Message from the Chair

I’m tremendously proud of the accomplishments of the Department of Anesthesiology over the past five years. Through rapid growth, we have championed our mission to deliver high-quality and compassionate medical care, provide premier educational programs, and perform innovative research. In our inaugural issue of the Anesthesiology Annual Report, you will read about these impressive and ongoing achievements.

Growth in clinical care over the past five years has been nothing short of extraordinary. Anesthetic cases increased by nearly 70% with coincident increases in ASA units and gross charges. To achieve and sustain this impressive growth, the department has doubled in size and organized into subspecialty divisions.

The Department of Anesthesiology’s global outreach and collaboration with Medical Missions for Children continues to impact more patients and physicians each year. Our third and most recent surgical trip to Rwanda resulted in 33 thyroidectomies for goiter on Rwandan patients who have limited access to specialized surgical care. I encourage you to read more about the team members who made this impact possible in this report.

Of course, the education of our residents and fellows remains a top priority. Our fellowship programs are growing, and work is currently underway to develop fellowships in Acute Pain and Regional Anesthesiology, as well as Obstetrical Anesthesiology. These programs will help meet the demands of our residents, our state, and our region. In addition, the newly developed Learning Portal, curated by our new Director of Educational Development and Academic Technology, Dr. Faye Haggar, is in full use. The Learning Portal is an online resource that supplements resident and fellow curriculums with dynamic learning modules using the latest technology.

In this report is a list of the department’s peer-reviewed publications over the past academic year. It has been the most successful year to date for our clinicians and scientists with 40 published manuscripts. Each division has truly excelled with multiple noteworthy publications. I encourage you to review the impressive work of our faculty over the past year.

Basic and translational science is growing rapidly in the department. Department of Anesthesiology scientists are performing exciting work funded by sought-after grants, such as those from the National Institute of Health. Take notice of the interesting and highly translatable research published this year by Hanjun Wang, M.D., and Gurudutt Pendyala, Ph.D. Both of these creative researchers are working to define mechanisms and therapies directed at acute and chronic pain, opiate use and abuse, and cardiopulmonary disease. New to the department’s research group is Dr. Alicia Schiller, who is currently focused on creating UNMC’s first human physiology lab. We look forward to the exciting research certain to come from the Schiller laboratory.

Finally, I would be remiss if I did not thank the generosity of Dr. Gail and Michael Yanney and Drs. Myrna and James Newland. The department is incredibly grateful for their vision and support. It was through their kindness and generosity that the Department of Anesthesiology announced the addition of two new endowed professorships in 2018—The Dr. Gail Walling Yanney Endowed Professor of Anesthesiology, held by Cathleen Peterson-Layne, M.D., Ph.D., and the Myrna Newland, M.D., Endowed Professor of Anesthesiology, which I have the honor of holding.

I thank you for your interest in the Department of Anesthesiology. I truly hope you enjoy reading about our successes over the past academic year.

Steven J. Lisco, M.D.
Myrna Newland, M.D., Endowed Professor of Anesthesiology
Chairman, Department of Anesthesiology
University of Nebraska Medical Center
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: Cardiac Anesthesiology, Critical Care, Obstetrical Anesthesiology, Pediatric Anesthesiology, and Pain Management.

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, and Chronic Pain Management. Additionally, the department offers non-ACGME fellowship training in perioperative echocardiography.
Department Builds Foundation in Echocardiography

The Perioperative Echocardiography Consult Service has proven indispensable, growing in recent years as a result of demand and its contribution to efficient patient care. The service utilizes specially-trained anesthesiologists to perform echocardiograms on at-risk surgical patients in the preoperative clinic, assessing perioperative risk and establishing a plan to mitigate that risk. Additionally, the service provides perioperative imaging support in the form of transthoracic echocardiography, transesophageal echocardiography and point-of-care ultrasound for patients.

“The service expands access to echocardiography and allows us to deploy the appropriate resources in advance, rather than make these discoveries during surgery” said Nick Markin, M.D., director of perioperative imaging.

The service, which is staffed Monday through Friday, has been in its current form since January 2018. Prior to having a dedicated staff physician, faculty were required to perform multiple roles simultaneously when perioperative imaging was needed. If a patient displayed risk factors during the perioperative evaluation, the surgery was often postponed until the patient could be assessed by Cardiovascular Medicine. If urgent surgery was required, often it would be performed without the potential insight provided by an echocardiogram. With the creation of the echo consult service and specialized anesthesiology teams, patients are now receiving specialized care from their anesthesiologists.

“What we learned is that the service is very valuable because when we weren’t available, people wanted to know where we were and what they should do to minimize risk,” Dr. Markin said.

HISTORY

Echocardiography first worked its way into UNMC’s anesthesiology department thanks to the vision of John Tinker, M.D., professor and chairman of the department from 1997 to 2008. Dr. Tinker, a cardiac anesthesiologist, sent Sasha Shillcutt, M.D., and Tara Brakke, M.D., to the University of Utah’s department of anesthesiology to train in perioperative echocardiography. Drs. Shillcutt and Brakke brought this valuable tool back to UNMC, integrating the technology into their practice and educating coworkers. It was through their dedication and efforts that perioperative echocardiography became the academic focus of cardiac anesthesiology faculty at UNMC. This leadership ultimately helped produce multiple peer reviewed publications, invitations to speak at national conferences, creation of a fellowship program, and a national reputation for excellence.

Before long, the demand for perioperative echocardiographic assessment of surgical patients exceeded the availability of the cardiac anesthesiology physicians. The department hired a fulltime sonographer, Walker Thomas, in 2013. In addition to streamlined echocardiography services, his presence facilitates opportunity for education and research in the department.

Every once in a while you find something that totally changes someone’s care and it gets you hooked. — Dr. Markin

Dr. Markin joined UNMC in July 2014 after completing an Adult Cardiothoracic Anesthesiology Fellowship at UNMC. Dr. Markin was the first Cardiac Anesthesiology fellow trained at UNMC. The year prior, he completed a Perioperative Echocardiography Fellowship at the University of Utah. In July 2017 he took over as director of perioperative imaging and the department’s educational echocardiography programs. Learning echocardiography was a turning point in Dr. Markin’s career, altering his path from surgeon to cardiac anesthesiologist.
“For the first time they had someone who was competent to go out and collect images,” Dr. Markin said. “Walker is probably the best sonographer I’ve ever worked with. He is phenomenal.”

Ultrasound images require interpretation, as not all aspects of the process are quantitative. Dr. Markin says a good sonographer not only captures good images, but is skilled at interpreting the images to identify issues and determine if more information is needed.

“If he sees something concerning he is competent enough to recognize that things are abnormal, and he gets additional information and brings that to us,” Dr. Markin said. “He’s been invaluable.”

Dr. Markin began reading perioperative echocardiograms in 2014 and assumed the role of Director of Perioperative Imaging from Dr. Shillcutt who had been serving since 2012. Dr. Shillcutt, Dr. Markin and Ellen Roberts, M.D., vice chair of clinical operations, worked together to ensure a trained anesthesiologist was always available to read echocardiograms in a dedicated role. Now there are 15 qualified attending anesthesiologists on the service providing perioperative consultations for Nebraska Medicine’s complex surgical patients.

“I cannot give Sasha and Tara enough credit for this,” said Dr. Markin. “If it wasn’t for the two of them teaching others, doing echo’s in their free time, publishing their efforts and integrating a sonographer into the team, we wouldn’t have the ability to provide this valuable service to our patients.”

EDUCATION

In addition to providing enhanced care for patients, the perioperative echocardiography consult service provides a valuable educational experience for anesthesia residents and fellows. CA1 residents spend a month-long rotation learning echocardiography aside an echocardiography fellow and sonographer.

The first echocardiography fellow was Chantal Mercier Laporte, M.D. Dr. Mercier Laporte joined Nebraska Medicine in July 2017. She completed medical school and residency at Université de Montréal, and a Vascular Anesthesiology fellowship at University of Ottawa. Dr. Laporte joined the department faculty in July 2018 as an assistant professor.

This depth of anesthesiology staff who are skilled in echocardiography ensures patients have access to a skilled sonographer and doctors who are adept at identifying issues.

“Imagine, in three years every single resident running through the ORs will know how to do transesophageal and transthoracic echocardiography,” Dr. Markin said. “It’s pretty exciting.”

Although echocardiography fellowships are not ACGME-certified, fellows seek out this additional training to improve patient care.

TESTIMONIALS

During a vascular procedure on a young patient, Kyle Ringenberg, M.D., performed a transesophageal echocardiography via the perioperative echocardiography consult service. Even though this patient had multiple transthoracic echocardiograms prior to this procedure, none revealed the hole in their heart. A later procedure would close the hole in the heart.

“Dr. Ringenberg was available to detect this because we established the consult service,” said Dr. Markin. “This patient will get the hole in their heart closed, and it’s going to completely change the trajectory of their life.”

David Theil, M.D., a physician and former student of basic echocardiography course, found the training valuable while abroad.

“I try to use everything you and your team taught me. I did multiple TTEs while in Tanzania to either rule out disease or follow volume. It’s truly an invaluable skill for an anesthesiologist.”

Nick Markin, M.D., simulates a transesophageal echocardiogram with 2017-18 echocardiography fellow, Chantal Mercier Laporte, M.D.

Sonographer Walker Thomas uses himself as a model to train CA1 resident Sean Rajnic, M.D., in echocardiography procedures in the Perioperative Echocardiography Suite in Nebraska Medicine’s University Tower.
Critical Care Anesthesiologists Offer Constant Care

No matter what a critically ill or injured patient in the intensive care unit might need, an anesthesiologist-intensivist will be at their bedside to provide it, 24 hours a day and seven days a week. This is the brand of the department’s Critical Care division, and it has led to consistent success.

Anesthesiologists are especially expert at resuscitation of critically ill people, says Critical Care Division Chief Daniel Johnson, M.D. “Surgery renders people extremely critically ill,” Dr. Johnson said. “People will never be more critically ill than the time that they’re on the operating room table. The anesthesiologist needs to keep that person alive.”

Naturally, anesthesiologists are up for that task. However, it wasn’t always this way. As recently as 2007, patients in UNMC’s intensive care unit were treated solely by intensivists from the Department of Internal Medicine or Surgery.

In many academic health science centers across the United States and in Europe, anesthesiologists and intensivists are one in the same. However, many centers in the Midwest are still relatively unfamiliar with the concept of critically ill patients being cared for by anesthesiologists. Expanding the Department of Anesthesiology in this way was important to Department Chairman Steven J. Lisco, M.D., himself a critical care anesthesiologist.

“Over the course of the last ten years, the hospital has come to appreciate what anesthesiologists bring to this patient care realm,” Dr. Johnson said.

A paradigm shift came to Nebraska Medicine when round-the-clock availability of the attending physician began in July 2017. A faculty intensivist is always in the hospital, and is flanked by a fellow, resident or nurse practitioner on the Critical Care Anesthesiology (CCA) service. This availability is uncommon in most hospitals but makes sense at Nebraska Medicine, where the healthcare professionals of the CCA team routinely care for the most ill patients in a 200-mile radius. For example, these patients often are receiving heart and/or lung transplants, have a left ventricular assist device (LVAD), or are on extracorporeal membrane oxygenation (ECMO). Seconds count under these circumstances, so the 13 physicians and five nurse practitioners of the CCA team are immediately available.

Having more hands on deck has also resulted in enhanced education for residents and fellows. With more clinical staff available, residents and fellows are now benefitting from special case placement, daily lectures, faculty shadowing and more.

“It can’t just be challenging for the sake of getting work done. We want the residents to become better perioperative physicians because of the rotation,” Dr. Johnson said.

Deserving of thanks are our phenomenal nurse practitioners, Dr. Johnson said, who have tremendous critical care experience and make the whole service run smoothly.
Ambulatory Surgery Facilities Bring Growth

The Department of Anesthesiology has seen exponential growth across the board in the past four years, thanks in part to the demand for and development of freestanding ambulatory surgery facilities.

The clinical expansion stems from the growing demand for outpatient surgery, technological advances in outpatient surgical procedures, and a drive for enhanced patient experience to remain competitive in a rapidly expanding Omaha market.

“In today’s healthcare reality, there is a huge upward trend in demand for outpatient care and ambulatory medicine,” said Allyson Hascall, M.D., director of ambulatory anesthesiology. “Nebraska Medicine is keeping up with that trend by providing patients and their families this opportunity to receive extraordinary care in a conveniently accessible facility on multiple campuses.”

Nebraska Medicine ambulatory surgery facilities include the Fritch Surgery Center, Village Pointe Outpatient Surgery Center, Village Pointe Aesthetic Surgery Center, and the Bellevue Medical Center.

The Fritch Surgery Center in the Lauritzen Outpatient Center, on UNMC’s main campus, was completed in November 2016. The center features seven currently utilized operating rooms with an option to add up to three more in future expansions. Fourteen anesthesiologists are currently assigned to clinical service at Fritch along with a rotating group of CRNAs. The site predominantly performs orthopedic and ophthalmologic procedures.

Village Pointe Outpatient Surgery Center, near 180th and Dodge Streets, opened in March 2017 and has three operating rooms with an option to expand to four. The anesthesia care team at Village Pointe staffs primarily ear, nose and throat surgeries, as well as surgical oncology cases.

The Bellevue Medical Center, near Highway 370 and South 25th Street, was acquired by Nebraska Medicine in 2014. It features four currently utilized operating rooms with the possibility of adding four more, though they are not exclusively used for ambulatory surgeries. The site has 10 rotating anesthesiologists, six fulltime CRNAs and other CRNAs rotating from main campus as needed. The team provided services for 4,688 surgical procedures in fiscal year 2018.

“Making these adjustments is not only necessary to meet demand, it’s necessary to remain competitive in the medical field,” said Dr. Hascall. “When patients are preparing for an elective procedure, they have time to shop around.”

In the past decade, Nebraska Medicine didn’t have any freestanding ambulatory surgery centers. Moving ambulatory surgery facilities off main campus created a win-win situation for both the hospital and patients. When ambulatory surgeries are performed in a facility dedicated to these types of procedures, fewer resources are used as minor surgeries don’t require many of the hospital-based resources. Throughput of patients is increased at ambulatory facilities, contributing to more cost-effective and efficient care. Patients appreciate having their minor and elective procedures in a private setting away from main campus where seriously ill patients are treated. They enjoy the specialized care and patient-centered approach in the ambulatory environment.

Department of Anesthesiology physicians and CRNAs staffing the Fritch Surgery Center include Allyson Hascall, M.D., Nick Heiser, M.D., Carol Fennell, Andrew Ingemansen, M.D., Eric Troudt, Anne Donnelly-Haasch, and Platt Niebur, M.D.

Department of Anesthesiology Anesthetic Cases

<table>
<thead>
<tr>
<th></th>
<th>Village Pointe</th>
<th>Bellevue</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY13</td>
<td>687</td>
<td>n/a</td>
</tr>
<tr>
<td>FY14</td>
<td>724</td>
<td>n/a</td>
</tr>
<tr>
<td>FY15</td>
<td>757</td>
<td>3,273</td>
</tr>
<tr>
<td>FY16</td>
<td>912</td>
<td>4,881</td>
</tr>
<tr>
<td>FY17</td>
<td>2,222</td>
<td>4,657</td>
</tr>
<tr>
<td>FY18*</td>
<td>2,160</td>
<td>4,676</td>
</tr>
</tbody>
</table>

*Projected
Acute Pain Service Tackles Patient Satisfaction

In the past four years, Acute Pain Service (APS) anesthesiologists used regional analgesia and multimodal pain medication management strategies to improve pain for hospitalized patients.

The endeavor began in 2014 when Director of Acute Pain Services Thomas Nicholas, M.D., initiated efforts to improve patient experience by focusing on perioperative pain management. Since then, the APS team has grown to perform roughly 15 peripheral nerve blocks and 20 inpatient consults a day.

“Dr. Lisco has been very supportive of APS endeavors and expanding the service,” Dr. Nicholas said. “He’s a tireless advocate for pain patients.”

The APS consists of eight doctors, two physician assistants and two rotating residents. They provide comprehensive acute pain care by means of regional blocks and best practice medication management. To maximize efficacy and reduce patient risk, all peripheral blocks are ultrasound guided, utilizing one of eight ultrasound machines assigned to the APS team.

The most common service the APS provides to Nebraska Medicine patients is comprehensive pain management for surgical procedures, such as major orthopedic, abdominal or thoracic surgeries. Regional blocks are employed to reduce the need for post-surgical narcotic medications and their subsequent short-term complications, such as over-sedation, nausea and respiratory depression.

Many times, multimodal medication management is simultaneously utilized by the APS, especially when a patient isn’t a candidate for perioperative regional anesthesia. An APS medication regimen focuses on use of opiate sparing strategies and non-opioid analgesic medications to minimize use of opioids.

Utilization of these atypical medications required significant policy changes, institution of safety measures, and nursing education. The APS’s collaborative partners in pharmacy, Katharine Reisbig, PharmD, and Nick Crites, PharmD, have been instrumental in ensuring the availability and safe implementation of many of these regimens, said Dr. Nicholas.

“No one likes to see anyone in pain,” Dr. Nicholas said. “We don’t entirely get rid of pain, but we make it manageable. APS is not the answer to everything, but hopefully we spark a desire to use something other than massive amounts of opioids.”

Before 2014, the service mostly provided regional blocks only when requested. Now, Dr. Nicholas and his team work closely with the nursing and surgical teams to identify patients who would benefit from additional pain services based upon specific criteria such as a history of complex pain issues, chronic opioid use, or psychiatric illnesses. This educational component was a massive undertaking that spanned years with training and policy changes throughout Nebraska Medicine.

“People are becoming aware that APS can help shepherd the patient through their experience in the hospital, and hopefully improve their pain and improve their overall outcomes,” Dr. Nicholas said.

The presence of the APS has inspired outreach in other areas to improve patient experience at Nebraska Medicine. A group of nurses formed the Pain Resource Network, focusing on ensuring contemporary pain management education is being disseminated and utilized across the clinical expertise. A multidisciplinary APS steering committee searches for ways to continually improve pain care through educational endeavors and institutional policy changes that keep Nebraska Medicine at the cutting edge of the evolving field of pain medicine.

Other factors influencing pain ratings can be as simple as improving hospital food or ensuring cleanliness, Dr. Nicholas said. Every hospital employee may have a role in treating pain by ensuring that the overall patient experience is extraordinary. Educating patients and family members on expectations of pain has also been helpful in improving patient experience.

“It’s not just one magic bullet,” Dr. Nicholas said. “A pill, block or epidural alone won’t fix everyone’s pain. You have to provide individualized patient therapy.”
Chronic Pain Service Impacts Quality of Life

Chronic Pain providers in the Department of Anesthesiology enjoy bringing patients back to life, so to speak.

Madhuri Are, M.D., division chief of pain medicine, says she and the four other providers on the chronic pain service are fortunate to see patients’ personalities restored once their pain has been relieved.

“Improving the quality of life and impacting how patients relate to their loved ones is the most rewarding thing,” Dr. Are said. “We’ve seen some patients come in frustrated and angry. We take care of their pain and they transform into someone different. The family members accompanying our patients often express their happiness to have their loved one back.”

The chronic pain team operates primarily on an outpatient basis, mostly on Nebraska Medicine’s Village Pointe campus, as well as the North Doctor’s Building, and Nebraska Medicine Bellevue and Brentwood Clinics. The chronic pain faculty have several tools in their arsenal to help patients struggling with long-term pain.

The service is non-narcotic, meaning doctors provide blocks, which are injections or non-narcotic medical management, instead of opioid medications. They average 70 blocks per week and offer to see patients on a same-day basis. This type of immediate care can be life-changing for patients and their loved ones.

“It is very rewarding to be able to give someone their quality of life back,” said Dr. Are. “They get back to work and become more functional in their communities. Additionally, we aim to taper off their opioid use to prevent an overdose.”

The newly established opioid tapering clinic provides care for patients who have received inpatient pain management services and have been discharged from the hospital with opioid therapy. The clinic focuses on reducing dependency on opioids for pain management. Medication-assisted therapies are offered by physician experts with drug regimens specifically addressing the unique issues of patients on opioids.

Additional services provided by the clinic include regenerative therapies such as platelet-rich plasma injections. The patient’s blood is drawn, spun down to a platelet-rich substance and injected into the pain site to facilitate the body’s natural healing process without any synthetic substances such as steroids. The benefit for patients is that a limited number of injections may be needed per lifetime, compared to cortisone shots that can be as frequent as every three months for life.

Patients who require more aggressive management of neck and back pain are offered more invasive procedures, if appropriate. They include spinal cord stimulation, intrathecal pump management for cancer pain, and cement augmentation for compression fractures due to osteoporosis or malignancy. Patients benefit from kyphoplasty or vertebroplasty by injection of cement into the painful and compressed vertebral body fracture. Most of these patients are able to walk pain-free within hours.

Chronic pain became a subspecialty within anesthesiology in July 2016 as a result of growth of services, such as those featured above. The primary focus of patient care is safety and compassion. The goals are to help patients reintegrate back into the community with an improved quality of life, while minimizing the use of opioids for the management of pain.
Department-Wide Education Overhaul Mobilizes Content

The Department of Anesthesiology is responding to resident and fellow feedback with a major overhaul in the presentation of educational materials to trainees. The multi-year overhaul focuses on increasing digital learning opportunities and decentralizing didactics in favor of mobile lessons that can be digested quickly in relevant scenarios.

The plan, presented in 2016, was based on a two-year timeline that included the hiring of an education instructional designer, the development of an E-learning platform, and creation of enduring digital learning documents and modules. The goal is to provide anytime, anywhere access to important information, including educational content, policies and procedures, journal club articles and event announcements.

The department Learning Portal was developed by the E-Learning Team as the centralized location for all department related educational materials. Members of the E-Learning team are Kyle Ringenberg, M.D., Katie Goergen, M.D., and Faye Haggar, Ed.D. The secure portal is only accessible by department faculty, staff and trainees. The E-Learning Team’s building approach was guided by best practices in adult learning theory and digital instructional design.

“The portal is intended to be supplementary, and hopefully it will be very useful,” said Kyle Ringenberg, M.D. “We recognize the stream of information that everyone experiences today is vastly different than even five years ago, especially with the advent of a lot of different technologies. Educational materials for our residents, fellows and faculty are now just a click away.”

While the plan’s timeline is approaching the two-year mark, there is no deadline date for completion as content will be constantly reviewed, updated and expanded.

“We want our trainees and faculty to come to the Portal first, before searching externally for information,” says Dr. Haggar. “Content will be added in an ongoing manner. There may be updates to procedure processes, new keywords could be identified through exam results, and there may be changes in rotation information. Adaptability and flexibility were key components of the portal platform.”

The decentralization of didactics was determined as the next step for our trainees based on program analysis and feedback. Decentralization includes:

- Significantly decreasing structured morning lessons
- Moving the majority of the formal didactic time to Wednesday morning
- Increasing emphasis on Simulation/Mock Oral exams/OSCEs/PBLDs
- Shifting content discussions from the classroom to the clinical setting
- Focusing on active learning
- Providing education in timely and clinically relevant manner
- Discussing basic exam when on General OR months and during CA1 review sessions
- Discussing subspecialty topics on appropriate resident subspecialty rotations

Content created by individual specialty teams will ultimately be developed further and added to the E-learning site. Incorporation of questions to assess knowledge acquisition and understanding of concepts will occur contemporaneously with expansion of content on the Learning Portal.

Advantages of Learning Portal
- Harness the best information vetted by department clinical educators
- Digest content in manageable chunks (all materials can be viewed in 5-8 minutes)
- Mobile device friendly and secure (password protected)
- Contains different learning formats: interactive, audio, video, and text
Spotlight on Education: Faye Haggar, Ed.D.

Faye Haggar, Ed.D., is the department’s Director of Education Development & Academic Technology. Dr. Haggar’s role, created in 2016, is focused on leading innovation in the design, development and evaluation of curriculum and digital pedagogies that promote engaged, personalized and lifelong learning for graduate medical education within the department.

“I’m a technology nerd with a love for learning, hence my passion for educational technology,” Dr. Haggar said. “Early in my career as a K-12 classroom teacher, I wanted to make learning meaningful, fun and engaging, so I started integrating innovative teaching practices and tools into lessons. I had a very positive experience and was able to see firsthand the lasting impact this type of learning had on my students.”

After leaving K-12 education, Dr. Haggar worked for the University of South Dakota’s Center for Teaching & Learning, and eventually joined the University of Nebraska Medical Center. Her roles have included: face-to-face and online teaching, facilitation of faculty development workshops, creating effective digital learning modules, research on data and learning analytics, peer coaching, and establishing high quality, evidence-based evaluation and assessment practices.

“I love sharing my passion with others and I found my calling in advancing teaching and learning in higher education through educational technology and innovation,” Dr. Haggar said. “I’m excited to be part of the Department of Anesthesiology and supporting our educational mission.”

Dr. Haggar has worked closely with the E-Learning Team to develop the Learning Portal, an internal, secure learning website for Anesthesiology trainees. Goals for the innovative project are to improve content retention, increase formal examination scores (in-training exam, written and oral boards) and enhance perceived curriculum experiences.

Dr. Haggar said the process has allowed her to collaborate with department faculty to develop digital resources in several domains, including medical knowledge, clinical practice, patient safety, quality improvement, global health, reduction of healthcare disparities, transitions of care, and professionalism. Topics on the learning portal are constantly expanded and updated.

As of August 2018, there are 40 interactive e-learning modules, 200+ topic/keyword documents, 100+ recorded lectures, as well as access to resources for Journal Club, Policy & Procedures, and Assessment & Evaluation.

Dr. Haggar’s research interests include: instructional design for graduate medical education, innovative teaching in health sciences, and promoting clinical teaching as scholarship.

“I love sharing my passion with others and I found my calling in advancing teaching and learning in higher education through educational technology and innovation.”

Faye Haggar, Ed.D.
Director, Education Development & Academic Technology
Department of Anesthesiology
University of Nebraska Medical Center
Cardiac Anesthesiology

For the first time since the fellowship was created in 2013, the Department of Anesthesiology was approved for three cardiac anesthesiology fellowship positions in academic year 2018-19.

“Since the initial accreditation of the cardiac fellowship in 2013, it has been an unqualified success,” said Department Chair Steven J. Lisco, M.D.

The third cardiac fellow to be added in the 2018-19 academic year is intended for trainees interested in completing a two-year dual fellowship, specializing in both cardiac and critical care anesthesiology. This change also marks the first time dual training of any kind has been offered in UNMC’s Department of Anesthesiology.

“This allows us to cater to people who are interested in both programs,” said Chief of Cardiovascular Anesthesiology and Director of the Cardiothoracic Fellowship, Tara Brakke, M.D.

New to the curriculum in the 2017-18 academic year is a novel rotation with cardiovascular surgery that provides fellows hands-on learning as first assistants in the operating room, working alongside surgical colleagues. Continuing this interdepartmental partnership, the first-ever Fellow’s Course in Cardiopulmonary Bypass and Extracorporeal Life Support was jointly held March 2-3, 2018, in the Michael Sorrell Center. UNMC fellows, as well as fellows from other regional academic medical centers, utilized state-of-the-art simulation equipment to practice extracorporeal membrane oxygenation (ECMO) and cardiopulmonary bypass initiation and separation incorporating a multidisciplinary approach.

The 2017-18 cardiothoracic anesthesiology fellows were Jeff Songster, M.D., and Andrew Maresch, M.D.

“The cardiac anesthesiology fellowship has fantastic echocardiography training taught by people who are educating peers at workshops and meetings at a national level,” said Dr. Songster. “They’re very well-informed, educated and great teachers.”

Both Drs. Songster and Maresch accepted roles in the Division of Cardiothoracic Anesthesiology at UNMC following their fellowship.

Critical Care Anesthesiology

The three Critical Care Anesthesiology (CCA) fellows were challenged by a year filled with educational opportunities and growth.

Academic projects from all three fellows, Danielle Cummins, M.D., James Harris, D.O., and Megan Hedlund, M.D., were all accepted for presentation at the Society of Critical Care Anesthesiologists conference in May. They also presented at the UNMC 2017 Echocardiography course in Naples, Fla. Additionally, Dr. Hedlund’s research study investigating eyelid lag as a predictor of obstructive sleep apnea was recognized as the highest enrolling investigator-initiated clinical trial at Nebraska Medicine for the academic year 2018.

“More importantly, all three provide outstanding care to their patients,” said Critical Care Division Chief, Daniel Johnson, M.D. “They’ve been commended by multiple groups for their level of dedication, attention to detail and professionalism. They’re phenomenal. In fact, all the fellows we’ve had in our program have been excellent. I’ve been very blessed as a program director.”

The Critical Care fellowship has quadrupled in size in the four short years since accreditation. The program began in 2014 with one fellow, moving to two the following year, three the next two years and now four in 2018. Dr. Johnson credits this growth to the strength of the program and faculty leadership.

“We get a lot of incredibly interesting cases at UNMC,” said Dr. Johnson. “A lot of people know that and want to be here for their fellowship. Trainees also benefit from faculty that are 100 percent dedicated to the education of the fellow.”

UNMC is the largest referral medical facility within a 500-mile radius of Omaha, therefore, many critically ill and complex patients seek care here. Since the department has a well-staffed Critical Care team, fellows are afforded in-depth participation in challenging and educationally valuable cases under robust faculty mentorship and guidance.

All three Critical Care fellows started full-time jobs in July 2018. Dr. Cummins went to Indiana University School of Medicine, Dr. Harris went to University of Pittsburg Medical Center, and Dr. Hedlund works at the University of Kansas Medical Center.
Pain Medicine

The department’s pain medicine fellowship has become nationally esteemed, drawing applicants from residency programs from across the United States, after only three years of existence. The 2017-18 fellows, David Emmanuel Medina Gutierrez, M.D., and Kevin Wong, D.O., experienced hands-on learning, a large number of diverse and complex procedures, and strong interdepartmental teamwork.

The fellowship touts an excellent faculty-to-student ratio, as well as collaborative experiences with Orthopedics, Neurology, Neuroscience, Psychiatry and Physical Medicine and Rehabilitation Departments. The curriculum incorporates training in the advanced management of pain and pain syndromes, including regenerative therapies, opioid management and tapering, and cognitive behavior modification.

Fellow rotations also include time with physicians from neurosurgery, neurology and neuroradiology. Unique to the department’s chronic pain fellowship is a rotation in the psychology pain management program where fellows gain exposure to pain management treatment involving both individual and group therapy facilitated by physical therapists and clinical psychologists.

All fellows have the opportunity for research and quality improvement projects, allowing fellows to routinely attend and present at national conferences and workshops. This national exposure affords fellows opportunities to learn new approaches to pain management and further expand the breadth of their educational experience.

“When they meet their peers at other meetings, our trainees hear they have top-notch skills and training in comparison to fellows from other institutions,” said Pain Medicine Division Chief Madhuri Are, M.D. “Our faculty-to-fellow ratio is so good that they get hands-on interventional pain training. They’re not doing grunt work, they’re doing real work.”

Kimberley Hanes-Henson, M.D., pain medicine fellowship director, reviews roughly 150 applicants a year for two fellowship positions.

“People want to come here,” said Dr. Are. “They know that they’re going to get great training and be treated well.”

Pediatric Anesthesiology

The pediatric anesthesiology fellowship graduated their sixth and seventh fellows in 2018. Both fellows, Kaitlyn Pellegrino, M.D., and Jasper Williams, M.D., were hired on as faculty at Omaha Children’s Hospital.

Dr. Pellegrino and Dr. Williams were afforded a wealth of educational opportunities, including exposure to every critical case, due to the hospital’s status as the only facility in the state that provides a level-four NICU. Academic year 2017-18 Fellowship Program Director Andrea Dutoit, M.D., said thanks to the amplified experience and ability to flex fellows from case to case, pediatric anesthesiology fellows usually complete all of their required procedures halfway through the year.

“Not only is it a great learning experience, our faculty really appreciate the value added from having fellows around,” Dr. Dutoit said. “They’re incredibly talented, dedicated, and interested in learning pediatric anesthesiology. They take fantastic care of the kids.”

The fellows participated in National events such as, the Society of Pediatric Anesthesia’s annual conference, and simulation camps at Children’s Hospital Philadelphia and John’s Hopkins Hospital.

“Even though we are a relatively new and smaller fellowship, there are things our fellows get to do here that I think are a step above many of the big-name children’s hospitals,” Dr. Dutoit said. Dr. Dutoit saw success and fellow satisfaction by letting them know she’s always available and focused on wellness in addition to achievement. Michelle LeRiger, M.D., who joined the Department of Anesthesiology in 2017, served as associate program director for the pediatric fellowship and provided additional support to Dr. Dutoit and the fellows. With Dr. Dutoit’s recent promotion to Residency Program Director, Dr. LeRiger will serve as the Pediatric Fellowship Director beginning in academic year 2018-19.

The 2018-19 academic year fellows are Brittany Brown, M.D., former chief resident at UNMC, and Kunal Sualy, M.D., from Rush University Medical Center in Chicago. Construction of a new building at Children’s is underway and will nearly double capacity upon completion in 2021.
Welcome, Class of 2022!

During Match Day on March 16, the Department of Anesthesiology welcomed 10 new residents to join in July of 2018, and two additional residents to join in July of 2019 as CA1’s. The 12 residents form the class of 2022.

Sagar Bansal, M.B.B.S.
Government Medical College & Hospital
Chandigarh, India

Michelle-Anne Iverson, M.D.
Edward Via College of Osteopathic Medicine
Blacksburg, VA
(currently a HOVI Pulmonary Critical Care Fellow at UNMC, Joining 07/01/19)

Rachel Quandahl, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Allison Bell, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Jason Lau, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Blaine Schlawin, D.O.
Des Moines University
College of Osteopathic Medicine
Des Moines, Iowa

Katie Berky, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Kelsey Neuhalfen, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Apollo Stack, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Zhaohui Hu, M.D.
University of Iowa
Iowa City, IA

Peter Pellegrino, M.D.
University of Nebraska Medical Center
Omaha, Neb.

Guangqing Sun, M.D.
Sun Yat-Sen University
Guangzhou, China
(Joining 07/01/19)
Congratulations, Graduates!

Residents and fellows of UNMC’s Department of Anesthesiology class of 2018 share their career plans following graduation.

Residents

Brittany Brown, M.D.
Pediatric Anesthesiology Fellowship, Children’s Hospital & Medical Center, Omaha, Neb.

Jeremy Cook, M.D.
Faculty, University of Kansas Health System, Kansas City, Kan.

Jordan Gozdzialski, M.D.
Cardiothoracic Anesthesiology Fellowship, UNMC, Omaha, Neb.

Catrina Johnson, M.D.
Staff Anesthesiologist, Advocate Trinity Hospital, Chicago, Ill.

Andrew Lowe, M.D.
Pediatric Anesthesiology Fellowship, University of Iowa, Iowa City, Iowa

Naomi Matthews, M.D.
Private Practice, Great Plains Health, North Platte, Neb.

Galen Nelson, M.D.
Faculty, United States Air Force at the Center of Sustainment of Trauma and Readiness Skills (CSTARS), University of Saint Louis Hospital, St. Louis, Mo.

Archana Ramesh, M.B.B.S.
Pediatric Anesthesiology Fellowship at Children’s Hospital of Pittsburgh of UPMC, Pittsburgh, Pa.

Timothy Rush, M.D.
Staff Anesthesiologist, UC Health Memorial Hospital, Colorado Springs, Colo.

Tal Sandler, M.D.
Critical Care Anesthesiology Fellowship, UNMC, Omaha, Neb.

Gregory Shaw, M.D.
Staff Anesthesiologist, UPMC Jameson-Horizon, New Castle, Pa.

Kristin Wakin, M.D.
Faculty, Department of Anesthesiology, UNMC, Omaha, Neb.

Fellows

Adult Cardiothoracic Anesthesiology

Andrew Maresch, M.D.
Faculty, Department of Anesthesiology, UNMC, Omaha, Neb.

Jeffrey Songster, M.D.
Faculty, Department of Anesthesiology, UNMC, Omaha, Neb.

Critical Care Anesthesiology

Danielle Cummins, M.D.
Faculty, Indiana University, Indianapolis, Ind.

James Harris, D.O.
Staff Anesthesiologist, UPMC-Pinnacle Lancaster, Lancaster, Pa.

Megan Hedlund, M.D.
Faculty, Department of Anesthesiology, Critical Care Division at the University of Kansas Medical Center, Kansas City, Kan.

Pain Medicine

David Emmanuel Medina Gutierrez, M.D.
Private Practice in Manhattan, New York City, N.Y.

Kevin Wong, D.O.
Private Practice, Desert Orthopedic Center at Eisenhower Medical Center in Palm Springs and Rancho Mirage, Calif.

Pediatric Anesthesiology

Kaitlyn Pellegrino, M.D.
Faculty, Children’s Hospital & Medical Center, Department of Anesthesiology, UNMC, Omaha, Neb.

Jasper Williams, M.D.
Faculty, Children’s Hospital & Medical Center, Department of Anesthesiology, UNMC, Omaha, Neb.
2017 Echocardiography Conference Helps Close Skills Gap

A group of UNMC anesthesiologists hosted the third-annual Echocardiography Conference in December 2017, teaching physicians from around the country a multidisciplinary approach to echocardiography through small-group, hands-on demonstrations.

The conference, held Dec. 8-12, 2017, at the Ritz-Carlton in Naples, Fla., aimed to close the gap between the required echocardiography training for physicians and the limited number of experienced physicians to train their peers.

“New guidelines are coming out directing anesthesiologists to have echocardiography skills, but many institutions don’t have a critical mass of echocardiography experts who can teach their staff these skills,” said Sasha Shillcutt, M.D. “We have experts in echocardiography that can train doctors, who then take these skills back to their institutions.”

Doctors from many specialties attended, including physicians in internal medicine, critical care, surgery, cardiology and anesthesiology. In addition, guest faculty from Duke University, Dartmouth, University of Iowa and the University of Florida helped diversify the learning experience.

“It was great to have faculty from multiple organizations because it increases the approaches to echocardiography that a physician can learn,” said Dr. Shillcutt. “It allows the learner, who may be working in varying environments, to see how they can approach echocardiography from different directions.”

Roughly 50 physicians and sonographers attended the conference which was expanded in 2017 to cover interventional echocardiography and focus on transcatheter valves. The instructors focused on problem-based learning to teach solutions that could be used by the physicians in their specialties.

The course was sponsored by the American Society of Echocardiography, and nine vendors offered support through both educational funds or ultrasound equipment for hands-on scanning and simulation.

“It’s a platform to showcase what we do best in our department, which is perioperative echocardiography,” Dr. Shillcutt said. “We get to utilize our faculty who are expert instructors and nationally-known teachers of echocardiography.”
Inaugural Brave Enough Women’s Leadership Conference a Smashing Success

After the networking party in pajamas with champagne, after the sunrise yoga, the gala and dance, after hearing from inspiring speakers including an FBI agent and an expert in emotional intelligence, women physicians who attended the 2017 Brave Enough Women’s Leadership Conference took with them a very important message: You are not alone.

The inaugural conference, titled “Brave Enough: Discover Your Inner Moxie,” was held Sept. 8-10, 2017, at the Embassy Suites in Omaha. There were 14 speakers from 12 different institutions who educated the women physicians on professional wellbeing, leadership, and promotion on professional and personal levels. Topics included career mentoring, sponsorship, wellbeing and professional burnout.

“I thought to myself, ‘If I’m going to leave my family and home for three days, what do I want to listen to?’” said Brave Enough Conference Director Sasha Shillcutt, M.D. “This is what women in medicine want and need. They need to go somewhere where they feel like they are in a community that understands them and has the same struggles as them. They need to come away with increased resilience, and with tools to create balance in their lives.”

The conference drew more than 220 female physicians of diverse specialties and backgrounds from 43 states and two countries. Attendees talked about real stuff—What it feels like to support other women, to not have the support of other women, and the tough questions facing physicians, wives and mothers. Time for journaling was provided. Tears were shed.

“It was one of the most meaningful things I’ve ever led in my career,” Dr. Shillcutt said. “Nine months later I am still receiving letters, emails and gifts from women weekly, thanking me for putting on the conference and sharing with me the goals they have achieved as a direct result of their attendance.”

The conference networking spurred spinoff subgroups of physicians that meet regionally in cities such as Chicago, Miami, Houston, Atlanta and Los Angeles. Women are helping each other get published and promoted, Dr. Shillcutt reported.

“The conference stimulated accountability groups, sponsorship of women, and confidence to pursue promotion and change,” Dr. Shillcutt said. “It produced more positive change in a weekend than I ever anticipated.”

The inception for Brave Enough began in 2015 when Dr. Shillcutt was experiencing a period of burnout. Recognizing that she needed to share the skill set she acquired to overcome the burnout, she set out to connect with fellow women physicians.

It started as a text group with 10 physician friends who shared inspiring and encouraging words. That snowballed into a Facebook group that now has more than seven thousand members. Wanting to share her inspiring words with the general public, Dr. Shillcutt started a blog and website called Brave Enough. After group members expressed interest in a physical gathering, Shillcutt created the Brave Enough conference in conjunction with the Department of Anesthesiology and UNMC’s Office of Continuing Education.
Two New Endowed Professorships Awarded

The UNMC Department of Anesthesiology recently celebrated the naming of two new endowed professors.

Department Chair Steven J. Lisco, M.D., was named the Myrna Newland, M.D., Endowed Professor of Anesthesiology. Cathleen Peterson-Layne, M.D., Ph.D., and Chief of the Division of Obstetrical Anesthesiology, was named the Dr. Gail Walling Yanney Endowed Professorship of Anesthesiology.

“These endowments are critical to advancing department mission-driven programs and providing funds to advance education and academic scholarship,” Dr. Lisco said. “They not only recognize the contributions of senior-level faculty but provide an enduring tribute to the donors.”

He intends to use the funds in a manner consistent with Newland's vision for scholarly work and creative educational activities.

Myrna Newland, M.D., retired in June of 2013 after 45 years at UNMC. Newland made significant contributions to both clinical care and scholarship in Anesthesiology—advancing knowledge in the areas of education, quality and patient safety. Her many contributions to UNMC and the department include serving for 19 years in the faculty senate, 16 years as director of UNMC’s equity office, and twice as interim chair of the department.

Department members are honored to be selected for the endowments. Endowed faculty professorships are crucial for recruiting and retaining the highest-quality faculty, says Dr. Lisco.

Dr. Peterson-Layne, who joined UNMC in 2016 from Duke University, will use her Dr. Gail Walling Yanney Professorship of Anesthesiology endowment to develop innovative research and strategies that further maternal and fetal outcomes.

“Being here has been an adventure, and too good of an opportunity to pass up,” Dr. Peterson-Layne said. “This endowment is just one more way of demonstrating the success of Dr. Lisco’s leadership, and his ability to raise the profile of our department to a national spotlight.”

Gail Walling Yanney, M.D., is a UNMC College of Medicine graduate and former Bishop Clarkson Memorial Hospital anesthesiologist who retired from clinical practice in 1986, and as a clinical instructor in anesthesiology at UNMC in 1992.

Following retirement, Walling Yanney served as Executive Director of the Clarkson Foundation and as a board member of the Nebraska Medical Center Hospital. The endowment was established by her husband, Michael Yanney, in conjunction with the UNMC Department of Anesthesiology, to honor Walling Yanney and her many contributions to anesthetic practice in Omaha and at UNMC.

Lisco and Peterson-Layne join Executive Vice Chair Andrew Patterson, M.D., Ph.D., as the only endowed professors in the department. Patterson has held the Margaret Larson Professorship in Anesthesiology since 2015. He uses the endowment to help fund the department’s global outreach efforts.

“Most departments of our size aren’t fortunate enough to have three endowments,” Dr. Lisco said. “This is a reflection of the exceptional quality of our faculty and the generous community willing to support them.”

Most departments of our size aren’t fortunate enough to have three endowments,” Dr. Lisco said. “This is a reflection of the exceptional quality of our faculty and the generous community willing to support them.
New Staff & Promotions

The Department of Anesthesiology proudly welcomed the following team members in the 2017 – 18 academic year:

PHYSICIANS
Austin Adams, M.D.
Jessica Easton, M.D.
Jennifer Rasmussen, M.D.
David Stern, D.O.
Shaun Thompson, M.D.
Maulin Vora, M.B.B.S.

RESEARCH
Danstan Bagenda, Ph.D.
Juan Hong, Ph.D.
Alicia Schiller, Ph.D.
Lu Qin, Ph.D.

CRNAS
Troy Anderson
Nicholas Denich
Erik Evans
Jonathan Huss
Jeffrey Johnson
Shelly Mathews
Kathryn Norby
Laura Oseka
Al Preto
Nicholas Stalnaker
Clark Thompson
Julie Vaughan
Tatum Witt

Congratulations to the following faculty members who were promoted in academic rank on July 1, 2018:

PROFESSOR
Madhuri Are, M.D.
Tara Brakke, M.D.
Ellen Roberts, M.D.

ASSOCIATE PROFESSOR
Daniel W. Johnson, M.D.
Thomas A. Nicholas, M.D.

ASSISTANT PROFESSOR
Jeremy J. Hartley, M.D.
Anesthesiology Department’s Rwanda Trip Helps Patients

Ten Department of Anesthesiology physicians, CRNAs and educators recently returned from Gitwe, Rwanda, where the team assisted in performing 33 goiter removal surgeries on Rwandan patients who have limited access to specialized surgical care.

The team departed May 10 and returned May 20 after four days of travel, one day of preparation and five days of surgery. It was the department’s third surgical trip to Rwanda.

Surgeries focused on excision of large goiters, caused primarily by a lack of dietary iodine. The goiters can range from golf ball to softball size and carry a negative social stigma amongst health issues.

Second to providing care to an underserved population, the trip provides diverse medical and cultural education to UNMC faculty, staff and residents.

“It’s a really good experience for the residents because they get to practice medicine in a resource-limited environment,” said Megan Chacon, M.D., director of Global Health for the Department of Anesthesiology. “In the U.S. we have everything at our fingertips, but in Rwanda you’re dealing with limited monitors, limited electricity and no ventilators. There’s a different though process to our anesthetic techniques because of the limited resources.”

For example, Dr. Chacon noted the operating rooms had windows in which you could look out to the surrounding village while performing surgery. If it looked like a storm was about to roll in, the team would postpone a surgery due to concern of losing power, and therefore losing important equipment such as suction and electrocautery.

To perform these surgeries, the department teamed up with Medical Missions for Children (MMFC), a non-profit group created more than 25 years ago to build sustainable healthcare, education and social services infrastructure in underserved areas in the world. The ten UNMC Anesthesiology employees were joined by nine other MMFC physician and nurse volunteers from Massachusetts, Michigan and Utah.

The Department of Anesthesiology’s relationship with MMFC began in 2016 with the arrival Andrew Patterson, M.D., Ph.D., executive vice chair of the Department of Anesthesiology. Dr. Patterson, who had a relationship with MMFC and the medical community in Gitwe spanning the previous decade, worked with Dr. Chacon to establish a global outreach program in UNMC’s Department of Anesthesiology dedicated to clinical care, education and research.

The department has made five trips to Rwanda, two of which were educational and three surgical. Additionally, Department Chair Steven J. Lisco, M.D., and Dr. Patterson assisted in establishing a microbiology lab in Gitwe.

Upon arrival in Gitwe on Sunday, May 13, volunteering surgeons, anesthesiologists, residents and nurses set up operating rooms and screened patients to determine surgical eligibility and establish a schedule. Four nearly empty rooms were transformed into a preoperative area, two operating rooms, and a recovery room.

The 19-person team performed 33 surgeries in five days. More than 80 potential patients were screened. Procedures included right and left thyroid lobectomies, hemithyroidectomies, an excision of the right submandibular gland, and a left superficial parotid excision.

UNMC/Nebraska Medicine team members were:

**Physicians**
- Megan Chacon, M.D. (Team Leader)
- Catrina Johnson, M.D.
- Cale Kassel, M.D.
- Archana Ramesh, M.B.B.S.

**Certified Nurse Anesthetists**
- Ann Donnelly-Haasch
- Tim Glidden

**Registered Nurses**
- Lisa Bandow
- Julie Hoffman
- Valerie Morales-Reigle

**Educator**
- Faye Haggar, Ed.D.

Ntirandeka Saaock, a Gitwe patient who had his thyroid removed in 2017, returned to the medical facility to share with volunteers the joys of his life without a thyroid goiter. Saaock, an incredible singer, could barely sing due to his thyroid issues. Since his procedure, he’s spent the past year “singing and singing all day long.”
In April 2017, members of the Department of Anesthesiology joined the Xtreme Everest research initiative in Nepal’s Himalayan Mountains to explore early signals of hypoxia, a dangerous condition in which the body does not get enough oxygen.

The Xtreme Everest research team, coordinated by University College London’s Centre for Altitude, Space and Extreme Environment Medicine, focuses on exploring the impact of hypoxia on human physiology in a high-altitude environment in order to improve outcomes for critically ill patients.

In collaboration with other researchers on the trek, the UNMC team found preliminary evidence that heart and lung adaptation to hypoxia could be identified using portable echocardiography and ultrasound machines before clinical symptoms become apparent. In mountainous terrain, examinations with these hand-held machines can identify individuals at risk of clinical deterioration before they become debilitated and require drastic medical intervention using costly resources. In hospitals across the globe, this early intervention can be life-saving.

The UNMC team was led by Brad Fremming, M.D., PharmD, and included Dan Kalin, M.D., Tim Rush, M.D., CRNA Michael Hamilton, sonographer Walker Thomas, and Critical Care Nurse Eric Harvester. The project was supported from Omaha by Nick Markin, M.D., Danstan Bagenda, Ph.D., and research nurse Julie Hoffman.

The entire trek lasted 28 days. The journey began in Omaha at an altitude of 984 feet above sea level and reached a peak altitude of 17,598 feet at the Nepal Mount Everest base camp. The team endured below-freezing temperatures, rugged terrain and altitude-related illness.

“This environment helps recreate the situations a critical care anesthesiologist will see,” Dr. Fremming said. “Hypoxia experienced in a hospital is not significantly different from the hypoxia experienced by otherwise healthy individuals at a high altitude in terms of its impact on the right side of the heart.”

The team performed an observational cohort study of right ventricle size and function, and pulmonary artery pressure in 43 volunteer subjects. Measurements were taken at three labs with altitudes of 4,593 feet, 11,286 feet, and 14,340 feet. They also successfully performed point-of-care lung ultrasound at base camp.

The group is in the process of publishing their findings. Dr. Fremming hopes to lead another research mission to Mount Everest and continue the collaboration with investigators from University College London and the University of South Hampton.

“It was really quite an honor to be invited on this trek because we are one of only two universities in the United States to have the honor of working with Xtreme Everest on this trip,” Dr. Fremming said. “Our expertise in echocardiography was recognized.”

(From left) Sonographer Walker Thomas, Critical Care Nurse Eric Harvester, Dan Kalin, M.D., Brad Fremming, M.D., PharmD, and Tim Rush, M.D., prepare to scale Mount Everest with the medical research group Xtreme Everest. Not pictured, CRNA Michael Hamilton.

Dan Kalin, M.D., is monitored by Brad Fremming, M.D., PharmD, on Mount Everest as part of a research project with Xtreme Everest.
CRNA Update

Teams
In recent years, department of Anesthesiology Certified Registered Nurse Anesthetists organized anesthetists into specialized teams as part of perioperative services’ transition to the team-based staffing model.

Anesthesia care teams were formed that mirrored the surgeon and operating rooms’ nursing teams. Such specialty teams leverage the familiarity of surgeons, anesthesiologists, CRNAs and nurses working together to improve operating room efficiency and patient safety. Members of these newly formed teams were based upon interest and expertise, thus providing a more cohesive surgical team and an enhanced patient care experience. CRNAs currently participate on the pediatric, neurosurgical and orthopedic teams.

In the 2017-18 academic year, CRNAs expanded the department’s care team model by joining the Regional Anesthesia Block team. The collaboration provides an opportunity for CRNAs to expand their scope of practice and become competent in various peripheral nerve block techniques used routinely in the ambulatory setting while maintaining a collaborative practice with physician colleagues.

“Consistency in team members in the operating room gives us more effective communication amongst team members and increases patient safety,” said Tiffany Olson, associate director of nurse anesthetists. “Surgeons specialize in a certain area, as do our nursing colleagues. Working in teams aligns anesthesia staff so that we are more consistent with our surgical colleagues.”

Though CRNAs are assigned to teams, they continue to work in all clinical anesthesiology areas as needed.

SRNAs
The Department of Anesthesiology has clinical affiliation with two nurse anesthesia programs in Nebraska: Bryan College of Health Sciences and Clarkson College. Each year 20 students in the Student Registered Nurse Anesthetists (SRNA) program, 10 each of juniors and seniors, perform clinical rotations under the mentorship of Nebraska Medicine CRNAs.

With the recent growth of the department, the program can now accommodate an additional two students from each program in years to come.

“SRNAs are future anesthesia providers,” Olson said. “We want to ensure that we are training future CRNAs to be safe and competent providers to serve the various communities they will practice in.”

Committees
There are three CRNA committees which make essential contributions to the success of the Department mission. They are the CRNA Leadership Committee, the CRNA Recruitment and Staffing Committee, and the CRNA Educational Committee.

The Leadership Committee is a group of formal and informal leaders within the department who are drivers and implementers of change. They meet quarterly to discuss current processes, solve problems, and discuss future vision and plans relevant to CRNA practice within the Department of Anesthesiology and Nebraska Medicine. This committee is chaired by Tim Glidden, Director of Nurse Anesthetists. Drs. Steven Lisco and Ellen Roberts are ad hoc members.

The Recruitment and Staffing Committee consists of CRNAs whose mission is to recruit, interview and assist in hiring new CRNAs. The opening of new surgical centers and additional operating rooms has created demand for both anesthesiologists and nurse anesthetists. Members have been and continue to be instrumental in meeting department and institutional demands through local recruitment and specialty conferences. This committee has been successful in the recruitment of 26 CRNAs over the past two years, 13 experienced and 13 new graduates.

The Education Committee consists of CRNAs committed to meeting the educational requirements and providing the necessary clinical experiences for SRNAs. As both instructors and mentors of the SRNAs, the education committee members make daily clinical assignments for the students, gather daily clinical evaluations of students from CRNAs, and facilitate those reports to each student’s respective program.

tAPPing into Leadership
CRNA leaders Tim Glidden, director of nurse anesthetists, and Tiffany Olson, associate director of nurse anesthetists, completed the tAPPing into Leadership Training, a nine-month program dedicated to building skills and creating better leaders.

Glidden and Olson participated in monthly meetings in which they met with other Advanced Practice Providers (APP) and Nebraska Medicine senior leaders who shared ways in which they have “tapped” into their own strengths to become a better leader. As part of the program, each APP pairs with a mentor to continually grow and challenge themselves.

Objectives of the program are:
1. Identify your strengths and integrate them into your leadership style
2. Develop strategies and competencies for continuous learning, including self-awareness and reflective thinking
3. Recognize potential and learn how to cultivate it
4. Create a network and trusted partnerships within their healthcare team as well as Nebraska Medicine

“The training gave us a very personalized approach to leadership development and continued growth,” Olson said. “It’s been very valuable information that I regularly refer back to. We will identify and encourage fellow CRNAs to apply. This most certainly trickles down to better patient care.”
Spotlight on Research: Alicia Schiller, Ph.D.

Alicia Schiller, Ph.D., joined the department in September 2017 as an assistant professor. Dr. Schiller’s primary focus is to manage UNMC’s first human physiology lab in which she and her research team will attempt to bridge the gap between basic science research and successful clinical applications.

This focus on translational research will bring human subjects into the Lied Transplant Center lab with the goal of understanding how specific physiologic treatments evaluated in lab animals work on the humans. Bench research, often using animal subjects, doesn’t always translate to humans in clinical practice. Schiller hopes to understand why these failures occur and to create clinically applicable solutions.

“There’s not much research done in this space,” she said, noting there are only a handful of human physiology labs dedicated to this type of work in the United States.

Dr. Schiller’s research will also benefit medical students, residents and faculty physicians by providing them access to a wealth of patient data. Currently data is mined from willing patients, but these patients are never healthy humans under normal circumstances. The human physiology lab will help Schiller execute controlled experiments and create a database for future use—potentially increasing the opportunity for future research projects and eliminating the need to recruit additional human subjects.

“I’m excited to be part of solving relevant clinical challenges,” Dr. Schiller said. “I hope to be a service to the clinicians and solve relevant problems with scientific tools.”

It’s not the first time she’s focused on life-saving solutions. Previously, Dr. Schiller worked for the Department of Defense as a scientist at the Institute of Surgical Research in San Antonio. She was on a team focused on device development that created a small machine that determines the level of internal bleeding in wounded individuals so as to help triage the most critical of mass casualty patients or injured warriors first.

“How do you make a decision in combat of who you’re going to put on the helicopter first when you have four people who have been in a blast and they’re all unconscious?” she said. “It helps you know better how much time people have left.”

To help build that device, Dr. Schiller and her team performed some interesting human experiments that prepared her for her new role. They simulated hemorrhage by putting a kayak skirt over a person with their legs in a negative pressure vacuum. Blood pooled in the subject’s legs until symptoms of presyncope were displayed. Other studies removed blood from the cardiovascular system of subjects.

Dr. Schiller is also the Director of Combat Casualty Medicine at the Nebraska National Strategic Research Institute. Her background at the DOD made her a top candidate for the role. In this position, Schiller acts as a liaison for scientific and clinical research with the DOD. Previously this role was held by Nick Markin, M.D.

Dr. Schiller grew up in the Midwest and obtained a bachelor’s degree in biology from the University of Nebraska at Omaha and Ph.D. in physiology from UNMC.
Bagenda Facilitates Department Research

Danstan Bagenda, Ph.D., assistant professor and faculty researcher, recently joined the department to further research and quality metrics in the Department of Anesthesiology. He sees his role in the department as threefold: to collaborate with clinicians on research studies, to enhance the quality of clinical care through quality improvement projects, and to mentor department faculty and trainees on the research and clinical trial design.

He received his doctorate degree from John Hopkins Bloomberg School of Public Health, and has a background in biostatistics, epidemiology, infectious diseases and global health. Aside from serving others in the department, Dr. Bagenda also pursues research in topics of interest to him, such as enhancing care in resource-limited settings and communities with childhood disease.

When collaborating on clinical research, Dr. Bagenda offers mentorship at every step of the journey. Some clinicians come in with an anecdotal observation from their years of experience but are unsure of how to structure a research study, Dr. Bagenda says. His role is to assist in developing this idea and turning it into published work that improves clinical care whenever possible.

“Many protocols in clinical care evolved as a result of research,” Dr. Bagenda said. “It’s meaningful work to me to help these clinicians step back every once in a while, to see if what they’re doing really results in better outcomes or if it can be improved.”

He recently worked with Executive Vice Chair Andrew Patterson, M.D., Ph.D., on several publications focusing on recognition and treatment of sepsis in resource-limited environments. These manuscripts, published in prestigious journals such as the Journal of the American Medical Association, feature work performed in Gitwe, Rwanda, where the department executes surgical mission trips.

Manuscripts like these often result in improved clinical care, another benchmark of success for Dr. Bagenda. His recent work with department physicians includes research topics like burnout, signs of difficult airways in patients with sleep apnea, minimizing surgery site infection, and recognition of patients at risk for deficient amounts of oxygen in the blood stream.

“It’s meaningful work to me to help these clinicians step back every once in a while, to see if what they’re doing really results in better outcomes or if it can be improved.”

“It’s meaningful work to me to help these clinicians step back every once in a while, to see if what they’re doing really results in better outcomes or if it can be improved.”
Department Faculty Lead in National Resident Education

The Department of Anesthesiology currently has seven faculty members involved in drafting or administering national certification examinations, a national honor that furthers the department’s credibility as a top educator of anesthesiologists.

Several of these roles are thanks to the leadership and example of Executive Vice Chair Andrew Patterson, M.D., Ph.D. Dr. Patterson has served as a member of the Board of Directors of the American Board of Anesthesiology since 2011. He has served as a structured oral board examiner since 2006, as senior editor of the oral examination since 2011, and as chair of the oral examination committee since 2012.

Dr. Patterson served as a Critical Care Medicine Board examination question writer and as a member of the Critical Care Examination Committee from 2008 until 2018. He led the redesign of the ABA’s Maintenance of Certification (MOCA) system that included elimination of 10-year examinations and introduction of the MOCA Minute. He is currently chair of the Adult Cardiothoracic Anesthesiology Examination Task Force.

ABA – Oral Examinations

Every board-certified anesthesiologist must complete the APPLIED Examination, a Standardized Oral Examination (SOE) and an Objective Structured Clinical Examination (OSCE). UNMC’s Department of Anesthesiology houses four physicians who help to administer the SOE, and test students from other institutions. They are Sheila Ellis, M.D., Cathleen Peterson-Layne, M.D., Ph.D., Sasha Shillcutt, M.D., and Dr. Patterson.

“I enjoy participating in the board examination process because it connects me with people who are very engaged and interested in having the highest standards for the profession,” Dr. Ellis said. “It is a great way to continue to learn and keep up on advances in the specialty and I get to work with wonderful people from all over the country in both academic and private practice who have similar goals and ideals.”

Through access to many faculty who are involved in the board-certification examination process, our residents and fellows have ample opportunity to practice and receive feedback that is relevant and up-to-date as they train to obtain board certification information.

ABA – Objective Structured Clinical Examination (OSCE)

Amy Duhachek-Stapelman, M.D., has a role in the development of the OSCE for the American Board of Anesthesiologists.

The OSCE tests residents on qualities that are difficult to measure in traditional written and oral exams, such as communication, professionalism and technical skills. The ABA implemented this enhanced testing in 2018.

The OSCE is divided into several domains, each focusing on a different area of anesthesiology. Dr. Duhachek-Stapelman is responsible for crafting testing points related to echocardiography. Domains include communication and professionalism, which involves doing things such as obtaining informed consent or discussing treatment options with a patient, or technical skills such as interpreting monitor data or echocardiograms.

“One of the benefits of having faculty be involved with the ABA is that our mentees can feel confident that their mentors have a comprehensive knowledge of what they’ll be tested upon,” Dr. Duhachek-Stapelman said. “Multiple people in our department are very familiar with the testing process and ethically help residents prepare.”

ABA – Critical Care Medicine

Erin Etoll, M.D., and Daniel Johnson, M.D., both write questions for the written examination that fellows must pass to obtain certification in the critical care medicine field. They write several questions that go into a larger question bank from which the ABA chooses the final questions. A new exam is created every year, so Dr. Etoll and Dr. Johnson must create new questions that reflect the current state of medicine.

“When a fellow takes an exam and it’s not reflective of what they learn or the field that they’re in, that’s frustrating,” Dr. Johnson said. “By writing questions that are pertinent to the actual practice of critical care medicine, Dr. Etoll and I can offer a bit of a solution to that problem.”

NBE

Sasha Shillcutt, M.D., writes certification exam questions for the National Board of Echocardiography. The Advanced Perioperative Transesophageal Echocardiography Examination is created by a committee of 15 experts from North America, of which Dr. Shillcutt is a member. Dr. Shillcutt feels honored to be thought of as a content expert and leader in the field of echocardiography.

“It’s one of my favorite boards I belong to because I get to learn from other experts,” she said. “It’s a mini board review for me every year. We argue and get nerdy, we pull out the books and have passionate academic discussions about echocardiography. I love it.”

Dr. Shillcutt has been an NBE Exam writer for three years. She is also an oral board examiner for the American Board of Anesthesiology.
I am exceptionally proud of the research published in academic journals by our department members in the past academic year. Please take note of the cutting-edge work on sepsis in resource-limited environments which includes the department’s work in Rwanda, performed by Dr. Patterson and Dr. Bagenda. Aspects of this work were published JAMA, Critical Care Medicine, and the Journal of Intensive Care Medicine. Also noteworthy is a publication by Dr. Sasha Shillcutt in the New England Journal of Medicine on Social Media and Advancement of Women Physicians. I encourage you to read about Dr. Shillcutt’s recent activities also highlighted in this report.

– Chairman Steven J. Lisco, M.D.


Donate to the Department of Anesthesiology

The Department of Anesthesiology’s mission is to deliver high-quality and compassionate medical care, provide premier educational programs, and perform innovative research. Donations help to advance the department’s educational and outreach goals, including execution of research and global outreach missions.

Visit nufoundation.org/unmc/college-of-medicine/departments/Anesthesiology or call 402-502-0300.

Follow us!

facebook.com/UNMCAnesthesiology

twitter.com/UNMCAnesthesia

unmc.edu/anesthesia