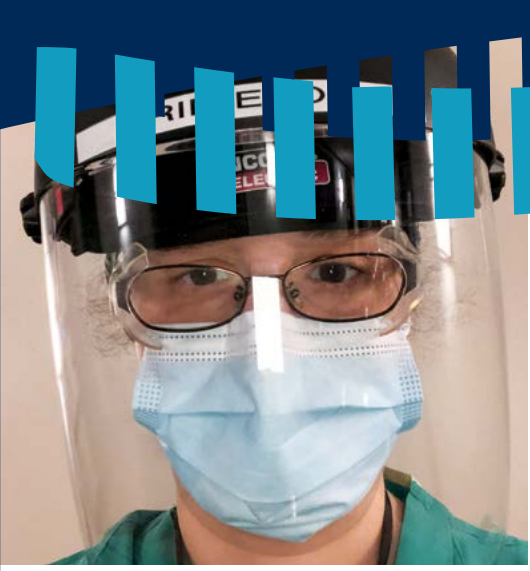


Department of
Anesthesiology

Annual Report

2019 – 2020 Academic Year





Steven J. Lisco, MD

Myrna Newland, MD, Endowed Professor of Anesthesiology

Chair, Department of Anesthesiology
University of Nebraska Medical Center

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Message from the Chair

From our current vantage point, it can be difficult to remember that the first half of academic year 2019 – 2020 was pandemic-free. The year began like most. Our department was laser-focused on the success of our tri-partite mission. Our collective efforts were exemplified by the continued growth of our educational, research, and clinical programs.

Notably, we welcomed a new research scientist, Sowmya Yelamanchili, PhD, into our department. You can read more about Dr. Yelamanchili and her team of amazing investigators later in this issue of the annual report. Additionally, Gurudutt Pendyala, PhD, received the 2020 Gilmore Distinguished New Investigator Award, and Hanjun Wang, MD, was named the Margaret R. Larson Professor of Anesthesiology.

This year was also remarkable for the work of Amy Duhachek-Stapelman, MD, who received UNMC's prestigious Varner Educator Laureate Award for her contributions to the creation of the outstanding educational experience that our growing ranks of medical students, residents, and fellows benefit from on a daily basis!

However, once the COVID-19 pandemic reached Nebraska, our perspective instantly changed. All members of our department went above and beyond, making the safety of our patients and colleagues our foremost priority. We learned rapidly, we adapted creatively, and we shared selflessly. In the face of uncertainty, our department stepped into a collective institutional effort that made the medical center an exemplar to the world on how to battle COVID-19. In this report, you can read about how members of our department not only delivered top-quality patient care, but also developed procedures and devices to protect their fellow healthcare workers, both from the dangers of the virus and the perils of burnout. I thank you all for your service, courage, and grace.

Finally, let me specifically acknowledge the families who have sustained us all throughout this remarkable year. We could not do our jobs without their support. My gratitude for their love and devotion. In a year that not only stressed healthcare to its limits, but that also bore witness to an unprecedented level of social awareness, we pulled together and persevered. The adaptability and fortitude demonstrated by our anesthesiology family is beyond commendable, and I am thankful to you all for the opportunity to lead this amazing department!

Thank you for your interest in the Department of Anesthesiology and please enjoy this truly historic annual report.

Steven J. Lisco, MD

Myrna Newland Endowed Professor of Anesthesiology

Chair, Department of Anesthesiology University of Nebraska Medical Center

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More About us

The Department of Anesthesiology provides patient care across the entire perioperative spectrum at Nebraska Medicine locations and Children's Hospital & Medical Center. The department is divided into five clinical divisions.

Aside from patient care, the department is also focused upon educating the next generation of anesthesiologists. Approximately 60 residents and fellows get their specialty education in the department. Fellows train in ACGME-certified subspecialties of Adult Cardiothoracic Anesthesiology, Critical Care, Pediatric Anesthesiology, Chronic Pain Management, and Regional Anesthesia & Acute Pain Management. Additionally, the department offers non-ACGME fellowship training in perioperative echocardiography, liver transplant anesthesiology, and pediatric cardiac anesthesiology.

Our mission is to deliver high-quality and compassionate medical care, provide premier educational programs, and perform innovative research.



Our COVID-19 Response

It is the virus that changed the world. Life as we knew it would never be the same. Read on to learn about how our team initially tackled the challenge.

PATIENT CARE

Rapidly Evolving Protocols

Nebraska's first confirmed COVID-19 patient came in early March, along with a deluge of rapidly changing information and procedures that would last until mid-May. With the pandemic came an urgent need for changes in almost all aspects of hospital operations, including personal protective equipment, triage, clinical operations, charting, visitor policies, employee travel and much more. Leaders throughout UNMC, Nebraska Medicine and our department worked tirelessly to ensure our response was effective and well-communicated.



Ellen Roberts, MD, vice chair of clinical operations

"Sometimes as soon as you could send information out, we would have to turn around and update it again because things were changing so quickly," said Ellen Roberts, MD, vice chair of clinical operations. "Things eventually settled down after two months and we were able to get protocols in place, but I think it was mentally exhausting for everyone to get to that point."

Intubation Teams

Several clinical directors and department leaders contributed to the implementation of intubation teams that were utilized in April 2020, during a period of the pandemic when testing and PPE were in high demand but short supply.

The intubation teams began their days preparing to intubate multiple surgical patients with COVID-unknown status and wore reusable Power Air-Purifying Respirators (PAPRs). Because intubation and extubation are aerosol-generating procedures, extra precautions were taken to reduce potential airborne contaminants.



James Sullivan, MD, critical care anesthesiologist and medical director of the Werner ICU, dons Covid-protocol PPE, including a PAPR.

This included minimizing personnel in the operating room until 15 minutes after intubation was complete, allowing air handlers to sanitize the environment. The intubation teams would then clean their PAPRs and move to the next patient, conserving valuable PPE.

"This staffing model meant we needed more anesthesiology personnel than usual, and it was possible because the outpatient surgery centers had been shut down to minimize risk and conserve resources to prepare for a potential surge," said Perioperative Medical Director Thomas Schulte, MD. "For that period, we had twice as many people on the schedule as usual to ensure we could perform all aspects of our job safely while maintaining excellent patient care."

Drs. Schulte, Kyle Ringenberg, Bradley Fremming and Steven J. Lisco published on the intubation teams in the *Journal of Clinical Anesthesia* in May of 2020.

Staffing Models

Drs. Roberts and Daniel W. Johnson, MD, division chief of critical care, created a pyramid staffing model that places a team of healthcare workers in charge of a group of patients. A physician is atop the model, with CRNAs, respiratory therapists, and nurses structured subsequently. Though it was fortunately never needed, the strategy is prepared in the event of a patient surge.

INFORMED DECISIONS

ECMOCARD Research Study

In April 2020, UNMC became one of more than 370 medical centers in 53 countries participating in a study on critically ill COVID-19 patients. The ongoing study is hosted by the COVID-19 Critical Care Consortium (CCC), a global group of clinicians and scientists who united in response to the pandemic. The aim of the CCC is to help intensive care clinicians provide the best and most up-to-date information to save lives and improve patient outcomes.

The principal investigator leading UNMC's participation is Shaun Thompson, MD, assistant professor and medical director of Extracorporeal Membrane Oxygenation (ECMO) — a form of life support that partially replaces heart and lung function. The research study is commonly referred to as ECMOCARD, short for Extracorporeal Membrane Oxygenation for 2019 novel Coronavirus Acute Respiratory Disease.

“Clinicians do the best they can for every patient they have, but information and resources are limited in the midst of this global crisis,” Dr. Thompson said. “We have to be cautious and



Department members associated with the ECMOCARD study were presented participation certificates from the CCC. They are (from left) Julie Hoffman, research nurse, Sean Rajnic, MD, critical care fellow, Shaun Thompson, MD, ECMO medical director, and Lace Sindt, research nurse.

realistic in selecting which patients will benefit from interventions like ECMO. This study can help us make those decisions through global research and collaboration.”

By studying the clinical course of COVID-19, researchers hope to identify patient factors that make them more likely to require ICU-level care, and whether ECMO can improve their outcomes.

Having patients on ECMO can be labor and resource intensive, Dr. Thompson said. It requires a dedicated nurse for each patient and

extra equipment and monitoring. Dr. Thompson noted that in the 2009 H1N1 — commonly known as swine flu — outbreak, ECMO was a life-saving tool for many, with patients averaging one week on the machine. COVID-19 patients on ECMO appear to require long periods of support, averaging three weeks per patient. Some ICUs around the world have even reported patients on ECMO for eight weeks.

EQUIPMENT TO PROTECT

Homemade Masks

In the early months of the pandemic, personal protective equipment (PPE) was in low supply and very high demand. This prompted thousands of skilled volunteers to sew homemade cloth masks to help slow the spread of COVID-19, and reserve surgical-grade PPE for healthcare workers on the front lines.

Faye Haggar, EdD, director of education development and academic technology, was one of the volunteers sewing masks from Nebraska Medicine's provided kit that included medical-grade fabric that filters for particulates better than standard fabric, elastic and links to

an instructional video. The masks were used by visitors and personnel without direct patient contact who still need to move about the hospital.

“I feel like this is my opportunity to help my colleagues who are working hard in the clinical area,” said Dr. Haggar. “I'm hoping our efforts can help keep them safe.”

Faye Haggar, EdD, director of education development and academic technology, sews masks in her home in early 2020.





Thomas Schulte, MD, perioperative medical director, demonstrates how to use the intubation box he created in response to the COVID-19 pandemic.

Intubation Protection

In March 2020, Dr. Schulte and Michael Ash, MD, in collaboration with an Omaha plastics fabricator, invented a plastic shield that helps protect healthcare workers from aerosolized droplets during intubation.

Dr. Schulte, a Department of Anesthesiology perioperative medical director, and collaborators felt the need to create an improved version of intubation boxes already on the market to provide an extra layer of protection for healthcare workers amidst widespread shortages of PPE in the early stages of the COVID-19 pandemic.

The Intubation Shield looks like a four-sided box made of a clear, lightweight plastic. The shield is easy to clean and foldable, making it convenient to maneuver and store. It has ports so a healthcare professional can access the patient. The shield acts as a barrier to any pathogens a patient might express as a physician installs a tube down a patient's throat and into the lungs.

"The intubation shield provides an additional layer of safety and is so easy to use," said Dr. Schulte.

UNeMed, the technology transfer and commercialization office for UNMC and the University of Nebraska at Omaha, shipped intubation boxes to hospitals in some of the areas hardest hit by COVID-19.



Dr. Markin utilized four 3D printers (left) to make protective face shields (right).

Face Shields

Near the end of March 2020, Nicholas Markin, MD, director of perioperative imaging, and his wife, Kara Markin, MD, a primary care physician with Nebraska Medicine, made face shields to further protect healthcare workers amidst a Nation-wide PPE shortage.

The couple made 112 face shields in 72 hours utilizing three 3D printers in Dr. Markin's lab and one at their home. They printed non-stop, waking in the middle of the night to refill plastic

restart the machine. The shields were utilized in operating rooms by anesthesia providers. An article detailing the printing process was published in the *American Journal of Infection Control*.



In this still from a tutorial video, Dr. Markin illustrates how to use the TEE protective sheath.

TEE Protection

In April 2020, Dr. Markin created a procedure for transesophageal echocardiography (TEE) utilizing minimal, on-hand protective equipment that limits contact between the probe operator and patient.

In TEE, a long ultrasound probe is passed into the esophagus of a sedated patient to provide images used to assess structure and function of the heart. Dr. Markin's innovative procedure utilizes a bite guard attached to a plastic sheath. This physical barrier covers the probe and prevents anesthesia providers from coming into direct contact with potentially harmful



Nicholas Markin, MD, director of perioperative imaging, created a way to safely perform TEE during the pandemic using on-hand supplies.

patient fluids that could transmit the SARS-CoV-2 particles that can cause the COVID-19 disease, or other dangerous pathogens.

"It's important to protect our colleagues on the front lines by minimizing risk wherever possible," said Dr. Markin. "With these simple interventions, we reduce the risk of

cross contamination of an anesthesiologist's workspace without sacrificing patient care and safety."

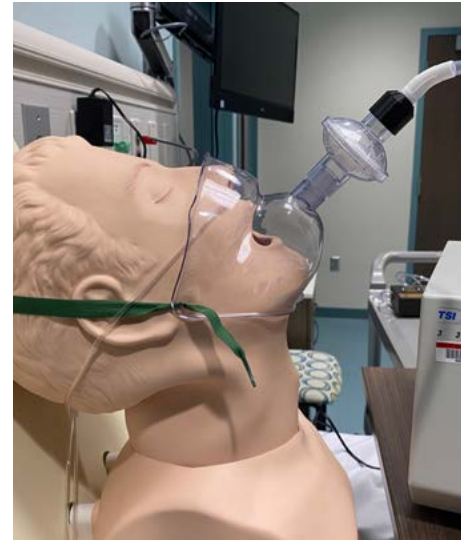
An article about the technique was published in the American Society of Anesthesiologists journal, *Anesthesiology*.

Infectious Aerosol Capture Mask (IACM)

On April 15, Nebraska Medicine began using the IACM developed by Chair Steven J. Lisco, MD, which captures exhaled aerosolized particles at their source from patients.

The device was utilized in operating rooms with COVID-unknown patients undergoing monitored anesthesia care, during and following emergence from general endotracheal anesthesia, as well as in the post-anesthesia care units (PACU). At the time of its initial use, COVID-19 testing was not widespread.

"In these areas, patients are often given nasal cannula oxygen, which has been shown to increase the rate and density of aerosolized particles," Dr. Lisco said. "Additionally, work in these areas often mandates that patients and health care workers be in close proximity. While risk of infection transmission is extremely low, efforts to reduce environmental aerosol contamination are still justified."



The IACM connects to wall suction and vacuums potentially dangerous particles at their source. 5,930 were reproduced and shipped to the Nebraska Medicine, the Air Force and hospitals around the country.

The device utilizes a face tent, positioned upside down with a viral filter attached, connected to wall suction. The apparatus attaches to the vacuum source via standard suction tubing adapted to the device via a plastic coupler initially created with a 3D printer by Nicholas Markin, MD, director of perioperative imaging. Later, Omaha Custom Manufacturing mass-produced both the coupler and a reproduction of the entire device. Those reproductions, 5,930 in total, were shipped to hospitals around the Nation and the Air Force, which used it to protect flight crews transporting COVID-19 patients.



Steven J. Lisco, MD, department chair, created the Infectious Aerosol Capture Mask (IACM) which is designed to reduce healthcare worker's exposure to the coronavirus during the pandemic.

"The IACM performed very well in laboratory testing when used with a nasal device used to deliver supplemental oxygen, catching more than 90% of airborne particles expelled in the mask, ultimately preventing the aerosol from entering the patient environment," Dr. Lisco said. "Even when the vacuum wasn't turned on, the mask was still 85% effective as a barrier."

ADVOCACY

Social Distancing Encouragement

On March 18, Dr. Johnson was featured by several local news organizations after an email he wrote to friends and family was shared with permission and went viral on social media. The March 15 letter garnered 4.4 million views and 7,400+ shares on Facebook alone.

“Dear Family: The COVID-19 pandemic will be a challenge to the USA unlike any we have experienced in our lifetime,” the message begins.

Dr. Johnson went on to emphasize the seriousness of the virus, the risk of overwhelmed hospitals, widespread death and the following Post-Traumatic Stress Disorder amongst healthcare workers. He closed with specific guidelines for all Americans to follow.

“I’m really proud of Dr. Johnson and the entire department,” said Dr. Lisco. “Not only are they dedicated care givers risking their own health daily, but they are selfless advocates for the health of Nebraskans we are fighting for each and every day. Dr. Johnson’s words are echoed by members of our department and the critical care team he leads.”



Daniel W. Johnson, MD, has been a leader in public pandemic guidance with multiple news outlets featuring his advice.



Sasha Shillcutt, MD, spoke in a global webinar on physician wellness.

Dr. Johnson is the division chief of critical care associate medical director of the Nebraska Biocontainment Unit, and medical director of the cardiovascular ICU. He has since given multiple messages on multiple platforms with large audiences about pandemic guidance.

Global Webinar

Sasha Shillcutt, MD, vice chair of strategy and innovation, spoke on the topic of physician wellness on April 27 in a global webinar discussing cardiothoracic surgery during the COVID-19 pandemic.

The webinar was jointly hosted by the Cardiothoracic Surgery Network and the Society of Cardiovascular Anesthesiologists, and had more than 1,400 surgeon and anesthesiologist attendees from 102 countries during the live

broadcast. A physician wellbeing expert, Dr. Shillcutt led a portion of the webinar focused on providing strategies to remain resilient in the face of crisis. Other topics covered in the webinar included approaches to re-opening cardiothoracic surgery services, caring for patients with COVID-19, and more.

“I want to encourage people to think of burnout and stress as a spectrum, and we are all on that spectrum,” Dr. Shillcutt said in the webinar. “It is really impossible to be a surgeon or anesthesiologist right now and not be facing some amount of stress and challenge in both our personal and professional lives.”

Stress management tips Dr. Shillcutt suggests are to do meaningful work for yourself, practice good sleep hygiene, get outside, revel in community, be aware of your numbing tendencies, and control what you can. 🍷



Strategic Plan Update

In November 2018, the Department of Anesthesiology identified a Strategic Plan to be achieved within five years, or by 2023. The plan outlines six goals that would elevate our performance.

To achieve the high-reaching goals within five years, department executive leadership developed five domain committees that include representation from all subsets of the department. Each domain committee is led by a vice chair and is focused on executing varying tactics to reach multiple goals. The domains are:

- Patient
- Education
- Discovery
- Reputation
- Culture

The department's Strategic Goals (FY19-FY23) and notable progress toward them are below:

1 We will be acknowledged as a top decile academic department of anesthesiology for patient safety and quality and report annually using internal benchmarks and AQI national benchmarks.

Progress

Elected to move away from AQI and toward use of the Multicenter Perioperative Outcomes Group (MPOG) program titled Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE). Leaders are currently working to set up a department dashboard with site quality metrics.

2 We will be a regional leader recognized for our top-ranking residency and fellowship training programs with a board pass rate of 90%. We will fill our anesthesiology core program and all fellowships annually over the next five years.

Progress

- » In an effort to improve board scores, mock exams are held for the basic, advanced and oral exams. Faculty receive training on teaching styles, and house officers are utilized in both learner and teacher roles.
- » All residency and most fellowship programs filled since initiation of the Strategic Plan.
- » Three new fellowship programs began in 2019, the Liver Transplant Anesthesiology, Regional Anesthesia and Acute Pain Medicine and Pediatric Cardiac Anesthesiology fellowships.

3 We will be financially successful by demonstrating positive growth in our departmental reserves annually and having seven funded professorship endowments by year 2023.

Progress

- » In 2019, two new pediatric endowments joined the department's previously instated three, for a current total of five endowments:
- » Carol Lydiatt, MD, and Daniel Lydiatt, MD, Professorship in Pediatric Anesthesiology
- » Jane Kugler, MD, and Douglas Vonderfecht, MD, Family Professorship in Pediatric Anesthesiology

4 We will excel in faculty development as demonstrated by faculty from every division presenting annually; and in leadership positions at the top eight national society meetings (ASA, SAMBA, SCCM, SCA, IARS, ASRA, SPA, SOAP)

Current society leaders are:

- » Society of Cardiovascular Anesthesiologists
Tara Brakke, MD, Co-Chair of Annual Meeting Fellow and Resident Track
Megan Chacon, MD, Scientific Program Committee Member, Bylaws Committee Member
Nicholas Markin, MD, Continuing Medical Education Committee, Co-Director of Perioperative Echocardiography Course Planning Committee
Sasha Shillcutt, MD, Board of Directors, Chair of the Scientific Program Committee
- » Society of Critical Care Medicine
Daniel W. Johnson, MD, Co-Chair of the Adult Ultrasound Committee, Echocardiography Board Review Course Committee Member
Steven J. Lisco, MD, Communication Committee, Program Involvement Workgroup
Shaun Thompson, MD, Communications Committee, Graduate Medical Education Committee

- » American Society of Anesthesiologists
Amy Beethe, MD, Nebraska's Alternate Director, Political Action Committee member
Amy Duhachek-Stapelman, MD, Political Action Committee member
- » Nebraska Society of Anesthesiologists
Cale Kassel, MD, President-Elect
- » Society for Pediatric Anesthesia
Michelle LeRiger, MD, Question of the Week Editor, Educational Subtrack on Pediatrics, Program Shadow for SPA 2021 Planning Committee
Mohanad Shukry, MD, PhD, Pediatric Anesthesiology Leadership Council Member and President Finalist

5 We will demonstrate academic excellence by increasing peer reviewed publications by at least 10% annually and increasing annual extramural funding.

Progress:

- » The department has soared from \$537,834 in funded research in FY18 to \$2,337,097 in FY20.
- » In 2019, Sowmya Yelamanchili, PhD, joined the department. Her research focuses on the role of regulatory molecules such as genes, proteins, and microRNAs in the pathogenesis of neurological disorders and drug addiction.

6 We will create a culture of wellbeing and engagement as demonstrated by an improvement in our burnout rate by 3% annually for five years to an improvement of 15% at year five (2023).

Progress

- » Use of Microsoft Teams for clear, timely communication
- » Wellness Resource Created on Anesthesiology Intranet
- » Large wellness initiative kicked off in June 2020 with first of two department-wide surveys distributed. ❤️

Cardiothoracic Division Update

HIGHLIGHTS

- » Multiple COVID-19 Response Leaders
- » New Fellowship Director
- » Varner Educator Laureate Award

Despite monumental challenges brought forth by the COVID-19 pandemic, cardiothoracic division faculty repeatedly found opportunities to adapt, overcome and demonstrate excellence.

Multiple division faculty were involved in impactful responses to the COVID-19 pandemic, including Nicholas Markin, MD, Ellen Roberts, MD, Thomas Schulte, MD, and Sasha Shillcutt, MD. They developed devices that protect healthcare workers, educated physicians on resilience, and structured healthcare teams that enhanced patient care and supported workers. Learn the specifics of these endeavors in the COVID-19 coverage near the beginning of this report.

“Our faculty really showed their character when the pandemic hit,” said Tara Brakke, MD, cardiothoracic division chief. “Multiple division members jumped into action and deployed their strengths to contribute to better patient care and more safe working conditions for healthcare workers around the globe.”

In July 2019, Rebecca Aron, MD, was promoted to program director of the adult cardiothoracic anesthesiology (ACTA) fellowship. Dr. Aron joined the department in 2018 as an associate professor and associate program director of the ACTA fellowship under then-director, Dr. Brakke.

Dr. Aron previously worked at Cedars-Sinai Medical Center as an assistant professor, associate program director of their ACTA fellowship, co-director of echocardiography simulation, and director of resident



Department Chair Steve J. Lisco, MD, at right, congratulates Amy Duhachek-Stapelman, MD, vice chair for education, on being named the 2020 Varner Educator Laureate.



Rebecca Aron, MD, adult cardiothoracic anesthesiology fellowship program director

echocardiography training. Additionally, Dr. Aron has a master of science in biomedical engineering and worked in research and development of cardiac leads before pursuing medical school and cardiac anesthesiology. Her projects earned multiple accolades, including three U.S.

patents and a competitive grant.

Amy Duhachek-Stapelman, MD, vice chair of education, was named the 2020 Varner Educator Laureate for outstanding dedication to and achievements in medical education. To learn more about this prestigious award, please find her feature in the education section of this report.



Katie Goergen, MD, was appointed chair of the residency program’s Clinical Competency

Katie Goergen, MD, associate residency program education director

Committee, and her role of associate program director was narrowed to focus on education.

Dr. Shillcutt continued to be a leader beyond her department responsibilities in the areas of physician resilience, wellness and gender equity. In February 2020, she published her first book, “Between Grit and Grace: The Art of Being Feminine and Formidable.”

Cardiothoracic Division

- Austin Adams, MD
- Rebecca Aron, MD
- Tara Brakke, MD, chief
- Megan Chacon, MD
- Amy Duhachek-Stapelman, MD
- Katie Goergen, MD
- Kristi Lorenzen, MD
- Andrew Maresch, MD
- Nicholas Markin, MD
- Ellen Roberts, MD
- Thomas Schulte, MD
- Sasha Shillcutt, MD
- Jeffrey Songster, MD

Critical Care Division Update

HIGHLIGHTS

- » Extraordinary COVID-19 Leadership
- » Best-Ever Patient Care
- » New Fellowship Director

The Spring of 2020 presented unprecedented challenges to the Critical Care Division, as a result of the COVID-19 pandemic. Early on, division members recognized the need to pivot from a biocontainment stance to a plan for mitigation of damages. They advised hospital leadership on resource allocation, their colleagues on ICU care, and the general public on safe pandemic practice.

Several team members were in discussions with hospital leadership on how best to conserve personal protective equipment (PPE) when the Nation was in severe shortage. Division member and Department Chair Steven J. Lisco, MD, was instrumental in the slowdown of operating room throughput in times when hospital capacity was threatened by surges in COVID-19 cases and helped lead the effort to ramp throughput back up when it was safe to do so.

Physicians, fellows, and nurse practitioners, with support from anesthesiology residents, all took turns working in the COVID-19 ICUs, as they recognized that the magnitude of the effort was beyond what could be handled solely by friends and colleagues in the Department of Internal Medicine. They worked closely with the pulmonary critical care medicine team to deliver world-class ICU care to dozens of sick COVID patients.

“The critical care experts in our department took on many responsibilities in a crucial time of need,” said Chair Steve J. Lisco, MD. “They and their families made sacrifices while acting with courage and generosity. We are forever grateful for their leadership.”

Multiple division members took to traditional and social media to alert the general public of the severity of the risks of COVID-19. They sought to dispel massive amounts of misinformation and disinformation being spread throughout media. Division Chief

Daniel W. Johnson, MD, had multiple communications spread virally for their candid and straightforward content.



Shaun Thompson, MD, is now the critical care fellowship director in addition to being the medical director of ECMO.

Shaun Thompson, MD, medical director of extracorporeal membrane oxygenation (ECMO), led Nebraska Medicine’s participation in a global study on COVID-19 that aims to identify patient factors that make them more likely to require ICU-level care, and whether ECMO can improve

their outcomes. With more than 370 institutions in 53 countries, the study shares the latest findings on a massive scale.

The greatest accomplishment of the year was the division’s ability to continue to provide extremely high-quality care to its traditional patients, no matter how intense the fight against COVID-19 became. Metrics for quality in patient care outcomes indicate that the critical care division was able to improve upon last year’s best-ever results, even in the midst of a horrible pandemic.

Additionally, Dr. Thompson became the critical care fellowship program director, replacing Dr. Johnson who now serves as associate program director. 🍷



Nurse Practitioner Andy Artzner and Critical Care Anesthesiology Fellow Zeid Kalarikkal, MD, practice donning and doffing Covid-protocol PPE in a training session.

Critical Care Division

Anesthesiology Faculty

Amanda Arnzen, MD
Joseph Baus, MD
Erin Etoll-Jones, MD
Daniel W. Johnson, MD, division chief
Steven J. Lisco, MD, department chair
Joseph Pawlowski, MD
James Sullivan, MD
Shaun Thompson, MD

Emergency Medicine Faculty

Daniel Kalin, MD
Elizabeth Mahal, MD

Nurse Practitioners

Andy Artzner
Vickie Dolan
Lyndie Farr
Kerry Mancuso
Brooke Veer-Sundermeier

Multispecialty Division Update

HIGHLIGHTS

- » Obstetrics Consolidated
- » Clinical Care Flexibility
- » Dr. Wakin is Teacher of the Year

This academic year marks the first full year in which the multispecialty division has absorbed what was formerly the obstetric anesthesiology division. It is now a section within the multispecialty division, and is headed by Charles Walcutt, MD.

Nebraska Medicine also consolidated the labor and delivery service from Bellevue Medical Center to provide one system-wide peripartum care unit that treated both COVID-positive and COVID-negative mothers. The result was a roughly 50% increase in labor-and-delivery activity throughout the pandemic.

The COVID-19 pandemic forced the division to adapt its clinical care model to constantly changing circumstances. Early in the pandemic response, we closed operating rooms to free up staff to work on inpatient COVID-19 units. The division also developed several new patient care workflows, include donning and doffing personal protective equipment before and after intubation and one-on-one staffing for COVID-positive patients in the operating room. As the pandemic continued, the division instituted innovative staffing models that provided flexibility to scale operating room volume up or down in response to local COVID spikes.

Several division members contributed to the creation and revision of many policies, guidelines and pathways. By documenting these best practices within the division, all anesthesia professionals have access to the knowledge to provide the best patient care possible. The

division also instituted Enhanced Recovery After Surgery (ERAS) programs for several surgical specialty services, including colorectal surgery, bariatric surgery, spine surgery, and gynecologic surgery.

As medical director of Enhanced Recovery After Surgery (ERAS) and section head of complex abdominopelvic procedures and ERAS, Kyle Ringenberg, MD, guides many of the shifts in protocols that improve the recovery experience for patients.



Bradley Fremming, MD, PharmD, clinical director and co-director of quality assurance

Bradley Fremming, MD, PharmD, clinical director, was appointed as co-director of quality assurance, joining fellow division member Cale Kassel, MD, in leading department-wide quality review conferences. CA1-3 residents voted Kristin Wakin, MD, to be the Teacher of the

Year, citing her ability to balance guidance and education with resident autonomy in the operating room. The division welcomed two new members, Instructors Skye Bakker, MD,

and Matthew Hagge, DO, both of whom are graduates of UNMC's Anesthesiology residency program. A Transplant Anesthesiology Fellowship was created and Cory Zetterman, MD was appointed as the inaugural fellowship director. ❤️

Multispecialty Division Section Heads

Cale Kassel, MD
Abdominal Organ Transplantation Anesthesiology

Kyle Ringenberg, MD
Complex Abdominopelvic & Enhanced Recovery

Joseph Baus, MD
Trauma Anesthesiology & Advanced Airway Management

Joseph Pawlowski, MD
Neuroanesthesiology

Charles Walcutt, MD
Obstetric Anesthesiology

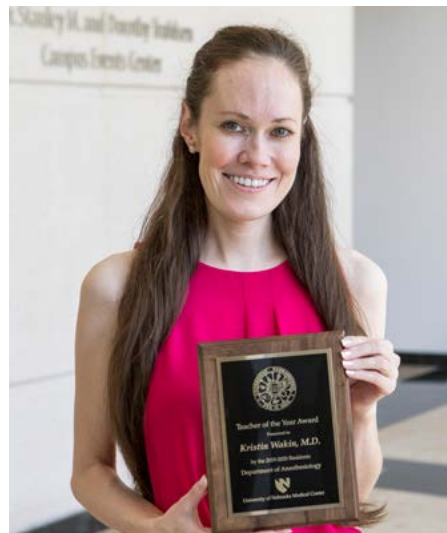
Terry Huang, MD
Orthopedic Anesthesiology

Robert Lobato, MD
Thoracic Anesthesiology

Kristi Lorenzen, MD
Vascular Anesthesiology

Multispecialty Division

- Skye Bakker, MD
- Kristina Birch, MD
- Sheila Ellis, MD
- Bradley Fremming, MD, PharmD
- Matthew Hagge, DO
- Jeremy Hartley, MD
- Allyson Hascall, MD
- Richard Holcomb, MD
- Cale Kassel, MD
- Robert Lobato, MD, division chief
- John Ohnoutka, MD
- Huiling Pang, MD
- Jennifer Rasmussen, MD
- Kyle Ringenberg, MD
- Jennifer Uggen, DO
- Kristin Wakin, MD
- Charles Walcutt, MD
- Corey Zetterman, MD



Kristin Wakin, MD, 2020 CA1-3 Teacher of the Year

Pain Medicine Division Update

HIGHLIGHTS

- » COVID-19 ushers in Telemedicine
- » Stellate Ganglion Block and COVID-19
- » New Protocols Improve Outcomes

All of the Pain Medicine Division, contains chronic and acute pain sections, reacted to the pandemic with flexibility and teamwork.

Chronic pain team members were asked to suspend services in an effort to slow the spread of the virus and brace for a potential surge of patients. They ceased clinic and procedural operations from mid-March until mid-May, with the exception of necessary services such as Botox™ injection for chronic migraines and pain pump refills. Some patients were able to continue seeing their doctors via telemedicine. When the clinic reopened in May, the team slowly ramped up their patient volumes—doubling the normal allotted time for procedures to ensure the environment could be properly deep-cleaned between patients. The Acute Pain Service (APS) remained in action throughout the pandemic while adjusting to new safety protocols and hospital needs.

Several physicians from multiple disciplines



Michael Lankhorst, MD, is the principal investigator of the stellate ganglion block research.

and subspecialties came together to research the use of a stellate ganglion block to potentially decrease inflammation in COVID-19 patients, reducing irritation in the lungs and heart. They are Michael Lankhorst, MD, Thomas Nicholas, MD, Daniel W. Johnson, MD, Steven

J. Lisco, MD, and Hanjun Wang, MD. The initial research is ongoing.

The APS worked with cardiothoracic surgeons and the Cardiothoracic Anesthesiology

Division to develop new procedures for mini-sternotomies utilizing a chest wall nerve block. This block is suitable for patients with various comorbidities and improves their pain scores. Thomas Nicholas, MD, section head of regional anesthesia and the APS, was the first to perform a chest wall block for a mini-sternotomy at Nebraska Medicine in Summer 2020. The procedure is now utilized for several patients.

The APS adjusted other procedures in response to evidence, such as applying ERAS guidelines to hip, rib and shoulder fractures. Research shows outcomes with fewer complications and less pain for patients who receive a nerve block within four hours of hospital admittance. Physicians successfully navigated coronavirus-related obstacles to make this change. A Regional Anesthesia & Acute Pain Management Fellowship was created and Nicholas Heiser, MD was appointed as the inaugural fellowship director.



Jessica Sayre, MD, director of the Perioperative Evaluation and Care Clinic

Once formerly known as the Pre-Anesthesia Screening Clinic (PASC) and the Center for Perioperative Evaluation and Care (CPEC), the clinic led by Jessica Sayre, MD, has settled on the name Perioperative Evaluation and Care Clinic (PECC). The name was initially

changed to better reflect the perioperative

benefits it provides and was changed again to avoid a logistical confusion. During the pandemic, the PECC was able to see patients via telemedicine, which could allow the service to be utilized by more surgical services and rural patients in the future.

Physician Assistant Christa Nelson joined the team in April 2020 after earning her Master of Physician Assistant Studies degree from UNMC in 2019. ❤️

Pain Medicine Division

Faculty

Beth Burton, MD
Nicholas Heiser, MD
Terry Huang, MD
Andrew Ingemansen, MD, PhD
Thomas Nicholas, MD
Platt Niebur, MD
Jessica Sayre, MD
Madhuri Are, MD, division chief
Kimberley Haynes-Henson, MD
Marshall Ladd, DO
Michael Lankhorst, MD
Angie Rakes, MD

Physician Assistants

Holly Doerneman
Christa Nelson
Lea Sommer

Pediatric Anesthesiology Division Update

HIGHLIGHTS

- » Surgical Capacity to Double
- » Opioid Research
- » Pediatric Chronic Pain Program

In addition to responding to the pandemic, our pediatric anesthesiologists have been preparing for the August 2021 opening of the new Hubbard Center for Children at Children's Hospital & Medical Center (CHMC).

Preparations include defining surgical logistics and recruiting staff. The center will double CHMC's surgical capacity, and the division is initially increasing faculty by 33% in response.

"I know it's cliché, but if you build it, they will come," said Jessica Goeller, DO, interim pediatric anesthesiology division chief. "We regularly see patients from a 350-mile radius and have some patient populations from all over the nation who come here for our expertise. People will travel for outstanding, efficient care."

In early 2020, Mohanad Shukry, MD, PhD, transitioned out of his former role of pediatric anesthesiology division chief and into his new role of department executive vice chair. Dr. Goeller was named interim pediatric anesthesiology division chief for academic year 2020 – 2021. Dr. Goeller joined the department in October 2014 and currently serves on faculty senate at UNMC and Children's Specialty Physicians' board of directors.

Kunal Sualy, MD, received a \$50,000 grant from the Child Health Research Institute (CHRI) to study the effects of long-term opioid exposure on pre-term and term infants in respect to nervous system development and behavioral impairments later in life. His grant proposal is notable because it is the first basic science grant awarded to a Department of Anesthesiology



Kunal Sualy, MD, officially joined the department in 2019 and received a \$50,000 CHRI grant in 2020.

junior faculty member, it was awarded on its first submission, and it is Dr. Sualy's first funded research. He is working closely with Gurudutt Pendyala, PhD, a department researcher, and Mohanad Shukry, MD, PhD, executive vice chair.

"I've had an overwhelming amount of support from the department to guide me and help this project succeed," Dr. Sualy said. "Ultimately, we are hoping this research can help clinicians make informed decisions, and spark more basic science research in the department."

Thomas Manning, MD, led the creation of a multidisciplinary pediatric chronic pain management program at CHMC. Patients in the program benefit from care tailored to their individual needs, including physical, behavioral or occupational therapies, medication or interventional procedures.



Brittany Brown, MD, director of medical student education

The division welcomed Brittany Brown, MD, and Kunal Sualy, MD, both former pediatric anesthesiology fellows at UNMC who completed training in 2019. Dr. Brown joined the solid organ transplant team, established pediatric-specific protocols

and was appointed director of medical student education. Thomas Lockhart, MD, became the director of simulation for the whole department. His work in high-fidelity simulation has benefited not only department residents and fellows, but also students from the colleges of medicine, pharmacy and nursing. Additionally, the 2020 fellowship graduate Gabriel Gallegos, MD, is slated to join as faculty in October 2020.

Amy Beethe, MD was named the alternate director for the Nebraska Society of



The nine-floor, state-of-the-art clinical facility opening in 2021, will double Children's capacity, adding more than 100 new patient beds.

Anesthesiologists in July 2019. She also oversees meeting organization and physician outreach for the same group. ♥

Pediatric Division

- Amy Beethe, MD
- Brittany Brown, MD
- Greta Duncan Wiebe, MD
- Andrea Dutoit, MD
- Marcellene Franzen, MD
- Kerri George, MD
- Jessica Goeller, DO, interim division chief
- Ryan Hamlin, MD
- David Hoy, MD
- Michelle LeRiger, MD
- Thomas Lockhart, MD
- Thomas Manning, MD
- Maria Michaelis, MD
- Kaitlyn Pellegrino, MD
- Ahsan Qadeer, MD
- Nancy Rogic, MD
- Mohanad Shukry, MD, division chief
- Rachel Spitznagel, MD
- Kunal Sualy, MD
- David Tingley, MD
- Joby Varghese, MD
- Guy Williams, DO
- Jasper Williams, MD

CRNA Update

Pandemic Response

Early in the COVID-19 outbreak, Nebraska Medicine was preparing for the potential surge of patients infected with the coronavirus. Staffing models changed, and every resource was evaluated. As a result, CRNAs were trained and deployed as “rovers” to intensive care units to work in a hybrid role of sorts. They assisted ICU nurses and physicians with their responsibilities, including sedation monitoring and adjustments, providing hemodynamic assistance, preparing medication, transporting and more. Every CRNA in the department served in an ICU at some point during May and June until the staffing model was no longer needed.



Tiffany Olson, associate director of nurse anesthesia

“This was all about being a team and responding to a true crisis,” said Tiffany Olson, associate director of nurse anesthesia. “When the hospital needed skilled labor to support the surge in demand, our talented CRNAs were more than ready to answer the call.”

Additionally, leaders noted the teamwork and flexibility demonstrated by all to ensure each CRNA was able to tend to their home responsibilities during the crisis, such as managing home schooling, exposure quarantines, wellness needs and more.

Extraordinary Nurse

CRNA Emily Glaser was nominated by her peers and selected by department leaders as 2020’s Extraordinary Nurse from the Department of Anesthesiology. Nominators and supervisors touted her success with SRNAs, noting that her contributions likely influenced some students to pursue employment with Nebraska Medicine. Additionally, Glaser revised both new student onboarding and daily clinical assessment processes for SRNAs, ensuring students had an abundance of tools for success. Additionally, Glaser enhanced the staff CRNA onboarding process.



Emily Glaser, CRNA

Glaser’s supervisors referred to her as a “wizard with EPIC’s charting system,” and noted that colleagues often seek her out to gain knowledge on the system, along with our organization and standard of care processes. Above all, colleagues reported that Glaser is exceptionally kind and compassionate to both her patients and colleagues.

Leadership



CRNA Christan Ford was elected by her peers as president of the Nebraska Association of Nurse Anesthetists.

president to help leadership seamlessly and efficiently transfer. Ford’s term runs from October 2020 through October 2022. Many Nebraska Medicine CRNAs are current or past leaders in the NANA. Meagan Fremi currently

In April 2020, CRNA Christan Ford was elected president of the Nebraska Association of Nurse Anesthetists (NANA). The role encompasses multiple years of leadership within the organization, as presidents hold titles and job responsibilities of president elect, president and immediate past

serves as secretary/treasurer, Kris Rhode is the immediate past president, and Laura Oseka, Nicolas Stalnaker and Troy Anderson are board members.



Tim Glidden, director of nurse anesthesia

“I remain remarkably proud of our team of CRNAs,” said Tim Glidden, director of nurse anesthesia. “They continue to raise the bar at every opportunity and rise to the occasion in the face of overwhelming hardship.” ❤️



New Members & Promotions

The Department of Anesthesiology proudly welcomed the following team members in the 2019-2020 academic year:

PHYSICIANS

Multispecialty Anesthesiology

Skye Bakker, MD
Matthew Hagge, DO

Pediatric Anesthesiology

Brittany Brown, MD
Muhammad Rafique, MD
Kunal Sualy, MD

CRNAS

Michael Bragg
Nathan Cromer
Luke Goedert
Elaina Knowles
Andrew Kummer
Sara Park
Keyur Patel
Vanessa Rodriguez

PHYSICIAN ASSISTANTS

Christa Nelson

Congratulations to the following faculty members who were promoted in academic rank on July 1, 2020:

ASSOCIATE PROFESSOR

Michelle LeRiger, MD
Thomas Lockhart, MD
Kyle Ringenberg, MD
Gurudutt Pendyala, PhD
(with tenure)

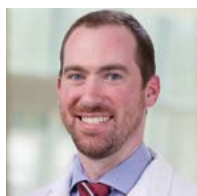
ASSISTANT PROFESSOR

Kristin Wakin, MD

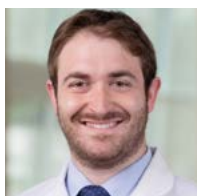
Congratulations, Graduates!

Residents and fellows of the graduating class of 2020 share their career plans following graduation.

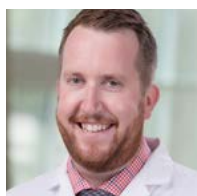
Residents



Carter Mohnssen, MD
(Chief Resident)
Memorial Health System,
Colorado Springs, Colo.



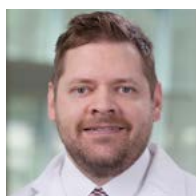
Sean Rajnic, MD
(Chief Resident)
Critical Care Fellowship,
UNMC



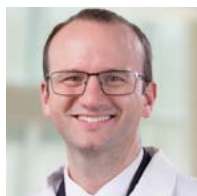
Brandon Alex, MD
Cardiothoracic Anesthesiology
Fellowship, UNMC



Amber Guck, DO
Pain Medicine Fellowship,
UNMC



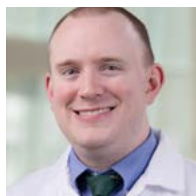
Nathan Schneider, MD
St Francis Hospital System,
Tulsa, Okla.



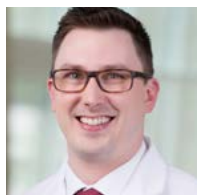
Marcus Arthur, MD
Missoula Anesthesiology, PC,
Missoula, Mont.



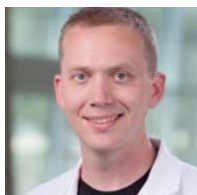
Mackenzie Laurila, DO
Pediatric Anesthesiology
Fellowship, UNMC



Zack Smith, MD
Pain Medicine Fellowship, UNMC



Nicholas Beare, MD
Medical Anesthesia, Ltd,
Minneapolis, Minn.



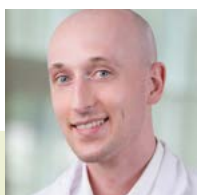
Ryan Nimick, MD
Private Practice at Abbott
Northwestern, Minneapolis, Minn.



Trevor Wilke, MD
Transplant Anesthesia
Fellowship, UNMC



Gregory Campbell, MD
Rocky Mountain State Anesthesia
Providers, Fort Collins, Colo.



Andy Peck, MD
North Kansas City Hospital,
Kansas City, Mo.

Awards

**Brad Paulson Award for an
Outstanding Medical Student in
Anesthesiology**

Megan Rolfzen

CBY Teacher of the Year Award

Weston Ross, DO
Department of Emergency Medicine

**CA1-CA3 Teacher of the
Year Award**

Kristin Wakin, MD

**Certificates of Academic
Excellence (75th percentile
or greater on ABA In-Training
Exam)**

Sagar Bansal, MBBS

Gregory Campbell, MD

Jae Cauble, DO

Clayton Damme, MD

Redgy Fuller, DO

Codi Guck, DO

Ryan Nimick, MD

John Riley, MD

Blaine Schlawin, DO

Zack Smith, MD

Christian Sun, MD

Michael Warden, MD

Levi Zehr, MD

Congratulations, Graduates! (Cont.)

Fellows

Cardiothoracic Anesthesiology



Alyssa Green, DO
Anesthesiology Associates,
Sioux Falls, S.D.



Brendan Mitchelson, MD
Anesthesia Associates of
Kansas City, Overland Park, Kan.



Harrison Wurster, MD
Associated Anesthesiologists, PA,
St. Paul, Minn.

Critical Care



Stephen Brannan, MD
Cardiothoracic Anesthesiology
Fellowship, UNMC



Karolyn Fox-Dahl, MD
MidPlains Anesthesiology and
Critical Care Group, Kearney, Neb.

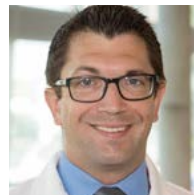


Zeid Kalarikkal, MD
Aurora St Luke's,
Milwaukee, Wis.

Pain Medicine

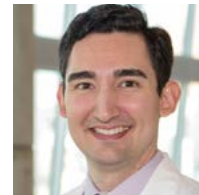


Ryan Birkland, DO
Central States Pain,
Des Moines, Iowa



Marshall Ladd, DO
UNMC Faculty,
Omaha, Neb.

Pediatric Anesthesiology



Gabriel Gallegos, MD
Children's Hospital & Medical Center,
Omaha, Neb.



Britta Dosland, MD
Associated Anesthesiologists, PA,
St. Paul, Minn.

To abide by social distancing guidelines during the COVID-19 pandemic, faculty, staff, and house officers celebrated graduation with a video.

View it at unmc.edu/anesthesia/people/resident-alumni, or on the "UNMC Anesthesiology" YouTube channel.

At right, Co-Chief Resident Carter Mohnssen, MD, is presented his diploma by Residency Program Director Andrea Dutoit, MD, at his home.



Incoming Residents

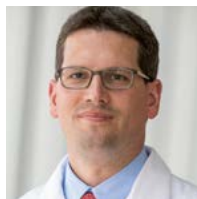
On Match Day the Department of Anesthesiology welcomed eight new residents to join in July 2020 as CBYs, and two advanced residents to join in July 2021 as CA1s. The 10 residents will form the class of 2024.

Traditional Match Day ceremonies were cancelled due to the COVID-19 pandemic. Residents received an email at 11 a.m. CST notifying them of their matched program. Many celebrated privately with loved ones, following the CDC's guidelines to gather in groups fewer than 10 people.

We are pleased to welcome:



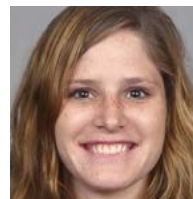
Theodore Black, MD
University of Colorado



Dan Nicholls, MD
University of Washington



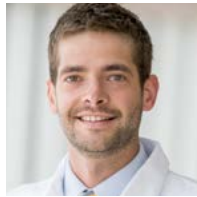
Megan Rolfzen, MD
UNMC



Michaela Randall, MD
Northeast Ohio Medical University
(Advanced)



Joel Hachiya, MD
UNMC



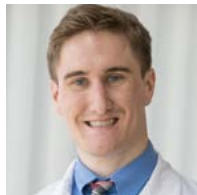
Kevin Rance, MD
University of South Dakota



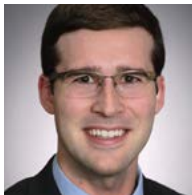
Adam Zobel, DO
Des Moines University



Logan Harrold, MD
University of Kansas



Lucas Reitz, MD
Oakland University William Beaumont



Zachary Franco, MD
Creighton University (Advanced)

House Officer Appreciation Week

The Department of Anesthesiology sweetened the GME's House Officer Appreciation Week with a celebration of its own that included break room treats and more.

At right, Associate Program Directors Nicholas Heiser, MD, and Katie Goergen MD, sign personalized notes to each resident that were delivered with a custom sugar cookie.



Incoming Fellows

Cardiothoracic



Brandon Alex, MD
UNMC



Steve Brannan, MD
UNMC

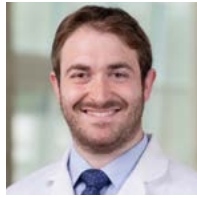


Tammer Ghaly, MD
University of Missouri



Kristina Koch, DO
University of Kansas Medical Center

Critical Care



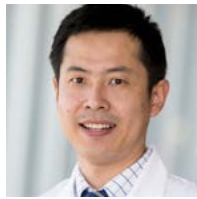
Sean Rajnic, MD
UNMC



Chandni Ravi, MBBS
Rutgers New Jersey Medical School



Cole Wrisinger, DO
University of Missouri-Kansas City



Brian Zhao, MD
University of Louisville

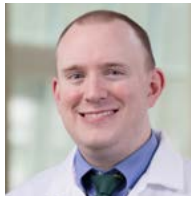
Pain Medicine



James Dreessen, MD
The Ohio State University



Amber Guck, DO
UNMC



William (Zack) Smith, MD
UNMC

Pediatric



Mackenzie Laurila, MD
UNMC

Regional Anesthesia & Acute Pain Management



Raime Robinson, MD
University of Mississippi Medical Center

Transplant Anesthesiology



Trevor Wilke, MD
UNMC

Dr. Duhachek-Stapelman Named Educator Laureate

Amy Duhachek-Stapelman, MD, vice chair of education, was named UNMC's 2019 – 20 Varner Educator Laureate in a Feb. 20 ceremony at the Durham Research Center Auditorium, alongside fellow education awardees.

The Varner Educator Laureate Award recognizes an individual with sustained achievement in education who has significantly improved the UNMC learning environment through the provision of outstanding educational experiences.

"Dr. Duhachek-Stapelman is a stalwart champion of our department's educational mission," said Department of Anesthesiology Chair Steven J. Lisco, MD. "She is a patient, empathetic and selfless educator who possesses innate ability to identify our learners' needs. She is incredibly deserving of this outstanding honor."

Amy Duhachek-Stapelman, MD, arrived at UNMC as a medical student in 1998, where she later completed anesthesiology residency and joined faculty. Her initial plan was to stay a year or two, but, instead, fell in love with teaching.

"I especially have a passion for helping people who are struggling," she said. "Of course, I like



Jerald Varner, PhD, (right) presents Amy Duhachek-Stapelman, MD, with UNMC's 2019 – 20 Varner Educator Laureate award

to help everybody learn, but I have a soft spot in my heart for those who are trying so hard to understand concepts and missing the mark. It may be that it is not being explained in a way that makes sense to them, or maybe they don't have their study strategies quite figured out yet. Helping these students to develop new ways to think about concepts and understand them is something I find really rewarding."

During the award ceremony, Duhachek-Stapelman used the opportunity to commend

the work of all department educators.

"We have many amazing department members who are dedicated to education and genuinely care about the outcomes of our trainees," Dr. Duhachek-Stapelman said. "When you're an academic physician, you have the opportunity to positively impact thousands of patients not only through the care you provide, but through the education you give to trainees who then go on to deliver care to their future patients." ❤️



Dr. Duhachek-Stapelman, who has been vice chair of education since 2016, has been part of the growth of the academic anesthesiology programs in the following ways and more:

- Expansion of fellowship programs from none in 2012, to now offering five ACGME-accredited fellowships in 2020. Additionally, the overall number of fellows has grown to 16.
- Addition of the Fellow Education Series, a supplemental program with roughly eight meetings dispersed through the fellowship year that covers fellow-targeted topics such as financial planning, insurance education, introduction to research, developing oneself into an educator, and evaluation and provision of feedback to trainees, and more.
- Creation of an award-winning feedback mechanism for both trainees and faculty.
- Creation of a library of online, interactive, and UNMC-specific didactics.
- Expanded activities to prepare for board examinations through a full-length applied exam simulation and an online mechanism that pairs trainees with volunteer faculty in one-on-one practice sessions.



Amy Duhachek-Stapelman, MD, vice chair of education, at left, holds a discussion with those in the inaugural fellowship education series, Brittany Brown, MD, and Tal Sandler, MD.

Diverse Skills Taught in Fellowship Education Series

Throughout the academic year, fellows from multiple anesthesiology subspecialties gather to learn varying skills that will help them throughout their careers.

They gain a basic, foundational knowledge in relevant topics like business management, reputation building, research, teaching, and wellness. The second half of the monthly series is largely focused on preparing for board examinations.

“Many of our faculty go above and beyond to provide the best education possible for our learners, and the fellowship education series is an example of that,” said Amy Duhachek-Stapelman, MD, vice chair of education.

Faculty hope the series helps fellows find the right place to practice, negotiate contracts, acquire proper malpractice insurance, lead in their area of expertise, and enjoy a long and successful career free of burnout. Some topics covered fulfill requirements for multiple programs, relieving the need for each fellowship director to create and present content separately.

The series fosters opportunity for collaborative research or quality improvement projects amongst fellows and faculty. It also builds relationships amongst trainees, some of whom are only in Omaha for one year and mostly only interact with fellow subspecialists during the workday.

“This dedicated time allowed us to explore specific topics that we wouldn’t be exposed to elsewhere within our training,” said Brittany Brown, MD, who is currently a pediatric anesthesiologist in the department and director of medical student rotation. Dr. Brown was a pediatric anesthesiology fellow during the inaugural Fellowship Education Series in academic year 2018 – 2019.

“Topics that I found particularly useful included financial independence, oral board practice and the longitudinal exposure to research methods. The series demonstrates the importance that both UNMC and the department place on education and developing well-rounded physicians.” ❤️

Dr. Wang Awarded \$2.2 Million Grant, Named Margaret R. Larson Professor of Anesthesiology

Department of Anesthesiology Researcher Hanjun Wang, MD, was recently awarded a research project grant (R01) from the National Institutes of Health (NIH) worth nearly \$2.2 million.

The funding, which began in April 2020 and runs through March 2024, allows Dr. Wang's lab to focus on the interconnectedness of sensory nerves in the lung and heart. This R01 is Dr. Wang's fourth active R01 funding from the NIH, and sixth overall. In January 2020, he and Cardiovascular Physiology Researcher Irving H. Zucker, PhD, received an R01 worth \$2.3 million. Dr. Wang's current, multi-year funding in his laboratory tops \$6.2 million.

Dr. Wang's research largely focuses on sensory nerves in association with multiple organs and the role they play in reaction to disease or injury. His research can be divided into three major themes: the sensory nerve's role in relation to the heart and kidneys, to the lungs and heart, and to the skeletal muscle and other organs. In all projects, researchers examine interventions that deactivate the sensory nerve in an attempt to enhance essential organ function or alleviate pain.

"As demonstrated by the impressive funding he has acquired, Dr. Wang is examining important questions that could change the way anesthesiologists around the world care for their patients," said Department of Anesthesiology Chair Steven J. Lisco, MD. "His research aligns perfectly with the department's mission to deliver extraordinary clinical care and perform innovative research, and we are very fortunate to have him here."

In February, Dr. Lisco appointed Dr. Wang as the Margaret R. Larson Professor of Anesthesiology. The five-year appointment began February 1, 2020, and runs through January 2025. The professorship will be renewable for another five-year term at that time, based upon satisfactory performance and evaluation.

"Receiving this honor is a great confidence for me, and it reflects the bravery of our chair," said Dr. Wang. "The support Dr. Lisco has given me is unbelievable, and I never could have been so successful without it. I'm looking forward to proving that he made a very wise decision."

Faculty who hold endowed positions get to spend the annual interest generated by the endowment fund in a manner specified by the fund originator. Dr. Wang put his endowment funds toward the purchase of a state-of-the-art air pollution tower, which will aid with current and future pulmonary research, and possibly provide opportunity to apply for Environmental Protection Agency grants. Most lung injury is chronic, such as from air pollution. This machine recreates moderate chronic lung injuries. Half of the funding for the \$150,000 air pollution tower was provided by the College of Medicine. ❤️



Hanjun Wang, MD

Associate Professor,
Anesthesiology

Dr. Wang earned his medical and master of science degrees at Nanjing Medical University in China, then came to UNMC as a postdoctoral fellow in the Department of Cellular & Innovative Physiology in 2007. He joined that department as faculty in 2012, working closely with Dr. Zucker on cardiovascular research. In April, 2016, Dr. Wang joined the Department of Anesthesiology where he expanded his research to include the sensory nerve's role in the lungs.

“Dr. Wang is examining important questions that could change the way anesthesiologists around the world care for their patients.”

— Steven J. Lisco, MD



Sowmya Yelamanchili, PhD

Associate Professor, Anesthesiology

Dr. Yelamanchili Added to Anesthesiology Research Lineup

The Department of Anesthesiology welcomed Sowmya Yelamanchili, PhD, in 2019, an assistant professor and basic science researcher focused on neurodegenerative diseases and drug abuse.

Dr. Yelamanchili's previous role was in UNMC's Department of Pharmacology and Experimental Neuroscience, where she spent 11 years developing her research. She has received multiple NIH grants, including her R01 grant that focuses on the role of extracellular vesicles in chronic methamphetamine abuse. She now hopes to shift her work into translational research. Her move to the Department of Anesthesiology aligns with her interest in studying the long-term effects of opioids and anesthetics. In the next five years, her goal is to expand her research program to investigating the long-term effects of anesthetics.

"Basic science researchers and clinicians need to learn a lot from the current opioid epidemic, and come together to find a solution," Dr. Yelamanchili said. "As basic science researchers, we can be shielded from real-life problems and only know the molecular aspects of drugs in preclinical models--not how they impact people.

"Similarly, clinicians are often unaware of the long-term effects of the drugs being administered to alleviate pain or to put patients under sedation. With this move, I hope to get closer to clinicians and help fill in the gap between basic and clinical research."

Dr. Yelamanchili won UNMC's New Investigator Award in 2017. The award goes to outstanding scientists who, in the previous two years, secured their first funding from the National Institutes of Health, the Department of Defense, or other national resources, and have demonstrated scholarly activity.

Drug abuse is a debilitating disease, and yet today we stand very far from a cure, says Dr. Yelamanchili. The knowledge gained through her lab's studies could be used to develop novel therapeutic targets and therapies for drug addiction. ❤️



Initial members of Dr. Yelamanchili's lab included (from left) Katherine Odegaard, Farah Shahjin, Sowmya Yelamanchili, PhD, Subhash Chand, PhD, and Austin Gowen.

Dr. Pendyala Named 2020 Gilmore Award Recipient

Gurudutt 'Guru' Pendyala, PhD, associate professor, anesthesiology, wants to crack the mystery of drug addiction.

His research looks at how drugs, particularly opioids and psychostimulants, affect the brain at the molecular and cellular levels. For this novel and well-funded research, Dr. Pendyala was the 2020 recipient of the Joseph P. and Harriet K. Gilmore Distinguished New Investigator Award.

"It's a big honor to be recognized with this award in the name of the legendary Dr. Gilmore, who was the chair of physiology and a visionary in renal and cardiovascular research," he said. "There have long been close ties and research collaborations between the Departments of Anesthesiology and Physiology, and I'm fortunate to work with these teams."

At the time of the award presentation, Feb. 2020, Dr. Pendyala and his laboratory staff were juggling eight interdisciplinary and multi-institutional projects with total funding topping \$16 million.

"I have a wonderful team of researchers and a supportive department and chair, Dr. Steven

Lisco," Dr. Pendyala said. "His vision has paid dividends in expanding the basic research program in the clinical department. I also can't say enough about the university leadership team. Their support is phenomenal."

Through this research, Dr. Pendyala's hopes to contribute to the development of novel therapeutics that improve brain function by reducing inflammation associated with long-term addiction to drugs.

Dr. Pendyala first became interested in how the brain works while earning his doctoral degree in neuroscience. He found his niche in studying the long-term effects of drug abuse and has focused his attention to the role sex differences play in addiction. Through this research, Dr. Pendyala had a novel finding that females progress more quickly to regular use, greater dependence and a higher relapse rate with drugs. These findings led him to detail the effects of opioid misuse during and after pregnancy. ❤️



Gurudutt Pendyala, PhD

Associate Professor, Anesthesiology



Colleagues and family gather to celebrate the 2020 Gilmore Award presentation to Gurudutt Pendyala, PhD, on February 25, 2020. From left are Bradley Britigan, MD, dean of the College of Medicine, Steven J. Lisco, MD, chair of the Department of Anesthesiology, Sowmya Yelamanchili, PhD, Department of Anesthesiology researcher and Dr. Pendyala's wife, Dr. Pendyala's children, Dr. Pendyala, and Howard Fox, MD, PhD, senior associate dean in the College of Medicine and Dr. Pendyala's mentor.

2019 – 2020 Department of Anesthesiology Publications

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 **The COVID-19 pandemic brought massive consequences. Many of our faculty faced extraordinary clinical responsibilities in a rapidly changing environment, double the responsibilities at home, and stress associated with the uncertainty of our changing world. The research world was also shaken by this global emergency. I am proud of our scholars for their accomplishments in such challenging times.** — Steven J. Lisco, MD

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Thank you for your courage.

The Department of Anesthesiology extends deep gratitude to all who made the world a more safe, healthy and equitable place in the face of great adversity. We have seen unparalleled challenges in recent times. What was also unparalleled was your courage, determination and love. Thank you.

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