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (October 2019) – *Professionalism 2 – Jehovah’s Witness Post Cardiac Surgery*. University of North Carolina, Chapel Hill, NC.

Eskildsen., **Isaak, R.** (October 2019) – *Interpersonal and Communication Skills 1 – Cardiac Clearance*. University of North Carolina, Chapel Hill, NC

McDaniel, M., **Isaak, R.** (April 2019) – *Interpersonal and Communication Skills 1 – Pediatric Regional Anesthesia*. University of North Carolina, Chapel Hill, NC.

Smith, K., **Isaak, R.** (April 2019) – *Interpersonal and Communication Skills 1 – OB Spinal Dose Error*. University of North Carolina, Chapel Hill, NC.

Martinelli, S., **Isaak, R.** (April 2019) – *Interpersonal and Communication Skills 2 – Case Cancellation – New Onset A-Fib*. University of North Carolina, Chapel Hill, NC.

Arora, H., **Isaak, R.** (April 2019) – *Patient Care 10–Interpretation of Ultrasound – TEE and Brachial Plexus Block*. University of North Carolina, Chapel Hill, NC.

Martinelli, S., **Isaak, R.** (October 2018) – *Patient Care 1 – Informed Consent for Regional Anesthesia*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (October 2018) – *Interpersonal and Communication Skills 2 – Critically Ill Outpatient Endoscopy*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (October 2018) – *Problem Based Learning and Improvement 1 – Quality Improvement for PACU Length of Stay*. University of North Carolina, Chapel Hill, NC.

Arora, H., **Isaak, R.** (October 2018) – *Patient Care 10–Interpretation of Ultrasound – Axillary Nerve Block and Lung Ultrasound*. University of North Carolina, Chapel Hill, NC.

Martinelli, S., **Isaak, R.** (April 2018) – *Patient Care 1 – Informed Consent for an Awake Fiberoptic Intubation*. University of North Carolina, Chapel Hill, NC.

McDaniel, M., **Isaak, R.** (April 2018) – *Interpersonal and Communication Skills 2 – Treatment Options for Pediatric Jehovah’s Witness*. University of North Carolina, Chapel Hill, NC.

Eskildsen, J., **Isaak, R.** (April 2018) – *Interpersonal and Communication Skills 1 - Robotic Surgery for Patient with Severe Pulmonary Disease*. University of North Carolina, Chapel Hill, NC.

Bhatia, M., **Isaak, R.** (April 2018) – *Professionalism 2 – Anesthesia Care Team Model Discussion*. University of North Carolina, Chapel Hill, NC.

Smith, K., **Isaak, R.** (April 2018) – *Interpersonal and Communication Skills 1 – Medication Error Disclosure in Laboring Patient*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (April 2018) – *Patient Care 10–Interpretation of Ultrasound*. University of North Carolina, Chapel Hill, NC.

Martinelli, S., **Isaak, R.** (November 2017) – *Patient Care 1 – Informed Consent for Central Line Placement*. University of North Carolina, Chapel Hill, NC.

McDaniel, M., **Isaak, R.** (November 2017) – *Interpersonal and Communication Skills 2 – NPO Violation*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (November 2017) – *Patient Care 9 –Transesophageal Echocardiography Interpretation*. University of North Carolina, Chapel Hill, NC.

Eskildsen, J., **Isaak, R.** (November 2017) – *Professionalism 2 –Preop Do-Not-Resuscitate Order Discussion*. University of North Carolina, Chapel Hill, NC.

Bhatia, M., **Isaak, R.** (November 2017) – *Patient Care 4 – Postoperative Pneumothorax*. University of North Carolina, Chapel Hill, NC.

Kazemi, A., **Isaak, R.** (November 2017) – *Problem Based Learning and Improvement 3 – Quality Improvement in Regional Anesthesia*. University of North Carolina, Chapel Hill, NC.

Arora, H., **Isaak, R.** (November 2017) – *Patient Care 10–Interpretation of Ultrasound*. University of North Carolina, Chapel Hill, NC.

Bhatia, M., **Isaak, R.** (April 2017) – *Professionalism 2 – ICU Care of a Jehovah's Witness*. University of North Carolina, Chapel Hill, NC.

Redmon, B., **Isaak, R.** (April 2017) – *Interpersonal and Communications Skills 2 – Placenta Previa Blood Management*. University of North Carolina, Chapel Hill, NC.

Arora, H., **Isaak, R.** (April 2017) – *Patient Care 9 – Interpretation of Monitors*. University of North Carolina, Chapel Hill, NC.

Eskildsen, J., **Isaak, R.** (April 2017) – *Patient Care 4 – Management of Interscalene Catheter Complication*. University of North Carolina, Chapel Hill, NC.

Isaak, R., (April 2017) – *Interpersonal and Communications Skills 1- Epidural Consent for Whipple Surgery* University of North Carolina, Chapel Hill, NC.

Arora, H., **Isaak, R.** (April 2017) – *Patient Care 10 – Application of Ultrasonography*. University of North Carolina, Chapel Hill, NC.

McDaniel, M., **Isaak, R.** (April 2017) – *Problem Based Learning and Improvement – Incorporation of PSQI into Personal Practice*. University of North Carolina, Chapel Hill, NC.

Eskildsen, J., **Isaak, R.** (November 2016) – *Patient Care 1 – Ectopic Pregnancy*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (November 2016) – *Patient Care 9 – Intraoperative Critical Events*. University of North Carolina, Chapel Hill, NC.

Stiegler, M., **Isaak, R.** (November 2016) – *Professionalism 2 – Non-harmful Error Disclosure*. University of North Carolina, Chapel Hill, NC.

McDaniel, M., **Isaak, R.** (November 2016) – *Patient Care 2; Interpersonal and Communications Skills 1 – Prior Cardiac Arrest*. University of North Carolina, Chapel Hill, NC.

Redmon, B., **Isaak, R.** (November 2016) – *Practice Based Learning and Improvement 4 – Labor Analgesia Treatment Options*. University of North Carolina, Chapel Hill, NC.

Bhatia, M., **Isaak, R.** (November 2016) – *Patient Care 9 – Hemodynamic Instability*. University of North Carolina, Chapel Hill, NC.

Nichols, K., **Isaak, R.** (November 2016) – *Interpersonal and Communication Skills 2 – Disruptive Physician*. University of North Carolina, Chapel Hill, NC.

Stiegler, M., **Isaak, R.** (May 2016) – *Patient Care 5; Interpersonal and Communication Skills 2 – Intraoperative Pneumothorax*. University of North Carolina, Chapel Hill, NC.

Nichols, K., **Isaak, R.** (May 2016) – *Patient Care 5; Interpersonal and Communication Skills 2 – Emergency Airway*. University of North Carolina, Chapel Hill, NC.

Redmon, B., **Isaak, R.** (May 2016) – *Patient Care 6; Interpersonal and Communication Skills 1 – Outpatient Endoscopy Consent*. University of North Carolina, Chapel Hill, NC.

Redmon, B., **Isaak, R.** (May 2016) – *Professionalism 2: ICU Futility of Care*. University of North Carolina, Chapel Hill, NC.

McDaniel, M., **Isaak, R.** (May 2016) – *Professionalism 4, Interpersonal and Communication Skills 2 – Medical Error Disclosure*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2016) – *Patient Care 8, 9, 10 - Anesthesiology Procedures*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (December 2015). *Patient Care 7, 9, 10 - Ultrasound Anatomy*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (December 2015). *Patient Care 5: Maternal Cardiac Arrest*. University of North Carolina, Chapel Hill, NC.

Nichols, K., **Isaak, R.** (December 2015) – *Patient Care 5 - Evaluating and Managing Acute on Chronic Pain in the PACU*. University of North Carolina, Chapel Hill, NC.

McDaniel, M., **Isaak, R.** (December 2015). *Interpersonal and Communication Skills 1, Patient Care 5: Preoperative Anxiety and Laryngospasm*. University of North Carolina, Chapel Hill, NC.

Redmon, B., **Isaak, R.** (December 2015). *Interpersonal and Communication Skills 2, Patient Care 9 - Hypoxia Artifact and Conflict Resolution*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2015). *Interpersonal and Communication Skills 2.1 - Needle Stick Management*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2015). *Interpersonal and Communication Skills 2.2 - Intensive Care Unit Handoff of Care*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2015). *Patient Care 4 - PACU Complication – Dental Injury*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2015). *Patient Care 6 - Urgent Intubation*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2015). *Patient Care 8.2. - One-Lung Ventilation*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (May 2015). *Patient Care 9 - Hypoxia and Oxygen Calibration*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (January 2015). *Professionalism 1 - Jehovah's Witnesses and Blood Management*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (January 2015). *Professionalism 1.2 - Managing a Drug Seeking Patient*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (January 2015). *Interpersonal and Communication Skills 1 - Do Not Resuscitate Issues*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (January 2015). *Patient Care 8.1 - Can't Intubate, Can't Ventilate*. University of North Carolina, Chapel Hill, NC.

Isaak, R. (January Jan 2015). *Patient Care 5 - Crisis Management: Trauma Resuscitation*. University of North Carolina, Chapel Hill, NC.

Teaching Activities:

Course Director:

June 18-22, 2023	Carolina Refresher Course: 34 th Annual Update in Anesthesiology, Pain & and Critical Care Medicine: Director.
September 10 , 2022	UNC Department of Anesthesiology New Anesthesiology Resident Family Anesthesia Simulation Day Co-Director (72 participants) -
August 28, 2021	UNC Department of Anesthesiology New Anesthesiology Resident Family Anesthesia Simulation Day Co-Director (61 participants) - Virtual
April 17, 2021	UNC School of Medicine Application Phase Students Family Anesthesia Simulation Day Co-Director (70 participants) - Virtual
August 22, 2020	UNC Department of Anesthesiology New Anesthesiology Resident Family Anesthesia Simulation Day Co-Director (65 participants) - Virtual
February 2, 2020	UNC Department of Anesthesiology Family Anesthesia Simulation Day Co-Director (75 participants)
August 24, 2019	UNC Department of Anesthesiology New Anesthesiology Resident Family Anesthesia Simulation Day Co-Director (60 participants)
August 25, 2018	UNC Department of Anesthesiology New Anesthesiology Resident Family Anesthesia Simulation Day Co-Director (55 participants)
August 26, 2017	UNC Department of Anesthesiology New Anesthesiology Resident Family Anesthesia Simulation Day Co-Director (60 participants)
April 22, 2017	UNC Department of Anesthesiology Family Anesthesia Simulation Day Co-Director (105 participants)
February 2015	UNC Department of Anesthesiology Didactic Block Coordinator: <i>Physics and Monitors.</i>

October 2012 UNC Department of Anesthesiology Didactic Block Coordinator:
Hematology

Lectures to UNC Medical Students:

May 30, 2019 *Basics of Induction of Anesthesia and Airway Management*
March 19, 2018 *Crisis Resource Management for the New Physician*
December 5, 2018 *Central Venous Access – Indications, Complications, and Task
Training*
October 1, 2018 *Fluid and Blood Management*
September 12, 2018 *Fluid and Blood Management*
August 8, 2018 *Fluid and Blood Management*
May 10, 2018 *Fluid and Blood Management*
March 22, 2018 *Crisis Resource Management for the New Physician*
March 13, 2018 *CAPSTONE Workshop - Introduction to Basic Airway
Management*
March 12, 2018 *CAPSTONE Workshop - Introduction to Basic Airway
Management*
January 25, 2018 *Regional Anesthesia – Indications, Complications, and Task
Training*
November 2, 2017 *Central Venous Access – Indications, Complications, and Task
Training*
August 24, 2017 *Regional Anesthesia – Indications, Complications, and Task
Training*
August 17, 2017 *Neuraxial Anesthesia – Indications, Complications, and Task
Training*
May 8, 2017 *Central Venous Access – Indications, Complications, and Task
Training*
May 18, 2017 *Fluid and Blood Management*
April 19, 2017 *Crisis Resource Management for the New Physician*
March 15, 2017 *Fluid and Blood Management*
January 25, 2017 *Fluid and Blood Management*
January 23, 2017 *Central Venous Access – Indications, Complications, and Task
Training*
November 10, 2016 *Fluid and Blood Management*
August 1, 2016 *Central Venous Access – Indications, Complications, and Task
Training*
May 2, 2016 *Epidurals and Spinals – Indications, Complications, and Task
Training*
March 21, 2016 *Epidurals and Spinals – Indications, Complications, and Task
Training*
January 11, 2016 *Central Venous Access – Indications, Complications, and Task
Training*
October 12, 2015 *Central Venous Access – Indications, Complications, and Task
Training*
March 12, 2014 *Fluid and Blood Management*

February 11, 2014 *Fluid and Blood Management*
 January 14, 2014 UNC School of Medicine "Brain and Behavior" Lecture Block.
Inhalational Anesthetics, Neuromuscular Blockers, Local Anesthetics, IV Sedation Medications, and Malignant Hyperthermia. – Attendees:
 Second year medical student class.
 January 10, 2014 *Fluid and Blood Management*
 November 22, 2013 *Fluid and Blood Management*
 October 25, 2013 *Fluid and Blood Management*
 September 19, 2013 *Fluid and Blood Management*
 August 9, 2013 *Fluid and Blood Management*
 May 10, 2013 *Fluid and Blood Management*
 April 5, 2013 *Fluid and Blood Management*
 March 8, 2013 *Fluid and Blood Management*
 February 8, 2013 *Fluid and Blood Management*
 November 5, 2012 *Fluid and Blood Management*
 October 8, 2012 *Fluid and Blood Management*
 September 20, 2012 *Fluid and Blood Management*

Lectures to UNC Department of Anesthesiology Residents:

January, 30 2023 Advanced Board Prep: *Hepatic Disease*
 January 19, 2023 Oral Boards Review Course: *Overview and Tips for Success*
 November 18, 2021 OSCE Theory and Tips for Success
 November 15, 2021 Anatomy of an ABA Oral Board Exam
 October 7, 2021 Basic Point-of-Care Ultrasound Series: Focused Assessed
 Transthoracic Echocardiography (FATE) Views
 April 19, 2021 Case Conference Series: Residual Neuromuscular Blockade
 February 2, 2021 Advanced Board Prep: *Hepatic Disease*
 December 4, 2020 OSCE Theory and Tips for Success
 December 17, 2018 Structured Oral Exam Demonstration
 December 5, 2018 Introduction to Point of Care Ultrasound
 November 18, 2018 Simulation in Medical Education
 September 20, 2018 Introduction to Point of Care Ultrasound
 September 18, 2018 Advanced Board Prep: *Hepatic Disease*
 May 24, 2018 Introduction to Point of Care Ultrasound
 March 29, 2018 Introduction to Point of Care Ultrasound
 February 22, 2018 Introduction to Point of Care Ultrasound
 November 17, 2017 Simulation in Medical Education
 January 26, 2017 Oral Boards Review Course: *Vascular Anesthesia*
 September 20, 2016 Advanced Board Prep: *Hepatic Disease*
 April 19, 2016 Thoracic Anesthesia Workshop
 January 7, 2016 Oral Boards Review Course: *Vascular Anesthesia*
 January 29, 2015 Oral Boards Review Course: *Neurosurgical Anesthesia*
 October 24, 2014 Transesophageal Echocardiography Review Series. *Left Ventricular Dysfunction*

May 9, 2014 Transesophageal Echocardiography Review Series. *TEE Artifacts*
 May 27, 2014 Anesthesiology Board Review Lectures Series: *Transfusions*.
 January 31, 2014 Transesophageal Echocardiography Review Series: *Transesophageal Echocardiography for Non-cardiac Surgery*
 January 13, 2014 Break Out Session: *Kidney Injury in Endovascular Aortic Surgery*
 November 11, 2013 Break Out Session: *Liver Transplantation*.
 May 20, 2013 Journal Club: *Carcinoid Syndrome*
 March 14, 2013 Oral Boards Review Course: *Vascular Anesthesia*
 November 10, 2012 Break Out Session: *Liver Transplantation*
 November 1, 2012 Journal Club: *Prothrombin Complex Concentrates*
 February 9, 2012 Residency Didactic Lecture Series: *Renal Physiology*
 November 29, 2011 Residency Didactic Lecture Series: *The Posterior Fossa*
Lectures to UNC Residents – Non-Anesthesiology:

August 3, 2017 Thoracic Surgery Workshop
 January 23, 2017 Open Abdominal Aortic Aneurysm Crisis Resource Management
 September 13, 2016 Surgery Interns Airway Skills

UNC Department of Anesthesiology Resident Critical Event Management Simulation Sessions:

October 18, 2022 Venous Air Embolism, Anaphylaxis, Myocardial Ischemia (3 hours)
 September 6, 2022 Local Anesthetic Toxicity , Anaphylaxis, Myocardial Ischemia (3 hours)
 January 12, 2022 Venous Air Embolism, Anaphylaxis, Myocardial Ischemia (3 hours)
 December 14, 2021 Amniotic Fluid embolism, Local Anesthetic Toxicity, Myocardial Ischemia (3 hours)
 December 7, 2021 Amniotic Fluid embolism, Local Anesthetic Toxicity, Myocardial Ischemia (3 hours)
 October 26, 2021 Anaphylaxis, Local Anesthetic Toxicity, Myocardial Ischemia (3 hours)
 May 10, 2021 Venous Air Embolism, Can't Intubate/Can't Ventilate, Transfusion Reaction (3 hours)
 February 23, 2021 Venous Air Embolism, Local Anesthetic Toxicity, Transfusion Reaction (3 hours)
 December 1, 2020 Myocardial Ischemia, Preeclampsia, Malignant Hyperthermia (3 hours)
 September 15, 2020 Myocardial Ischemia, Venous Air Embolism, Malignant Hyperthermia (3 hours)
 February 25, 2020 Anaphylaxis, Local Anesthetic Toxicity, Transfusion Reaction (3 hours)
 September 17, 2019 Myocardial Ischemia, Pre-Eclampsia, Transfusion Reaction (3 hours)
 May 30, 2019 Can't Intubate/Can't Ventilate (CICV)Anaphylaxis, Venous Air Embolism (4 hours)

February 1, 2019	Myocardial Ischemia, Anaphylaxis, Malignant Hyperthermia (4 hours)
December 6, 2018	Myocardial Ischemia, Amniotic Fluid Embolism Local Anesthetic Toxicity (4 hours)
January 25, 2018	Venous Air Embolism, High Spinal, Anaphylaxis (4 hours)
November 2, 2017	Venous Air Embolism, High Spinal, Anaphylaxis (4 hours)
October 17, 2017	Transfusion Reaction, Can't Intubate/Can't Ventilate (CICV) and Anaphylaxis (4 hours)
August 24, 2017	Machine/Electrical Failure, High Spinal, Myocardial Ischemia (4 hours)
August 17, 2017	Anaphylaxis, High Spinal, Myocardial Ischemia (4 hours)
May 8, 2017	Anaphylaxis, Can't Intubate/Can't Ventilate (CICV), Myocardial Ischemia (4 hours)
January 23, 2017	Myocardial Ischemia, Rhabdomyolysis, Local Anesthetic Toxicity (4 hours)
October 31, 2016	Myocardial Ischemia, Can't Intubate/Can't Ventilate (CICV) Local Anesthetic Toxicity (4 hours)
August 1, 2016	Myocardial Ischemia, Can't Intubate/Can't Ventilate (CICV) Malignant Hyperthermia (4 hours)
May 2, 2016	Severe Preeclampsia, Venous Air Embolism, High Spinal (4 hours)
March 21, 2016	Machine/Electrical Failure, Venous Air Embolism, High Spinal (4 hours)
January 11, 2016	Venous Air Embolism, Can't Intubate/Can't Ventilate (CICV) and Anaphylaxis (4 hours)
November 23, 2015	Anaphylaxis, Amniotic Fluid Embolism, Rhabdomyolysis (4 hours)
October 12, 2015	Machine/Electrical Failure, Severe Preeclampsia, and Intraoperative Myocardial Infarction (4 hours)
April 13, 2015	Machine/Electrical Failure, High Spinal, and Intraoperative Myocardial Infarction (4 hours)
March 23, 2015	Machine/Electrical Failure, High Spinal, and Amniotic Fluid Embolism (4 hours)
January 26, 2015	Supraventricular Tachycardia, Malignant Hyperthermia, and Intracranial Hypertension (4 hours)
December 15, 2014	Can't Intubate/Can't Ventilate (CICV), Severe Preeclampsia, and Transfusion Reaction (4 hours)
September 29, 2014	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
September 22, 2014	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
August 25, 2014	Uterine Atony, Pediatric Anaphylaxis, and Myocardial Infarction (4 hours)
July 28, 2014	Supraventricular Tachycardia, Malignant Hyperthermia, and Intracranial Hypertension (4 hours)
May 12, 2014	Can't Intubate/Can't Ventilate (CICV), Severe Preeclampsia, and Transfusion Reaction (4 hours)

May 5, 2014	Uterine Atony, Pediatric Anaphylaxis, and Myocardial Infarction (4 hours)
April 7, 2014	Tricyclic Antidepressant (TCA) Overdose, Autonomic Hyperreflexia, and Amniotic Fluid Embolism
March 24, 2014	Uterine Atony, Pediatric Anaphylaxis, and Myocardial Infarction (4 hours)
March 3, 2014	Supraventricular Tachycardia, Malignant Hyperthermia, and Intracranial Hypertension (4 hours)
December 9, 2013	Tricyclic Antidepressant (TCA) Overdose, Autonomic Hyperreflexia, and Amniotic Fluid Embolism
November 25, 2013	Can't Intubate/Can't Ventilate (CICV), Severe Preeclampsia, and Transfusion Reaction (4 hours)
November 11, 2013	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
October 21, 2013	Supraventricular Tachycardia, Malignant Hyperthermia, and Intracranial Hypertension (4 hours)
October 7, 2013	Uterine Atony, Pediatric Anaphylaxis, and Myocardial Infarction (4 hours)
September 16, 2013	Supraventricular Tachycardia, Malignant Hyperthermia, and Intracranial Hypertension (4 hours)
September 9, 2013	Can't Intubate/Can't Ventilate (CICV), Severe Preeclampsia, and Transfusion Reaction (4 hours)
August 5, 2013	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
July 22, 2013	Uterine Atony, Pediatric Anaphylaxis, and Myocardial Infarction (4 hours)
June 17, 2013	Autonomic Hyperreflexia, Severe Preeclampsia, and Anaphylaxis (4 hours)
May 23, 2013	Tricyclic Antidepressant (TCA) Overdose, Autonomic Hyperreflexia, and Amniotic Fluid Embolism
April 1, 2013	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
January 8, 2013	Tricyclic Antidepressant (TCA) Overdose, Autonomic Hyperreflexia, and Amniotic Fluid Embolism
December 13, 2012	Supraventricular Tachycardia, Malignant Hyperthermia, and Intracranial Hypertension (4 hours)
September 18, 2012	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
August 20, 2012	Can't Intubate/Can't Ventilate (CICV), Severe Preeclampsia, and Transfusion Reaction (4 hours)
May 24, 2012	Myocardial Infarction, Massive Resuscitation, and Pediatric Anaphylaxis (4 hours)
April 19, 2012	Uterine Atony, Pediatric Anaphylaxis, and Myocardial Infarction (4 hours)
March 26, 2012	Autonomic Hyperreflexia, Severe Preeclampsia, and Anaphylaxis (4 hours)

February 23, 2012	Tricyclic Antidepressant (TCA) Overdose, Autonomic Hyperreflexia, and Amniotic Fluid Embolism (4 hours)
January 24, 2012	Can't Intubate/Can't Ventilate (CICV), Severe Preeclampsia, and Transfusion Reaction (4 hours)

UNC Department of Anesthesiology New Resident "Bootcamp" - Simulation Sessions:

June 8, 2017	Procedural Task Trainers (8 hours)
May 23, 2016	Procedural Task Trainers (8 hours)
May 29, 2015	Procedural Task Trainers (8 hours)
July 28, 2014	Oxygenation and Ventilation (2 hours)
June 16, 2014	Oxygenation and Ventilation (2 hours)
June 20, 2013	Oxygenation and Ventilation (2 hours)
May 31, 2013	Oxygenation and Ventilation (2 hours)

Grand Rounds at the University of North Carolina

January 9, 2020	<i>Building an OSCE Program for Evaluating ACGME Milestones.</i> University of North Carolina Academy of Educators. Chapel Hill, NC. Invited
October 30, 2019	<i>Intraoperative Pulmonary Embolism: Application of Emerging Diagnostic and Treatment Options,</i> UNC Department of Anesthesiology Grand Rounds
July 31, 2019	<i>Anesthesiology Residency at UNC: An Overview,</i> UNC Department of Anesthesiology Grand Rounds
August 1, 2018	<i>Unexpected Difficult Airway Management,</i> PBLD, UNC Department of Anesthesiology Grand Rounds
August 2, 2017	<i>CAPSEL: Simulation Activities in Anesthesiology</i> UNC Department of Anesthesiology Grand Rounds
May 31, 2016	<i>A Primer for Liver Transplantation,</i> UNC Department of Anesthesiology Grand Rounds
May 19, 2016	<i>A Primer for Liver Transplantation,</i> UNC Department of Anesthesiology Technicians Grand Rounds
August 19, 2015	<i>Enhanced Recovery After Surgery: Expert Panel,</i> Panel Moderator, UNC Department of Anesthesiology Grand Rounds

May 13, 2015 *Enhanced Recovery After Surgery: Pancreatic Surgery Outcomes.*
UNC Department of Anesthesiology Grand Rounds

January 7, 2015 *Enhanced Recovery After Surgery (ERAS) at UNC.* UNC
Perioperative Nursing Grand Rounds.

November 20, 2013 *Regional vs. General for Vascular Anesthesia: Expert Panel.* UNC
Department of Anesthesiology Grand Rounds

February 6, 2013 *Acute Anaphylactoid Reactions,* UNC Department of
Anesthesiology Grand Rounds

November 7, 2012 *Intraoperative Tension Pneumothorax.* UNC Department of
Anesthesiology Grand Rounds

September 5, 2012 *Acute Postoperative Respiratory Failure.* UNC Department of
Anesthesiology Grand Rounds

July 25, 2012 *Dynamic Indices for Fluid Management in Mechanically
Ventilated Patients.* UNC Department of Anesthesiology Grand
Rounds

Visiting Professor/Grand Rounds – Outside University of North Carolina

May 10, 2023 *Anesthesiology Learners and Luddites in the 21st Century.* Beth Israel
Deaconess Medical Center, Harvard Medical School, Boston, MA.
Visiting Professor.

May 9, 2023 *All in a Day's Work: A Career in Medical Education.* Workshop. Beth
Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.
Visiting Professor.

September 8, 2022 *To Infinity and Beyond! Challenges of Care During Commercial Flights
and Interplanetary Spaceflight.* Thomas Jefferson University,
Department of Anesthesiology, Philadelphia, PA, Grand Rounds.
Invited.

December 8, 2021 *Time Will Tell: The Academic Performance Assessment Worksheet.*
Visiting Professor. Dalhousie University, Halifax, Nova Scotia, Canada.

November 18, 2021 *Enhanced Recovery After Surgery Pathways: Design, Implementation,
and Sustainability.* Visiting Professor. Department of Perioperative
Services. FirstHealth Moore Regional Hospital, Pinehurst, NC.

- November 18, 2021 *Enhanced Recovery After Surgery Pathways for Obstetrical and Gynecological Surgery*. Visiting Professor. Department of Obstetrics and Gynecology, FirstHealth Moore Regional Hospital, Pinehurst, NC.
- April 11, 2018 *Objective Structured Clinical Exams for Anesthesiology Residency Programs: Innovative Method for Assessing ACGME Milestones*. Rutgers New Jersey Medical School, Department of Anesthesiology, Newark, NJ. Grand Rounds. Invited
- April 10, 2018 *Perioperative Point of Care Ultrasound*. Rutgers New Jersey Medical School, Department of Anesthesiology, Newark, NJ. Introduction to Point of Care Ultrasound Journal Club. Invited
- June 19, 2017 *Innovations in Experiential Learning: Moving Beyond Traditional Simulation Curriculum*. Cornell University, Department of Anesthesiology, New York, NY. Grand Rounds. Invited
- July 28, 2016 *Objective Structured Clinical Exams for Resident Milestones Assessment*. Thomas Jefferson University, Department of Anesthesiology, Philadelphia, PA, Grand Rounds. Invited.
- August 26, 2015 *Enhanced Recovery After Surgery: Multi-Specialty Perspectives*, Panel Moderator, MD Anderson Cancer Center, Department of Anesthesiology, Houston, Texas, Grand Rounds. Invited.
- August 5, 2015 *Perioperative Challenges of Liver Transplantation*. University of Kentucky, Department of Anesthesiology, Lexington, Kentucky, Grand Rounds. Invited.
- August 4, 2015 *Lumbar CSF Drains for Endovascular Surgery: Indications, Risks, and Complications*. University of Kentucky, Department of Anesthesiology, Lexington, Kentucky, Journal Club. Invited.
- June 17, 2015 *Blood Conservation and Coagulation Management*. Meijer Heart and Vascular Institute, Grand Rapids, Michigan. Grand Rounds. Invited
- June 16, 2015 *Enhanced Recovery After Surgery: Keys to Implementation and Sustainability*, West Michigan Anesthesia, Grand Rapids Michigan, Journal Club. Invited

Continuing Education Lecture - Outside UNC:

- May 22-25, 2023 Topics in Anesthesia. Northwest Anesthesia Seminars. Sea Island, GA (7 hours of lectures). Invited. (1) *Seeing is Believing: Point of Care Ultrasound* (2) *Anesthetic Considerations for Endovascular Surgery*:

EVARs, FEVARs, and TEVARs, (3) Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions; (4) Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology, (5) What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers, (6) Advances in the Practice of Anesthesiology: Gameshow Style!! (7) Perioperative Pulmonary Embolism Management.

- March 25, 2023 *Anesthesiology Learners and Luddites in the 21st Century*. Association of Anesthesia Clinical Directors (AACD) Perioperative Leadership Summit. Orlando, FL. Invited.
- March 19, 2023 *To Infinity and Beyond! Challenges of Care During Commercial Flights and Interplanetary Spaceflight*. American Osteopathic College of Anesthesiology, Mid-Year Seminar, Chicago, IL (Keynote Speaker). Invited.
- Feb. 12-27, 2023 Current Topics in Anesthesia. Northwest Anesthesia Seminars. Punta Cana, Dominican Republic. (7 hours of lectures). Invited.
(1) Goal Directed Fluid Therapy: Dynamic Indices for Fluid Management (2) Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs, (3) Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions; (4) Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology, (5) What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers, (6) To Infinity and Beyond! Challenges of Care During Commercial Flights and Interplanetary Spaceflight, (7) Perioperative Pulmonary Embolism Management
- October 23-28, 2022 Relevant Topics in Anesthesia. Northwest Anesthesia Seminars. Maui, HI. (6 hours of lectures). *(1) Goal Directed Fluid Therapy: Dynamic Indices for Fluid Management (2) Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs, (3) Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions; (4) Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology, (5) What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers, (6) Advances in the Practice of Anesthesiology: Gameshow Style!!*
- May 18-21, 2022 Anesthesia Update. Northwest Anesthesia Seminars. Destin, FL. (7 Lectures) – *(1) To Infinity and Beyond! Challenges of Care During Commercial Flights and Interplanetary Spaceflight, (2) Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs, (3) Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions; (4) Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology, (5) What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers, (6)*

Perioperative Point of Care Ultrasound, (7) Perioperative Pulmonary Embolism Management

January 24-27, 2022 Topics in Anesthesia Live Webinar (4 Lectures) – (1) *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions;* (2) *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology,* (3) *What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers,* (4) *Perioperative Pulmonary Embolism Management*

January 19-24, 2022 Current Topics in Anesthesiology. Northwest Anesthesia Seminars. Key Largo, FL. (7 Lectures) – (1) *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs,* (2) *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions;* (3) *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology,* (4) *Advances in Anesthesiology: Gameshow Style!,* (5) *What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers,* (6) *Perioperative Point of Care Ultrasound;* (7) *Perioperative Pulmonary Embolism Management*

November 2-5, 2021 Northwest Anesthesia Seminars Anesthesia Topics in Anesthesia: Providenciales, Turks and Caicos (7 Lectures) - (1) *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs,* (2) *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions;* (3) *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology,* (4) *Advances in Anesthesiology: Gameshow Style!,* (5) *What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers,* (6) *Liver Disease and Anesthesia: Perioperative Management of the Cirrhotic Patient;* (7) *Perioperative Pulmonary Embolism Management*

October 9, 2021 Introduction to Perioperative Point-of-Care Ultrasound and Transthoracic Echocardiography. American Society of Anesthesiologists Annual Meeting. San Diego, CA. Invited Faculty. Cancelled due to COVID restrictions.

Sept.27-30, 2021 Northwest Anesthesia Seminars Anesthesia Update. Amelia Island, Florida. (6 Lectures): (1) *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs;* (2) *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions;* (3) *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology;* (4) *Advances in Anesthesiology: Gameshow Style!;* (5) *What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers,* (6) *Perioperative Point of Care Ultrasound*

- September 25, 2021 *ERAS: What's New in Enhancing Recovery of Our Patients*. Panel Moderator and Speaker. American Osteopathic College of Anesthesiologists 69th Annual Convention and Conclave. West Palm Beach, FL. Invited.
- August 22, 2021 *Goal-Directed Fluid Therapy: Using Dynamic Indices of Fluid Management*. Northwest Anesthesia Seminars Topics in Anesthesia. Webinar.
- August 22, 2021 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars Topics in Anesthesia. Webinar.
- August 21, 2021 *Perioperative Pulmonary Embolism Management*. Northwest Anesthesia Seminars Topics in Anesthesia. Webinar.
- August 21, 2021 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions*. Northwest Anesthesia Seminars Topics in Anesthesia. Webinar.
- August 21, 2021 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars Topics in Anesthesia. Webinar.
- July 22, 2021 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.
- July 22, 2021 *What Would You Do?!?! Clinical Challenges and Conundrums Facing Anesthesia Providers*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.
- July 21, 2021 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.
- July 21, 2021 *Liver Disease and Anesthesia: Perioperative Management of the Cirrhotic Patient*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.
- July 20, 2021 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.
- July 19, 2021 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.

July 19, 2021	<i>Perioperative Pulmonary Embolism Management.</i> Northwest Anesthesia Seminars Current Topics in Anesthesia. Clearwater, Florida.
April 25, 2021	<i>Perioperative Point of Care Ultrasound.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
April 25, 2021	<i>Liver Disease and Anesthesia: Perioperative Management of the Cirrhotic Patient.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
April 24, 2021	<i>Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
April 24, 2021	<i>Perioperative Multimodal Analgesia Therapies.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
April 23, 2021	<i>Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
April 22, 2021	<i>Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
April 22, 2021	<i>Perioperative Pulmonary Embolism Management.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
Match 6, 2021	<i>Perioperative Point of Care Ultrasound.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
Match 6, 2021	<i>Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
Match 6, 2021	<i>Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
February 8, 2021	<i>Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology.</i> Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited

- February 8, 2021 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 8, 2021 *Goal-Directed Fluid Therapy: Using Dynamic Indices of Fluid Management.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 4, 2021 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 4, 2021 *Crisis Resource Management: Non-Technical Teamwork Skills for Emergencies.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 4, 2021 *Advances in Anesthesiology: Gameshow Style!.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 2, 2021 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 2, 2021 *Goal-Directed Fluid Therapy: Using Dynamic Indices of Fluid Management.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 1, 2021 *Perioperative Pulmonary Embolism Management* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- February 1, 2021 *Highway to the Danger Zone: Anesthesia for Posterior Fossa Surgery.* Northwest Anesthesia Seminars Topics in Anesthesia. Webinar. Invited
- December 19, 2020 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.* Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- December 19, 2020 *Perioperative Pulmonary Embolism Management.* Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- December 19, 2020 *Highway to the Danger Zone: Anesthesia for Posterior Fossa Surgery.* Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited

- December 18, 2020 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- December 18, 2020 *Perioperative Multimodal Analgesia Therapies*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- December 17, 2020 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- December 17, 2020 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- December 17, 2020 *Liver Disease and Anesthesia: Perioperative Management of the Cirrhotic Patient*. Northwest Anesthesia Seminars Current Topics in Anesthesia. Miami, Florida. Invited
- August 13, 2020 *Crisis Resource Management: Non-Technical Teamwork Skills for Emergencies*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 13, 2020 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 13, 2020 *Advances in Anesthesiology: Gameshow Style!*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 12, 2020 *Highway to the Danger Zone: Anesthesia for Posterior Fossa Surgery*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 12, 2020 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 12, 2020 *Perioperative Multimodal Analgesia Therapies*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 11, 2020 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
- August 11, 2020 *Liver Disease and Anesthesia: Perioperative Management of the Cirrhotic Patient*. Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited

August 11, 2020	<i>Goal-Directed Fluid Therapy: Using Dynamic Indices of Fluid Management.</i> Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
August 10, 2020	<i>Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.</i> Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
August 10, 2020	<i>Perioperative Blood Management and Conservation Strategies.</i> Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
August 10, 2020	<i>Perioperative Pulmonary Embolism Management.</i> Northwest Anesthesia Seminars: Topics in Anesthesia. Live Webinar. Invited
July 5, 2020	<i>Anesthesia for Vascular Surgery in the 21st Century,</i> Mexican College of Anesthesiologists 47 th Annual Refresher Course in Anesthesiology and Perioperative Medicine, Mexico City, Mexico. Podium Lecture. Invited. (Conference cancelled due to COVID-19)
July 5, 2020	<i>Innovative Applications of Simulation in Anesthesiology,</i> Mexican College of Anesthesiologists 47 th Annual Refresher Course in Anesthesiology and Perioperative Medicine, Mexico City, Mexico. Podium Lecture. Invited. . (Conference Cancelled due to COVID-19)
June 18, 2020	Perioperative Management of Acute Pulmonary Embolism. Carolina Refresher Course. Kiawah Island, South Carolina. (Conference Cancelled due to COVID-19)
June 14, 2020	Examining Dogmas in Anesthesiology. Carolina Refresher Course 2020. Kiawah Island, South Carolina. (Conference Cancelled due to COVID-19)
March 13, 2020	<i>Liver Disease and Anesthesia: Perioperative Management of the Cirrhotic Patient.</i> 47th Mid-Year Seminar for the American Osteopathic College of Anesthesiologists, Chicago, IL. Podium Lecture. Invited. Presented via live webinar
February 14, 2020	<i>Perioperative Point of Care Ultrasound.</i> Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited
February 14, 2020	<i>Perioperative Pulmonary Embolism Management.</i> Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited

- February 13, 2020 *Advances in the Practice of Anesthesiology: Gameshow Style!*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited
- February 13, 2020 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited
- February 13, 2020 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions Myths and Facts Regarding*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited
- February 9 2020 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited
- February 9 2020 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Punta Cana, Dominican Republic. Invited
- October 20, 2019 *Intraoperative Pulmonary Embolism: Application of Emerging Diagnostic and Treatment Options*. American Society of Anesthesiologists Annual Meeting. Orlando, FL. Invited
- September 22, 2019 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited
- September 22, 2019 *Perioperative Pulmonary Embolism Management*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited
- September 21, 2019 *Perioperative Multimodal Analgesia Techniques*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited
- September 21, 2019 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited
- September 20, 2019 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited

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- September 19, 2019 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.* Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited
- September 19, 2019 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management.* Northwest Anesthesia Seminars: Relevant Topics in Anesthesia, Hilton Head, SC. Invited
- June 5, 2019 *Perioperative Point of Care Ultrasound.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- June 5, 2019 *Perioperative Multimodal Analgesia Techniques.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- June 4, 2019 *Perioperative Pulmonary Embolism Management.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- June 4, 2019 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- June 4, 2019 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- June 3, 2019 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- June 3, 2019 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management.* Northwest Anesthesia Seminars: Topics in Anesthesia, Duck, NC. Invited
- April 12, 2019 *Perioperative Multimodal Analgesia Techniques.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Providenciales, Turks and Caicos. Invited
- April 11, 2019 *Perioperative Pulmonary Embolism Management.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Providenciales, Turks and Caicos. Invited
- April 9, 2019 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Providenciales, Turks and Caicos. Invited

- April 8, 2019 *Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology*. Northwest Anesthesia Seminars: Current Topics in Anesthesia, Providenciales, Turks and Caicos. Invited
- April 7, 2019 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs*. Northwest Anesthesia Seminars: Current Topics in Anesthesia, Providenciales, Turks and Caicos. Invited
- April 8, 2019 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management*. Northwest Anesthesia Seminars: Current Topics in Anesthesia, Providenciales, Turks and Caicos. Invited
- September 24, 2018 *Perioperative Pulmonary Embolism Management*. American Osteopathic College of Anesthesiologists 66th Annual Convention. San Diego, CA. Invited.
- September 24, 2018 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management*. American Osteopathic College of Anesthesiologists 66th Annual Convention. San Diego, CA. Invited.
- September 23, 2018 *Oral Exams - Assessing surgical technical skills in Initial Certification: How can we ensure physicians are ready to practice following residency?* American Board of Medical Specialties Annual Meeting Surgical Symposium. American Board of Anesthesiology Representative. Las Vegas, NV. Invited.
- August 15, 2018 *Perioperative Pulmonary Embolism Management*. Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited
- August 15, 2018 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited
- August 14, 2018 *Enhanced Recovery After Surgery Pathways: Design, Implementation, and Sustainability*. Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited
- August 14, 2018 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management*. Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited

- August 14, 2018 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.* Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited
- August 13, 2018 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions.* Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited
- August 13, 2018 *Perioperative Multimodal Analgesia Techniques.* Northwest Anesthesia Seminars: Clinical Topics in Anesthesia, Banff, Alberta, Canada. Invited
- June 9, 2018 *Perioperative Multimodal Analgesia Techniques.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- June 9, 2018 *Perioperative Pulmonary Embolism Management.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- June 9, 2018 *Perioperative Point of Care Ultrasound.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- June 8, 2018 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- June 8, 2018 *Enhanced Recovery After Surgery Pathways: Design, Implementation, and Sustainability.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- June 7, 2018 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- June 7, 2018 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs.* Northwest Anesthesia Seminars: Current Topics in Anesthesia, Washington, DC. Invited
- March 25, 2018 *Perioperative Multimodal Analgesia Techniques.* Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited

- March 25, 2018 *Perioperative Pulmonary Embolism Management*. Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited
- March 23, 2018 *Myths and Facts Regarding Perioperative Anaphylaxis and Anaphylactoid Reactions*. Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited
- March 23, 2018 *Perioperative Point of Care Ultrasound*. Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited
- March 23, 2018 *Enhanced Recovery After Surgery Pathways: Design, Implementation, and Sustainability*. Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited
- March 22, 2018 *Goal Directed Fluid Therapy: Using Dynamic Indices for Fluid Management*. Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited
- March 22, 2018 *Anesthetic Considerations for Endovascular Surgery: EVARs, FEVARs, and TEVARs*. Northwest Anesthesia Seminars: Topics in Anesthesia, Tucson, Arizona. Invited
- November 3, 2017 *Preparing Residents for OSCEs*. Podium Lecture. Society of Academic Associations of Anesthesiology and Perioperative Medicine (SAAAPM) 2017 Annual Meeting. Chicago, IL. Invited.
- September 23, 2017 *Introduction to Point-of-Care Ultrasound – Transthoracic Echocardiography*. Workshop. 10th Annual UNC-Duke-Wake Forest Pediatric Anesthesiology Conference: Best Practices in Pediatric Anesthesia Care. Chapel Hill, NC. Invited.
- September 23, 2017 *Point of Care Ultrasound for the Pediatric Patient*. Podium Lecture. 10th Annual UNC-Duke-Wake Forest Pediatric Anesthesiology Conference: Best Practices in Pediatric Anesthesia Care. Chapel Hill, NC. Invited.
- June 22, 2017 *Creating Pathways for Improvement at Your Institution Through Quality Improvement Methods*. Problem Based Learning Discussion. Carolina Refresher Course. Faculty Facilitator. Kiawah Island, SC. Invited
- June 22, 2017 *The 5 Most Important Journal Articles of the Year in Anesthesiology*. Carolina Refresher Course. Podium Lecture. Kiawah Island, SC. Invited

- April 29, 2017 *Real World Challenges: Hepatobiliary-Pancreatic Enhanced Recovery After Surgery Pathways: Annual Congress of Enhanced Recovery and Perioperative Medicine, Washington, D.C. Invited*
- April 29, 2017 *Interactive Case Discussion for Hepatobiliary-Pancreatic Enhanced Recovery After Surgery Pathways. Annual Congress of Enhanced Recovery and Perioperative Medicine, Washington, D.C. Invited*
- March 25, 2017 *Goal Directed Fluid Therapy and Cost Considerations. Podium Presentation. Quality Improvement to Enhance Recovery After Surgery Symposium. New York, NY – Invited*
- January 31, 2017 Professor: *Professor Rounds – Works in Progress Abstracts. International Meeting for Simulation 2017, Orlando, Florida. Invited.*
- December 6, 2016 *What's New in Liver Transplant? Case Presentation and Literature Review. UNC/Duke Liver Transplant Conference - Invited Speaker*
- October 16, 2016 *Goal Directed Fluid Therapy and Cost Considerations. Podium Presentation. Quality Improvement to Enhance Recovery After Surgery Symposium. Las Vegas, NV – Invited*
- August 27, 2016 *Anaphylaxis and Anaphylactoid Reactions: An Update for Anesthesiologists. West Virginia State Society of Anesthesiologists Annual Education Meeting, White Sulphur Springs, WV. Invited*
- August 27, 2016 *Enhanced Recovery After Surgery (ERAS): A Multidisciplinary Quality Improvement Initiative. West Virginia State Society of Anesthesiologists Annual Education Meeting, White Sulphur Springs, WV. Invited*
- June 24, 2016 *Creating Pathways for Improvement at Your Institution Through Quality Improvement Methods. Problem Based Learning Discussion. Carolina Refresher Course. Faculty Facilitator. Kiawah Island, SC. Invited*
- June 23, 2016 *Providing Expert Quality Care When You Are Not an Expert: Application of Crisis Resource Management Skills. Problem Based Learning Discussion. Carolina Refresher Course. Faculty Facilitator. Kiawah Island, SC. Invited*
- September 8, 2015 *Enhanced Recovery Pathways: Keys to Success and Sustainability. Piedmont Anesthesia Associates. Winston Salem, NC, Invited.*

June 26, 2015	<i>Anesthetic Challenges of Liver Transplantation: When Things Go Bump in the Night.</i> Problem Based Learning Discussion. Carolina Refresher Course. Faculty Facilitator. Kiawah Island, SC. Invited
September 2014	<i>Introduction to Transesophageal Echocardiography.</i> Workshop Faculty. Thoracic Surgery Directors Boot Camp. UNC Friday Center, Chapel Hill, NC, Invited
June 29, 2014	<i>Anaphylaxis and Anaphylactoid Reactions: Myths, facts and treatment.</i> Carolina Refresher Course. Podium Lecture. Kiawah Island, SC. Invited
June 21, 2013	<i>Introduction to Transesophageal Echocardiography.</i> Workshop Faculty. Thoracic Surgery Directors Boot Camp. UNC Friday Center, Chapel Hill, NC, Invited
June 14 & 15 2013	<i>Introduction to Transesophageal Echocardiography.</i> Workshop Faculty. Carolina Refresher Course. Asheville, NC, Invited
June 14 & 15 2013	<i>Problem Based Learning Discussion: Anesthesia for Endovascular Procedures.</i> Faculty Facilitator. Carolina Refresher Course Asheville, NC Invited
June 29, 2012	<i>Introduction to Transesophageal Echocardiography.</i> Workshop Faculty. Thoracic Surgery Directors Boot Camp. UNC Friday Center, Chapel Hill, NC, Invited

Future Planned Continuing Education Lectures - Outside UNC:

June 18, 2023	<i>Folklore, Fairy Tales, and Fantasy: Examining Dogmas in Anesthesiology.</i> Carolina Refresher Course, Kiawah Island, SC.
July 17-20, 2023	Topics in Anesthesia. Northwest Anesthesia Seminars. Hersey, PA. (7 hours of lectures). Invited.
Aug. 8- Sep. 1, 2023	Anesthesia Update. Northwest Anesthesia Seminars. Paris, France. (7 hours of lectures). Invited.

Resident Teaching/Mentorships: UNC Department of Anesthesiology

Team Based Quality Improvement Project: Project Coach

August 2022 – Current	UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Temperature Management for Endovascular Surgery, Project Coach
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- August 2018 – May 2019 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, ERAS for Renal Transplant Recipients, Project Coach
- August 2017 – May 2018 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Code Blue Team Clinician Roles, Project Coach
- August 2016 – May 2017 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Enhanced Recovery After Surgery for Major Limb Amputations, Project Coach

Team Based Quality Improvement Project: Faculty Mentor

- July 2018-May 2019 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium. Enhanced Recovery for Renal Transplant Recipients (Snow, L, Matthews, L, Spencer, C, Suggs, J). Third-Place Project Winner
- July 2017-May 2018 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium. *Who's Who in a Code Blue: A Quality Improvement Project to Improve Role Assignments in Critical Situations* (Sriram, N., Gue, J.) Third-Place Project Winner.
- July 2017-May 2018 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium. *A Simulation Study to Evaluate Improvements in PACU NSTEMI Response Following Implementation of a Clinical Pathway.* (Hill, A., Rose, K.)
- July 2016-May 2017 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Faculty Mentor (Heniser, E). *Securing Nerve Block Catheters for Acute Pain*
- July 2015 –April 2016 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Faculty Mentor (Marino, M). *Decreased PACU Time and Improved Postoperative Mental Status as a Result of an ERAS Clinical Pathway.*
- July 2014 –May 2015 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Faculty Mentor (Judd, B.). *Patient Outcomes Due to Implementation of a Patient Information Handout on Multimodal Anesthesia.*

- July 2013 – April 2014 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Faculty Mentor (Pasdar-Shirazi, F.), *The Development and Validation of a Patient Information Handout on Multimodal Anesthesia.*
- July 2012 – April 2013 UNC Department of Anesthesiology Team Based Quality Improvement Project and Research Symposium, Faculty Mentor (Dalal, N.), *Thromboelastography Usage and Analysis: Evidence Based Clinical Guidelines.*

Academic Medicine Rotation Projects: Faculty Mentor

- December 2021 UNC Department of Anesthesiology Academic Medicine Rotation Project, Faculty Mentor (De Silva, K), *Informed Consent for Interns*
- December 2020 UNC Department of Anesthesiology Academic Medicine Rotation Project, Faculty Mentor (Wicker, A), *Peripheral Internal Jugular Vein Catheters: Attending Physician Perspectives*
- December 2017 UNC Department of Anesthesiology Academic Medicine Rotation Project, Faculty Mentor (Spencer, C.), *Intern Confidence: Dealing with Potentially Violent Patients.*
- December 2014 UNC Department of Anesthesiology Academic Medicine Rotation Project, Faculty Mentor (Specht, B.), *Adequacy of Disposable Stethoscopes to Detect Common Perioperative Respiratory Findings*
- December 2013 UNC Department of Anesthesiology Academic Medicine Rotation Project, Faculty Mentor (Kazior, M.), *The Effect of Intern Level Physician Performance During Critical Events When Using Emergency Manuals*
- December 2012 UNC Department of Anesthesiology Academic Medicine Rotation Project, Faculty Mentor (Dickerson, J.), *Ultrasound Guidance for Peripheral IV Placement*

Other Healthcare Providers: Faculty Mentor

- Mar. 2020-Sep 2020 *Pressure Ulcer Prevention in High Risk Patients in the Cardiothoracic Intensive Care Unit.* Doctor of Nursing Practice (DNP) Candidate Thesis, Christinna Haire, NP

Clinical Teaching:

July 2016 – Present UNC Anesthesiology Residency Rotation Director:
 Hepatobiliary-Vascular Anesthesia
 January 2012-Present UNC Anesthesiology Residency Rotation Director:
 Transplant Anesthesia Elective
 December 2011-July 2021 UNC Anesthesiology Residency Rotation Director:
 Vascular Anesthesia
 December 2011-July 2021 UNC Anesthesiology Residency Rotation Director:
 Vascular Anesthesia Elective

Perioperative teaching of medical students, residents, and student nurse anesthetists in general anesthesia and regional anesthesia, with special emphasis on vascular anesthesia, liver transplant anesthesia, and enhanced recovery after surgery (ERAS) programs.

UNC Academy of Educators – Residents as Teachers Faculty Mentor

February 2022- Current Mentee: AA
 October 2020-July 2021 Mentee: WR
 Sept 2017 – June 2018 Mentee: BK
 Sept 2016 – June 2017 Mentee: MH

UNC Department of Anesthesiology - Faculty Mentorship Program:

Dec 2022 – Current Mentee: DR
 July 2022 – Current Mentee: AD
 Sept 2017- July2020 Mentee: BH
 Sept 2017- July 2018 Mentee: AH

UNC Department of Anesthesiology Residency - Faculty Mentorship Program:

August 2018-July 2021 Mentee: MR
 Sept 2017- June 2020 Mentee: NR
 July 2016 – June 2019 Mentee: JP
 July 2014 – June 2017 Mentee: DS
 July 2013 – June 2016 Mentee: DK
 July 2012 – June 2015 Mentee: RB

UNC School of Medicine Castillo Diversity and Inclusion Scholars Program - Mentor
 May 2023-July 2023 Mentee: SC

Other Supervision:

Nov 10, 2022 UNC Anesthesiology Mock Oral Board Faculty Examiner
 June 1, 2022 Moderator, Team Based Quality Improvement Project Resident
 Symposium, UNC Department of Anesthesiology

May 10, 2022	UNC Anesthesiology Mock Oral Board Faculty Examiner
Dec 1, 2021	UNC Anesthesiology Mock Oral Board Faculty Examiner
Nov 10, 2021	UNC Anesthesiology Mock Oral Board Faculty Examiner
Nov 24, 2021	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 2, 2021	Moderator, Team Based Quality Improvement Project Resident Symposium, UNC Department of Anesthesiology
May 19, 2021	UNC Anesthesiology Mock Oral Board Faculty Examiner
May 12, 2021	UNC Anesthesiology Mock Oral Board Faculty Examiner
May 5, 2021	UNC Anesthesiology Mock Oral Board Faculty Examiner
Nov 11, 2020	UNC Anesthesiology Mock Oral Board Faculty Examiner
May 6, 2020	UNC Anesthesiology Mock Oral Board Faculty Examiner
November 27, 2019	UNC Anesthesiology Mock Oral Board Faculty Examiner
November 13, 2019	UNC Anesthesiology Mock Oral Board Faculty Examiner
May 1, 2019	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 5, 2018	UNC Anesthesiology Mock Oral Board Faculty Examiner
May 16, 2018	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 13, 2017	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 1, 2017	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 7, 2016	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 9, 2016	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 16, 2015	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 10, 2015	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 3, 2015	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 2, 2014	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 9, 2014	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 9, 2013	UNC Anesthesiology Mock Oral Board Faculty Examiner
June 11, 2013	UNC Anesthesiology Mock Oral Board Faculty Examiner
December 12, 2012	UNC Anesthesiology Mock Oral Board Faculty Examiner
July 10, 2012	UNC Anesthesiology Mock Oral Board Faculty Examiner

Other Teaching Activities:

May 11, 2023	The Academic Performance Assessment Worksheet: Additions and Subtractions - UNC Department of Anesthesiology Faculty Development Lecture Series
March 26, 2023	American Board of Anesthesiology Application of Ultrasound Examiners Overview. Raleigh, NC.
March 5, 2023	American Board of Anesthesiology Application of Ultrasound Examiners Overview. Raleigh, NC.
May 12, 2022	Tips for Preparing Your Annual Performance Assessment (APA) Worksheet – UNC Department of Anesthesiology Faculty Development Lecture Series
January 11, 2022	Dealing with Problem Residents and Remediation - UNC Department of Anesthesiology Faculty Development Lecture Series

May 19, 2021	Tips for Preparing Your Annual Performance Assessment (APA) Worksheet – UNC Department of Anesthesiology Faculty Development Lecture Series
March 23, 2021	A Career in Anesthesiology: Tips for Success. Presented to the Carolina Health Samaritan Society. UNC-Chapel Hill.
March 9, 2021	UNC Standardized Patients Training – Anesthesiology OSCE
May 14, 2020	Tips for Preparing Your Annual Performance Assessment (APA) Worksheet – UNC Department of Anesthesiology Faculty Development Lecture Series
October 7, 2019	UNC Standardized Patients Training – Anesthesiology OSCE
March 18, 2019	UNC Standardized Patients Training – Anesthesiology OSCE
October 8, 2018	UNC Standardized Patients Training – Anesthesiology OSCE
May 2018-Present	Course Organizer – UNC Anesthesiology Mock Oral Boards
March 29, 2018	UNC Standardized Patients Training – Anesthesiology OSCE
October 23, 2017	UNC Standardized Patients Training – Anesthesiology OSCE
March 20, 2017	UNC Standardized Patients Training – Anesthesiology OSCE
October 19, 2016	UNC Perioperative In-Situ Gastroenterology Procedural Suites Crisis Resource Management Simulation - Faculty
October 17, 2016	UNC Standardized Patients Training – Anesthesiology OSCE
August 24, 2016	UNC Perioperative In-Situ Surgical Oncology Operating Room Crisis Resource Management Simulation - Faculty
August 10, 2016	Mini-Medical School Experience Retreat for UNC Department of Athletics – Course Facilitator
March 15, 2016	UNC Standardized Patients Training – Anesthesiology OSCE
October 19, 2015	UNC Standardized Patients Training – Anesthesiology OSCE
May 2012 - Present	<i>Rotation Specific Education Calendar</i> – guided the didactic format used on all rotations for resident readings and daily discussion topics in the department of anesthesiology at UNC.
May 2011-May 2016	<i>Case-Based Assessments</i> – created an assessment format used on a variety of clinical rotations for all anesthesiology residents (37 sessions)

Grants:

Active:

1. Association of American Medical Colleges (AAMC) Group on Educational Affairs (GEA) Medical Education Scholarship Research and Evaluation National Grant
 - Project Title: The Family Experience: A Family Focused Support Intervention (FFSI) to Enhance Wellness in Undergraduate Medical Education
 - Dates: July 1, 2018 – June 30, 2022
 - Role: Co-Investigator (PI S. Martinelli)
 - Award Amount - \$11,770
2. American Medical Association (AMA) Joy in Medicine Practice Transformation Initiative

- Project Title: Family Anesthesia Experience: Educating Residents and their Support Persons to Improve Relationships and Increase Wellness (PI S. Martinelli)
- Dates: July 2019-June 30, 2023
- Role: Co-Investigator
- Award Amount - \$50,366

Completed:

1. UNC Hospitals Institute for Healthcare Quality Improvement (IHQI) Seed Grant
 - Project Title: Enhanced Recovery After Major Abdominal Surgery
 - Dates: July 1, 2014-June 30, 2015
 - Role: Co – Principal Investigator (Co-PI Kolarczyk); 5% effort
 - Award Amount - \$50,000
2. University of North Carolina at Chapel Provost's Hill IBM Junior Faculty Development Award
 - Project Title: Simulated Clinical Scenarios for ACGME Milestones: Live-In Person Versus Delayed Video Recorded Assessments
 - Dates: December 1, 2014-November 30, 2015
 - Role: Principal Investigator
 - Award Amount: \$7,500

Professional Service:

To Discipline:

National:

October 2021 – Present	Society for the Advancement of Transplant Anesthesia – Abdominal Education Committee Member
November 2019 – Present	American Board of Anesthesiology Full Examiner for APPLIED Exam
November 2019–Dec. 2020	American Board of Anesthesiology New Assessment Center Design Task Force Member
November 2019 – Jan. 2023	American Board of Anesthesiology Exams Chair Committee Member
October 2019 – Jan. 2023	American Board of Anesthesiology Objective Structured Clinical Exam (OSCE) Committee Chair
Nov. 2018-March 2019	American Board of Anesthesiology Objective Structured Clinical Exam (OSCE) Committee Team Skills Task Force Leader
October 2018 – Present	Society for Education in Anesthesiology Education Meetings Committee Member

February 2018 –Nov. 2019	American Board of Anesthesiology Associate Examiner for APPLIED Exam
Sept 2017 – October 2019	American Board of Anesthesiology Objective Structured Clinical Exam (OSCE) Committee Vice Chair
June 2017 – February 2018	American Board of Anesthesiology Part 2 Provisional Oral Boards Examiner
August 2016–October 2019	American Board of Anesthesiology Objective Structured Clinical Exam (OSCE) Sub-Committee Leader: <i>Informed Consent and Treatment Options</i>
August 2016 – Present	American Board of Anesthesiology Objective Structured Clinical Exam (OSCE) Committee Member
August 2016 –April 2018	American Society of Enhanced Recovery Hepatobiliary/Pancreas/Transplant Committee Co-Chair
July 2016 – April 2018	American Society of Enhanced Recovery Resident Education Committee Member
May 2016 – Present	Society for Education in Anesthesiology Resident Education Committee Member
Feb 2016 – June 2017	American Board of Anesthesiology Part 2 New Oral Boards Examiner
Oct 2015 – August 2016	American Board of Anesthesiology Objective Structured Clinical Exam (OSCE) Development Task Force
Sept. 2015 –January 2016	Society for Simulation in Healthcare Education Committee – Liaison to Anesthesia Specialist Interest Group

Within University of North Carolina

Leadership & Committees – Interdisciplinary:

May 2023 – Current	Transplant Division Chief Search Committee
October 2022	Chair Review Committee - ENT
Sept 2022 – October 2022	Ad Hoc Committee (Corrective Action) of Medical Staff Executive Committee - Chair
February 2020 – Present	ICU Advisory Committee
December 2019 – Present	Surgical Tower Construction Project Steering Committee, Member
Nov. 2019 – March 2022	Medical Director of the Cardiovascular and Thoracic Surgery Intensive Care Unit
July 2018 – Present	UNC Enhanced Recovery After Surgery (ERAS) Program: Anesthesiology Medical Director
May 2017 – Present	Faculty Member - Institute for Healthcare Quality Improvement – University of North Carolina School of Medicine
December 2016–May 2018	Medical Education Building “Experimentation and Immersion” Advisory Group

November 2016–July 2018	Medical Education Building Advisory Group
August 2016–January 2019	Value Stream Analysis – Preoperative Value Stream – Co-Leader
May 2016 – May 2019	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Gynecology/Oncology – Team Co-Mentor
December 2015 –Present	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Renal Transplant Donors –Team Mentor
November 2015–May 2019	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Plastic Surgery – Team Co-Mentor
October 2015 – May 2019	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Urology – Team Co-Mentor
July 2015 – May 2019	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Colorectal Surgery – Team Co-Mentor
July 2015 – Present	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Surgical Oncology –Anesthesiology Champion
May 2014 – July 2018	UNC Enhanced Recovery After Surgery (ERAS) Program: Assistant Director
May 2014 – May 2016	UNC Operating Room Tower Room Design Committee
October 2013- May 2014	UNC Hillsborough Hospital Perioperative Planning Committee
October 2014 – May 2019	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Thoracic Surgery Team – Team Co-Mentor
October 2014- May 2019	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Laparoscopic Gynecology Surgery Team – Team Co-Mentor
May 2014 – June 2015	UNC Hospitals Enhanced Recovery After Surgery (ERAS): Pancreatic Surgery Team – Co-Principal Investigator
September 2012	UNC Hospitals Controlled Substances – Wasting Policies Subcommittee, Member, September 2012
October 2011- Present	UNC Hospitals Liver Transplant Patient Selection Committee, Member

Committees - Department of Anesthesiology:

April 2022 – Present	Liver and Vascular Anesthesiology – Section Chief
Nov. 2021 – Feb 2022	Compensation Plan – Incentives Task Force, Committee Leader
October 2021-Present	Finance Committee, Member
March 2021- June 2022	Point-of-Care Ultrasound Curriculum Task Force Champion, UNC Anesthesiology Residency
August 2018 – Present	Academic Performances Assessment Committee (APAC), Chair
December 2016-Present	UNC Consortium of Anesthesiology and Patient Safety through Experiential Learning (CAPSEL)/Simulation, Director
November 2016-May 2018	UNC/Duke Liver Transplant Conference – Co-Director
October 2016 – Jan 2020	Value Stream PreCare Appointments Quality Improvement Project Team Leader
August 2016 – Present	Residency Recruitment Committee
July 2016 – Present	Value Stream Leadership Team
Sept. 2015- Sept. 2019	Finance Committee, Member

May 2014 – Present	Residency Simulation Program – Director
December 2011- May 2014	Residency Simulation Program – Member
May 2014 – August 2014	Pediatric Anesthesiology Fellowship Recruitment Committee – Member
January 2014 - June 2020	Continuing Education Committee, Member
December 2013- Nov 2016	UNC Consortium of Anesthesiology and Patient Safety through Experiential Learning (CAPSEL)/Simulation, Assistant Director
August 2013 - August 2015	Anesthesiology Research Committee, Member
August 2013 – Present	Residency Program Evaluation Committee, Member
August 2013- Present	Clinical Competency Committee, Member
August 2013 – August 2014	Milestones Project Committee, Member
May 2013-July 2013	Anesthesiology Telecommunications Task Force, Member
August 2012- Present	Faculty Recruitment Committee, Member
September 2012	Residency Review Committee Site Visit Team, Member
December 2011- Aug 2013	Finance Committee, Member

Other Professional Service:

Journal Editorial Boards:

January 2021 – Present	Journal of Cardiothoracic and Vascular Anesthesiology Editorial Board Member
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Journal Submission Reviewer:

October 2021 – Current	Journal of Pain Research
November 2020 – Current	Postgraduate Medical Journal
March 2019 – Current	Plos One
December 2018 - Current	International Journal of Quality in Healthcare
December 2018 - Current	The Anesthesia Toolbox
October 2018 – Current	Anesthesia and Analgesia Practice
September 2018 – Current	The Cureus Journal of Medical Science
August 2018-Current	Journal of Mental Health and Clinical Psychology
May 2018- Current	Clinical Teacher
August 2016 - Current	Anesthesia and Analgesia
November 2015 - Current	Annals of Vascular Medicine and Research
July 2014 - Current	Journal of Cardiothoracic and Vascular Anesthesia

Journal Guest Editor:

May 2019 – July 2019	Plos One
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Meeting Abstract/Course Proposal Submission Reviewer:

July 2018	Course Proposal Review Committee for 19 th International Meeting for Simulation in Healthcare
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August 2016	Abstract Presentations Review Committee for 17 th International Meeting for Simulation in Healthcare	
June 2015	Course Proposal Review Committee for 16 th International Meeting for Simulation in Healthcare	International
July 2014	Research Abstract Review Committee for 15 th International Meeting for Simulation in Healthcare	International

Other Administrative Activities:

April 2016	UNC Clinical Learning Environment Review (CLER) from ACGME Anesthesiology Residency Core Faculty Representative
Sept 2015 – Sept 2016	Carolina Cares Carolina Shares Annual Giving Campaign. Department of Anesthesiology Co-Captain
December 2014 –Present	Objective Structured Clinical Exam – Department of Anesthesiology Residency Program – Director
January 2014	UNC CSF Lumbar Drain Protocol for Vascular Surgery– Co-author
December 2013	UNC Hospitals Joint Commission Site Visit, Anesthesiology Representative for Operating Room Evaluation
October 2013	UNC Preoperative Clinic Consultation Process Algorithm, Co-author
December 2012	UNC Ambulatory Care Center Multimodal Analgesia Protocol, Co-Author

Other Activities:

February 2022	Expert Legal Case Review
December 2021	Expert Legal Case Review
April 2019-Current	Expert Legal Case Review
December 2018	Expert Legal Case Review
November 2017	Expert Legal Case Review
August 2016	Expert Legal Case Review
October 2015	Expert Legal Case Review
Apr 2013 –May 2015	President, Keeneland Manor Homeowner's Association, Durham, NC
May 2003 – Present	Alpha Epsilon Pi National Fraternity, Lifetime Member

Professional Society Memberships:

October 2021 – Present	Society for the Advancement of Transplant Anesthesia (SATA)
September 2019-Present	Society of Academic Associations of Anesthesiology and Perioperative Medicine (SAAAPM) – Association of Anesthesiology Core Program Directors Subsection Associate Member

July 2019 – Present	Association of University Anesthesiologists (AUA)
July 2016 – July 2018	American Society of Enhanced Recovery
May 2016 – Present	Society for Education in Anesthesiology
July 2013 – Present	Society for Healthcare in Simulation (member)
July 2012 – Present	International Liver Transplant Society (member)
Aug 2011 – Present	North Carolina Society of Anesthesiologists (member)
Aug 2007 – Present	American Society of Anesthesiologists (member)
Aug 2003 – Present	American Osteopathic Association (member)

