A Decade of Transformation

A regional health system in Virginia has reinvented itself as a national leader with forward-thinking health care, education, and research.
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Carilion Medicine

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CAROLIN CLINIC
1906 Balleview Avenue
P.O. Box 13367
Roanoke, VA 24033
CarilionClinic.org
804-412-4842

Carilion Medicine is published twice a year at: 213 McClanahan Street, Suite 200 Roanoke, VA 24014 Phone: 540-266-6586 Fax: 540-266-6608 Email: CarilionMedicine@carilionclinic.org Web: Carilion Clinic.org/carilionmedicine

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The Carilion Clinic community has the potential to save lives and make our patients healthier.

Patrice M. Weiss, M.D.
Chief Medical Officer and Executive Vice President

Carilion Clinic

Stronger Together

In August, the Virginia Tech Board of Visitors voted to integrate the academic and research missions of the Virginia Tech Carilion School of Medicine fully into Virginia Tech.

The medical school will notify and review milestones with several accrediting and regulatory bodies, including the Liaison Committee on Medical Education, before becoming the university’s ninth college in July 2018. The medical school is now an independent institution, affiliated with both Carilion Clinic and Virginia Tech. The school, along with the closely aligned Virginia Tech Carilion Research Institute, will form the core of the expanded Virginia Tech Carilion Health Sciences and Technology Campus in Roanoke.

“The integration will create new opportunities to access external research funding that is available to institutions with medical schools,” said Nancy Howell Agee, president and chief executive officer of Carilion Clinic. “That builds on our already strong program and will be good for the students, Virginia Tech, and Carilion because it will lead to increased growth in translational research, connecting the theoretical to our patients’ bedside. It will also help us to continue to attract the very best clinical researchers and their teams.”

Many of the major connections between Carilion and the medical school will continue after the integration. Students will continue to train at Carilion Roanoke Memorial Hospital and elsewhere within the Carilion system. About 300 clinicians at Carilion Clinic will continue to hold dual appointments as professors at the medical school, and the two entities will work together to attract and hire expert clinicians to fill future appointments.

“For more than a decade, the relationship between Virginia Tech and Carilion has grown stronger as we both focus on supporting our region,” said Virginia Tech President Tim Sands. “The integration of the school of medicine into a vibrant, growing, and dynamic research university with world-class expertise in the biomedical sciences is a natural next step for both Virginia Tech and Carilion Clinic.”

In 2016, Virginia’s General Assembly approved a bond package to build a $366-million facility to expand the Health Sciences and Technology Campus.

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Precision in Neuroscience

In October, the Virginia Tech Carilion Research Institute became the capital of the precision neuroscience world, as it hosted the Virginia-Nordic Precision Neuroscience Conference, the first international scientific meeting to explore an ultra-personal approach to brain health.

Michael Friedlander, Ph.D., executive director of the institute, pointed out that more than 1,000 disorders of the brain and nervous system result in more hospitalizations than any other disease group, including heart disease and cancer.

“By understanding an individual’s genetics, behavior, education, habits, and life experiences, such as physical and psychological trauma—all the things that make people who they are—the neuroscientific community may be able to develop individually tailored plans that allow people to thrive cognitively, socially, and physically,” he said.

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Carol Gilbert Wins Prestigious Humanism in Medicine Award

Carol Gilbert, M.D., an associate professor of surgery at the Virginia Tech Carilion School of Medicine, has won the Arnold P. Gold Foundation Humanism in Medicine Award. The annual Association of American Medical Colleges award “honors a medical school faculty physician who exemplifies the qualities of a caring and compassionate mentor in the teaching and advising of medical students.”

Virginia Tech Carilion School of Medicine students nominated Gilbert for the award. All 145 U.S. medical schools that are accredited by the Liaison Committee on Medical Education are allowed to nominate one faculty physician for the award; Gilbert was selected from those nominations.

“This award is a big honor for me. I was so amazed to even have the students working on this,” Dr. Gilbert said. “I’m so touched.”

Dr. Gilbert knew she wanted to be a doctor at an early age. “When I was about three, our next-door neighbor, a physician, gave me a stethoscope,” she said. “I grew up with that like some kids grow up with the Hippocratic Oath seriously, particularly the part where you agree to pass on the practice of medicine,” she said. “I feel it is integral to do that. You should be teaching people and passing it on, providing them with the best possible example of what you want to see in a physician.”

Dr. Gilbert has been a physician and trauma surgeon in Roanoke since the early 1980s. Gilbert served as the first medical director for Life-Guard, the first medical helicopter in Virginia.

“I have never witnessed anyone be able to replicate her compassion for teaching as well as medicine,” said Robert Ferguson, M.D., a surgical resident in the Carilion Clinic-Virginia Tech Carilion School of Medicine program. “Dr. Gilbert is a true inspiration to all of us here. She is one of those rare surgeons who is not only a master in the operating room, but is also a compassionate healer and advocate for her patients.”

ASSIGNING NUMBERS TO FEELINGS

There’s a gap in cognitive neuroscience. The psychological understanding of mental disorders addresses clinical symptoms and can offer some relief, but scientists need more to discover the underlying causes and provide definitive diagnoses; they need math.

Scientists at the Virginia Tech Carilion Research Institute are teaming up with neuroscientists the world over to help fill that gap by launching Computational Psychiatry, an MIT Press journal that shares its name with a relatively new scientific field.

“Computational Psychiatry is an exciting collaboration whose time has come,” said Brad Montague, Ph.D., director of the Computational Psychiatry Unit at the Virginia Tech Carilion Research Institute. “Clinicians and computational neuroscientists are joining together to develop next-generation solutions to the problems surrounding mental health.”

Dr. Montague co-edits the journal with Peter Dayan, Ph.D., director of the Gatsby Computational Neuroscience Unit at University College London. They’ve recruited more than 60 cognitive neuroscientists to peer review submissions. The journal is open access, with articles published continually online.

In 2012, Dr. Montague outlined the promise of computational psychiatry in a TEDGlobal talk that has since been viewed nearly 700,000 times. This field, he said, is “redefining with a new lexicon—a mathematical one, actually—the standard ways we think about mental illness.”

A NEW MODEL OF COMMUNITY HEALTH OUTREACH

In partnership with the Bradley Free Clinic, New Horizons Healthcare, and United Way of Roanoke Valley, Carilion has received a $160,000 grant from the Virginia Health Care Foundation to place community health workers in medically underserved areas of Roanoke. The workers will conduct in-home assessments for uninsured patients and help them overcome barriers to good health, with the goal of lowering the cost of care by reducing Emergency Department visits and hospital admissions.

Supporting the community health workers is a Community Hub, an infrastructure that provides tools and strategies to ensure that those at risk are served in a timely, coordinated way by connecting them to meaningful health and social services that produce positive outcomes, avoid duplication of effort, and keep people from falling through the cracks. The Hub includes a network of nonprofit agencies that provide services such as basic health care and safe housing.

Leadership Honor

Tracey Criss, D.O., co-interim chair of psychiatry at Carilion and assistant dean for clinical sciences, was named to the inaugural class of the Carol Emmott Fellowship for Women Leaders in Health. The Public Health Institute program seeks to support outstanding women leaders in creating constructive change in health care.

Sphere of Influence

Modern Healthcare has named Carilion to its 2016 list of “100 Most Influential People in Healthcare” for 2016. Aged is stated to become the chair of the Board of Trustees of the American Hospital Association in 2018.

Badges of Honor

Dr. Montague was named to Modern Healthcare’s “Top 20” for 2016, acknowledging his work at Virginia Tech Carilion Research Institute. He was also named to Modern Healthcare’s “Rising Stars” list in 2016 and named to Modern Healthcare’s “Top Docs” list in 2017. He was also named to Modern Healthcare’s “Top Docs” list in 2017. He was also named to Modern Healthcare’s “100 Hospital and Health System CMOs to Know” in 2017. He was recognized for being among the top physician leaders dedicated to establishing high standards and to strengthening patient safety and quality initiatives.

Next Gen Model

Carilion has been chosen to participate in the Next Generation ACO Model, a Centers for Medicare & Medicaid Services initiative aimed at improving health outcomes and lowering costs.
PERFECT SCORE
Jefferson College of Health Sciences has received the Annual Merit Award from the National Board of Surgical Technology and Surgical Assisting for achieving a 100-percent pass rate on the Certified Surgical Technologist (CST) examination.

The CST—which many local, state, and national health care organizations require for employment—is widely recognized in the health care community as the foremost credential for surgical technologists in the nation. Graduates obtaining national certification as a CST demonstrate understanding of the basic competencies for safe patient care in the operating room.

“We couldn’t be prouder of our students,” said Dr. Nathaniel L. Bishop, president of Jefferson College of Health Sciences. “But we’re not surprised; they’ve consistently excelled individually and together.”

GI JEOPARDY
In October, gastrointestinal fellows Vu Nguyen, M.D., and Tamika Jaswani, M.D., represented the Virginia Tech Carilion School of Medicine in a high-profile game of GI Jeopardy at the annual conference of the American College of Gastroenterology. The fellowship team, including the program director, Paul Yeaton, M.D., competed against 126 other programs in the first round online. Their performance landed them in the top five, qualifying them for the main-stage event.

THE CHEST CHALLENGE
Pulmonary and Critical Care fellows at Carilion were among the top-scoring teams in the CHEST Challenge 2016, an online competition from the American College of Chest Physicians. The fellows who competed—Nathalie Abi Hatem, M.D.; Mary Carter, M.D.; and Santosh Nepal, M.D.—were led by the fellowship director, Mattie Foroozesh, M.D., a physician in the Section of Pulmonary, Critical Care and Sleep Medicine.

STUDENT AWARDED FULBRIGHT TO STUDY ADDICTION
Andrew Gaddis, a third-year student at the Virginia Tech Carilion School of Medicine, has embarked on a yearlong Fulbright study to investigate the growing problem of opioid addiction. Gaddis is conducting his research at Insite, a Vancouver, Canada-based treatment facility that uses harm-reduction practices—including clinician-supervised injections and opiate-replacement medications—for opioid-addicted patients. Gaddis is helping to complete the first-ever pragmatic clinical trial focused on efficacy for opioid replacement therapy. He is also analyzing data in an ongoing Canadian study of 1,500 opiate-replacement therapy recipients to help answer questions about user compliance and efficacy.
A DECADE OF TRANSFORMATION

A regional health system in Virginia has reinvented itself as a national leader with forward-thinking health care, education, and research.

by Charles Slack
HEN MEDICAL LEADERS IN VIRGINIA SEARCH FOR ways to describe how they feel about Carilion Clinic’s remarkable rise over the past decade, one word emerges repeatedly: ”surprised.” • Proud? Certainly. Gratified? Of course. Yet the prevailing theme is a sort of quiet astonishment not just at the number of things that have gone right over the past 10 years, but how quickly it’s all come together.

"The health care business is incremen-
tal and evolutionary," says Nancy Howell Agee, president and chief executive offi-
cer of Carilion. "Change can be slow. But we’ve done an awful lot.”

And that’s putting it mildly. The past decade has seen the rechristening of Carilion Health System into a clinic-based mod-
el, with enhanced emphasis on primary care and chronic care, and deep involve-
ment of clinicians at every level of man-
agement. The number of clinicians has risen dramatically, with more than 700 doctors and 300 advanced clinical prac-
titioners. Enhanced specialties include such areas as heart and vascular, ortho-
paedics, gastroenterology, critical care, and children’s health.

Notable too has been the partnership with Virginia Tech in forming a new med-
ical school that now draws top students and faculty from around the country, and a research institute whose external fund-
ing leapt from zero to nearly $80 million in just a few years. Any of these developments on their own might have taken a decade or more to accomplish. For all of it to happen simultaneously “is beyond comprehen-
sion,” says Joseph T. Moskal, M.D., chair of Carilion’s Board of Directors. "Our leaders were drawn to the clinic model es-
tablished by such esteemed institutions as the Mayo Clinic and the Cleveland Clinic. Among the defining characteristics: excel-
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Embracing Change
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communications as patients moved from primary care to specialists, and back again.
Conflict and jockeying for position are not what they seem to like each other," Smoot says. Search Institute, or VTC. Tech Carilion School of Medicine and Research Foundation and chair of the finance committee of the Carilion Board of Directors at the time. "When you looked at the upper committee, you weren't sure what to expect," says Cynda Johnson, M.D., M.B.A., tapped to lead the medical school as founding dean. A couple of decades had passed without the Liaison Committee on Medical Education accrediting any new medical schools, so nobody had experience in how to do this. Somehow, though, it never occurred to me that we had any choice but to succeed." "Where rethinking the curriculum of an older school might be like turning a battle- ship in a bathtub, VTC's newness allowed for a virtual blank slate. The medical school forged its own curriculum, one based heav- ily on problem-based learning and research. "The traditional medical school is two years of basic science and two years of clinical science," Dr. Johnson says. "But, actually, it's not just basic science and clinical science that are important these days. Just as essential are interdisciplinary training, working as teams, and excellent communication skills." At VTC, students tackle patient cases right from the start, honing their skills in problem-solving, research, and diagnosis. It's an early introduction to "interprofes- sionalism," a central tenet of the curriculum that requires cooperation across all tradi- tional divides, with groups that may involve nurses, physicians from multiple specialties, and research specialists as well as the patient and the patient's family. "What we're doing is making a state- ment to students that we understand that board exams don't capture how effectively you work together as a team or how well you communicate with your patients," says Dr. Johnson, a family medicine phys-ician. "But without skill in those essen- tial aspects of the practice of medicine, you can't be a great clinician." Research Minded Cooperation is just as essential in fostering this kind of think- ing idea behind the Virginia Tech Carilion Research Institute. Michael Friedlander, Ph.D., its founding executive director, knew he had to work hard to attract the type of people he wanted to establish the new institute as a research hub. "Roanoke, Virginia, didn't really exist as a biomedical research center," he says. Like Dr. Johnson, Dr. Friedlander— who had held leadership positions at major research centers in Texas and Alabama— was drawn by the rare opportunity to bring an entrepreneurial vision to a new center and to populate it with the best scientists he could find. Two areas he knew he wanted to establish were brain research and heart research. "We got off to a fast start in brain research," Dr. Friedlander says. "We brought in several internationally re- nowned, established investigators, such as Dr. Reid Montague in human brain imaging, Dr. Warren Bickel in the study of addiction and substance abuse, Dr. Craig Ramey in early childhood brain and behavior development, and Dr. Sharon Ramey in neurorehabilitation research for children with cerebral palsy." The other major focus area, cardiovas- cular research, reached an early milestone with the arrival of Robert Gourdie, Ph.D., to direct the institute's new Center for Heart and Regenerative Medicine Research. "We didn't have a reputation in the area, but everybody in the field knew who "What we're doing is making a state- ment to students that we understand that board exams don't capture how effectively you work together as a team or how well you communicate with your patients," says Dr. Johnson, a family medicine phys-ician. 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The two venerable institu- tions were neighbors in southwest Virginia, and their missions of patient care, medical research, and education, and support of their communities—made them natural allies. Yet bringing them together required a shared vision, strong financial commitments, and a determination to help communities in the region. Carilion had already been involved in graduate medical education for more than half a century. In addition, one of its academic affiliates—Jefferson College of Health Sciences, which trains nurses and allied health profession- als—had been at the forefront of interprofessional training for decades. "Over the years we had talked about how it would make sense to have a medical school," says Nancy Howell Agee, president and chief executive officer of Carilion. Virginia Tech, deeply involved in many aspects of biomedical research—with joint degree programs with Wake Forest University School of Medicine—was looking to extend its ongoing mission to provide students with meaningful learning experiences,” says Timothy Sands, Ph.D., president of Virginia Tech. Learning Together Still, melding a large public university and a private clinic posed many potential challenges. "We both had smart, caring people doing good work, but these were two different cultures," Agee says. “We weren’t used to the processes a state institution has to follow. And Virginia Tech had no experience with certain issues related to patient care. We learned together.” The partnership publicly launched in January 2007, and in May of the following year, the governor of Virginia signed a law calling for $59 million in capital projects bonds to help finance the new school and an affiliated research institutes. The first med- ical students arrived in 2010. "By promoting innovation in research as well as in patient care, we’re helping improve the financial stability and integrity of the entire region.” "Smart People, Brilliant Ideas" “Our partnership has connected smart people with brilliant ideas,” says Dr. Sands. The Virginia Tech Carilion School of Med- icine has quickly become a sought-after destination, attracting more than 4,600 applicants for only 42 spots in a recent class. Every student in the school’s four graduating classes has been matched with a postgraduate residency. And the dramatic success of the Virginia Tech Carilion Research Institute led to a new milestone in 2016, when the Commonwealth of Virginia agreed to join Carilion and the university in providing funding to double the institute’s size and number of research teams. “Now we’re promoting innovation on a grand scale,” Agee says, “we’re helping improve the financial stability and integrity of the entire region.” Says Dr. Sands, “Connecting medical students and Carilion clinicians with researchers studying everything from brain science, infectious disease, and biomaterials brings great potential for breakthroughs that make a difference in people’s lives.” Written by David Blumke
A decade ago, Carilion Clinic, seeking to transform its health care model and adapt to an uncertain future, turned to nationally renowned institutions such as the Mayo Clinic to help light the path forward. After a string of high-profile successes, these days it’s Chopra, and it’s snapping up local talent, a team of experts, and a national voice, the emerging role of the American Medical Colleges.

“Leadership is critically important, and their collaborative approach to ensuring the success of the enterprise has been a critical success factor,” Dr. Kirch says.

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At the top in Virginia for first-year college of health Sciences places the carilion-affiliated Jefferson an emerging national Voice of the American Medical Colleges. Leaders such as Darrell Kirch, M.D., president and chief executive officer of Medicine and research institute, has caught the eye of over health care.

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The VTC School of Medicine full accreditation, exactly on time VTC Jefferson College of Health Sciences, Carilion, and Virginia Tech host Collaborating Across Borders, the leading north American conference for advancing the field of interprofessionalism.

Our number-one priority is doing what we do best. That’s caring for patients, educating the next generation of our workforce, and moving more toward research.” — Nancy Howell Agee

“Tens of thousands, when we prepared an annual report, I might mention three or four talks that we gave nationally,” says Nancy Howell Agee, president and chief executive officer of Carilion. “Now, all the time, we have people giving presentations, writing journal articles, and gaining national and international attention.”

As Carilion’s leader, Agee, named one of Modern Healthcare’s 100 most influential people for 2016, finds herself a bigger part of that national conversation as well. In 2016 she’ll take over as chair of the Board of Trustees of the American Hospital Association.

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Dr. Gourdie was,” Dr. Friedlander says. “When they saw he was in Roanoke, that gave us immediate credibility.”

Top scientists from academic medical centers across the country followed, including Stones’ director of research, an expert in sudden cardiac death, James Smyth, Ph.D., a rising star in the field of heart remodeling.

As the institute’s reputation as a destination for researchers grew, so did funding from the National Institutes of Health, amounting to nearly $100 million. And the institute’s scientists are increasingly spinning their research into entrepreneurial ventures—with the promise of new jobs and economic activity for the Roanoke area.

“Virtuous cycle is a term I use a lot,” Dr. Friedlander says.

Baking Down Barriers

A key emphasis at both Carilion and the research institute is to encourage collaboration and break down silos—to foster projects involving laboratory scientists and frontline physicians who treat patients day in and day out.

Dr. Friedlander cites one of many collaborations. Damon Kaushl, M.D., director of Carilion’s emergency medical residency program, and Stephen LaConte, Ph.D., an associate professor at the Virginia Tech Carilion Research Institute, have teamed up to study emergency department patients with mild head injuries.

By combining Dr. Kaushl’s clinical expertise with Dr. LaConte’s innovations in functional magnetic resonance imaging, the collaborators are hoping to identify brain activity patterns that are distinctive both for those whose head injuries produce few if any lasting effects, and those who develop serious symptoms. The aim is two-fold: to enable clinicians to detect, through a quick brain scan, whether someone with a mild brain injury is likely to develop serious symptoms, and to find new methods of treating and caring for people who have suffered such injuries.

As with other collaborations between the two institutional partners, the ultimate goal is to forge research discoveries that will enable the best clinical care.

Physician Managers

At Carilion, that spirit of shared mission, collaboration, and cooperation extends to an area of health care often fraught with divisions and competing priorities: hospital management. A key component of adopting the clinic model has been allowing for full participation of clinicians in setting the direction for the clinic and making key management decisions.

“That’s no accident,” says Agee. “We’ve added meaningful physician leadership, with physicians at the table making the decisions that govern our organization.”

Agee, trained as a nurse, understood at a visceral level the value of having clinicians involved in key policy decisions. Still, putting that goal into practice meant overcoming resistance from those accustomed to clear divisions of responsibility.

“Some of our senior managers said, ‘Well, we’ve got economists and scientists and physicians, but we’re the ones managing,’” Agee recalls. “We had to spend a fair amount of time helping people understand the value and the leadership quality that could come with clinicians, physicians, nurses, and managers all working together to lead the organization.”

Dr. Moskal acknowledges that physicians, too, were skeptical about just how serious Carilion was about including them in management. Yet those doubts began to melt away with the formal adoption of a “dyad model,” in which physicians and administrators pair up to share management of clinical service lines and take joint responsibility for quality of care as well as operations, costs, and efficiency. Dyad partners are pairs of carilion’s leaders where they have the ear of top executives and discuss everything from long-range strategy to workforce planning.

Dr. Moskal, one such member of the Board of Governors, says that while members sometimes disagree on next steps, “We’re fortunate to have leaders who recognize the value of communication.”

The American Medical Colleges announces plans to fold the VTC School of Medicine into the Virginia Tech Carilion Research Institute

As a result of the folding of the VTC School of Medicine, Virginia Tech and Carilion announce that VTC will form the Virginia Tech Carilion Research Institute and the Virginia Tech Carilion Institute.

The General Assembly of Virginia allocate $45 million to double the size of the Virginia Tech Carilion Research Institute.
A team approach helps Carilion lead the charge against Virginia’s opioid addiction epidemic.

BY JESSICA CERRETANI
t’s Saturday night and the man is at the emergency department again. This time, he tells the physician on call, he’s strained his back doing yardwork. Feels like I pulled a muscle or something, Doc. The pain, he says, is unbearable—but a prescription for Oxycontin might help. • It’s an increasingly familiar scene at emergency departments throughout Virginia and across the country. The truth is that the patient isn’t suffering from back pain—or a twisted ankle, sprained wrist, or other soft-tissue injury. Yet he does have a real health concern: an addiction to opioids. And he isn’t alone. According to the U.S. Centers for Disease Control and Prevention, this country is in the midst of an epidemic. In 2015 alone, more than 33,000 Americans died from an overdose of opioids—and nearly half of those deaths involved prescription opioids such as Oxycontin.

The scenario is all too familiar to Virginia clinicians. In 2016, Governor Terry McAuliffe declared the commonwealth’s opioid addiction crisis a public health emergency. The statistics are troubling: More people in Virginia now die from opioid overdoses than from car accidents, at an estimated rate of three people a day. Overdoses from heroin—often laced with the powerful opioid fentanyl—are increasingly common in local emergency departments, says John Burton, M.D., chair of emergency medicine at Carilion Clinic. Another common sight: frequent fliers like the man visiting the emergency department.

“In the past decade, we’ve seen a huge surge of people feigning illness in an attempt to obtain opioids for themselves or to sell,” Dr. Burton says. “It’s led us to take a hard look at our prescribing practices and make some changes.”

Last fall, Carilion leaders met with Virginia’s lieutenant governor, Ralph Northam, to brainstorm ways in which they could help solve the state’s increasing addiction problem. But the fact is that Carilion has been at the forefront of this battle for much longer than just a few months—and its clinicians are seeing results.

The U.S. Department of Agriculture has awarded Carilion Clinic $434,162 to deliver telemedicine to 12 rural counties in southwest Virginia. The grant is one of five the agency awarded to help provide treatment for the growing opioid epidemic in rural central Appalachia.

“Because addiction treatment is often out of reach for many in rural America,” said Tom Vilsack, former U.S. Department of Agriculture secretary, “expanding access to telemedicine is an important step toward making sure rural communities have the tools they need to fight the opioid epidemic.”

The Carilion program will enable patients struggling with opioid addiction in remote areas to use tablets in their local clinicians’ offices to speak with Roanoke psychiatrists. Fifteen of the 18 sites targeted are in high-poverty counties.

“Telemedicine will allow us to remove a critical barrier to care in remote areas, where the need is often greatest,” said Thomas Milam, M.D., co-interim chair of Carilion’s Department of Psychiatry, which secured the grant. “We can facilitate the psychosocial counseling that patients must undergo to keep their eligibility for medication-assisted treatment. We can also support the providers in rural clinics who are offering that treatment.”

The program is one of several innovations the Department of Psychiatry is pursuing in the face of the epidemic. Several physicians are collaborating with the Virginia Department of Health to evaluate outcomes from opioid replacement therapy during pregnancy, for example; while others are working with pregnant women addicted to opioids to secure a better future for mothers and newborns.

The medical community used to believe that a few weeks on opioids was safe for people in pain,” says Dr. Burton. “Now we know that even that relatively short timeframe can lead to abuse. These medications are much more addictive than was once thought.”

Over time, people who become addicted to prescription opioids can progress to stronger drugs such as heroin and fentanyl, which carry a higher risk of overdose.

The key to addressing opioid addiction is a multipronged approach, say experts—and clinicians have a powerful role to play in it.

A PAINFUL TRUTH

To understand the current crisis, it helps to understand the roots of addiction, says Warren Bickel, Ph.D., a professor at the Virginia Tech Carilion Research Institute, where he also directs the Addiction Recovery Research Center. His research has demonstrated that people struggling with addiction radically discount the future in favor of instant gratification. In one study, he and his colleagues found that, when asked to think about their future, healthy non-addicts imagined themselves an average of nearly five years into the future. Opioid-dependent people identified the future as just nine days.

This concept, known as delay discounting, suggests that substance abusers are unable to consider the long-term consequences of their addiction because they are focused on an immediate need to procure drugs and quell uncomfortable withdrawal symptoms. That can help explain why drug seekers show up in emergency departments and physicians’ offices, desperate to obtain their next fix. Many of these patients may have started taking prescription opioids for legitimate sources of pain, unaware that these substances are highly addictive.

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CHANGE MAKERS

The key to addressing opioid addiction is a multipronged approach, say experts—and clinicians have a powerful role to play in it.

"Addiction affects the whole person, and people need a lot of support.”

—Warren Bickel, Ph.D.
Dr. Burton has helped craft statewide guidelines for reset—making changes to the way opioid medications are prescribed. "These guidelines add an extra layer of protection for clinicians."

"We make sure patients understand that these medications carry an increased risk of death." —Phyllis Whitehead, Ph.D.

Dr. Burton says, "Limiting opioid use helps them achieve that more quickly."

**MULTIPLE CHOICE**

To further reduce reliance on opioid medications, Carilion has launched a comprehensive pain management program that offers a range of services and provides primary care physicians with a referral option. "Our ability to manage our patients’ pain is absolutely essen-
tial to their care," says Dr. Long. "Yet, historically, pain manage-
ment doesn’t belong in any one specialty, as it’s a symptom rather than a diagnosis. Caregivers across the continuum have had to treat pain, with varying degrees of success."

Rather than relying on medications that mask pain, Carilion’s Chronic Pain Management Clinic treats pain at its root. Clinicians draw upon a range of approaches for relieving suffering without relying on prescription drugs.

Under the leadership of Dr. Long, an interdisciplinary team has developed a comprehensive program that addresses pain from a systems-wide perspective. The program builds on the work of several departments—including orthopaedics, emergency medicine, and family medicine—and represents an integrated, patient-centered approach. It also introduces complementary and alternative therapies, such as acupuncture, reiki, pet therapy, mindfulness practice, and massage.

**TAKING THE LONG VIEW**

For people already struggling with opioid abuse, Dr. Bickel says, physicians should focus on explaining the value of treatment—and the risks of discontinuing it. "The most important thing," he says, "is for patients to understand that there are treatments that work—but only as long as the patients remain on them.

“Dr. Bickel notes that Suboxone—a combination of the opioid buprenorphine and the anti-overdose drug naloxone—can serve as a bridge to allow addicts to taper off without getting high. It’s now a standard remedy for opioid addicts undergoing medication-assisted treatment. Yet, Suboxone, which satisfies the physical cravings of addiction without the euphoric effects, can in turn be abused. As an imperfect and even controversial solution, the drug needs careful monitoring by specially trained clinicians.

Regardless of treatment, long-term support is key, Dr. Bickel says. “We need to stress the importance of sticking with treat-
ment,” he adds. “The vast majority of overdoses I’ve seen occur when someone stops medication too early and returns to heroin. Addiction affects the whole person, and people need a lot of support to work through those issues and stay clean.”

**A COMMITMENT TO COMMUNITY**

Carilion’s clinicians say they aren’t surprised that the hospital has taken the lead in addressing the state’s addiction crisis. "Our clinic model has always promoted collaboration between departments and disciplines," says Dr. Burton. "This creates an environment that encourages us to communicate across the organization and create cutting-edge solutions for patients. Dealing with opioid addiction is just one example of this approach."

That attitude carries beyond hospital walls. Carilion is now running a telemedicine initiative that uses video chats to con-
nect rural patients and their physicians with addiction spe-
cialists—even though they may be located many miles apart.

"We always put our community first," she says. "This is just the beginning of what we can do to help."
clenched—may be the most familiar image of these seizures. In reality, though, seizures range in severity and can also manifest as twitching, blackouts, and hallucinations.

“When I have a seizure, it’s different than what people usually imagine,” says Mayhew, a 22-year-old occupational therapy assistant who was diagnosed with epilepsy in 2016. “I just blank out. I’m clueless about what’s going on around me,
and if someone tries to talk to me I have no idea what they're saying.”

There’s also often a cumulative, cognitive impact for those who endure these electrical storms over time: “There’s often a cumulative, cognitive impact for those who endure these electrical storms over time: the erosion of their short- and long-term memory, as well as language skills.”

A Needed Advancement
Epilepsy is a chronic condition that can affect people of all ages, and the cause isn’t always clear. Some cases are thought to be genetic while others can be traced to brain lesions at the eye of the electrical storm. "This type of surgery engenders a lot of fear factor for patients," he says. "It means you, 'Sorry, there's no way we can help you,'” Dr. Witcher says. "With these new approaches such as laser interstitial therapy, which Dr. Witcher describes as "a game changer in epilepsy surgery.""

The technical procedures themselves can be used to treat the focus of the epilepsy. In other cases, surgery can use new, minimally invasive approaches such as laser interstitial therapy, which Dr. Witcher explains, helps the clinical team more accurately identify the source, or "focus," of the electrical storms that trigger a patient’s seizures. The procedure is safer and more easily borne by patients. It is also more accurate, pinpointing foci more easily, even in cases in which more than one lesion in the brain is causing the trouble. "There were so many cases in the past in which lesions could not be identified from outside of the skull, and practitioners had to say, 'Sorry, there's no way we can help you,'” Dr. Witcher says. "With these new technologies, we can offer more solutions.”

To detect these foci, Dr. Witcher’s team has acquired a “stereotactic robot,” the first in Virginia to aid in intracranial surgery. Dr. Witcher works in tandem with the robot, guiding it through the tiny scalp incision—a three-millimeter cut through which electrodes can be placed directly on the brain. These electrodes allow the clinicians to monitor both hemispheres and multiple lobes simultaneously, and produce three-dimensional readouts of the brain’s electrical activity. SEEG helps the clinical team more accurately identify the source, or “focus,” of the electrical storms that trigger a patient’s seizures. The procedure is safer and more easily borne by patients. It is also more accurate, pinpointing foci more easily, even in cases in which more than one lesion in the brain is causing the trouble. "There were so many cases in the past in which lesions could not be identified from outside of the skull, and practitioners had to say, 'Sorry, there's no way we can help you,'” Dr. Witcher says. "With these new technologies, we can offer more solutions.”

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Beyond the Fear Factor
While these advances have turned the tide for epilepsy treatment, enabling surgeons to reduce and control seizures in patients who would have been considered untreatable just a few years ago, the techniques are not being applied as widely as they could be. "Many people have been biased against surgery for epilepsy in the past because of the severity of the procedures that were available,” Dr. Witcher says. “Overcoming these fears is still a challenge. Educating our referral base about the new treatments that are available will help, people are often surprised these options exist.”

These advances have completely revolutionized the way epilepsy is treated, Dr. Witcher adds. “At Carilion, we can now offer the full armamentarium of options that were previously available only to a few academic centers in the country,” he says. “This is great news for our patients. These tools are unparalleled in helping people regain control of their lives.”

THE PERFECT SPOT: Mark Witcher, M.D., is a national leader in using real-time magnetic-resonance-imaging-guided visualization for highly accurate laser ablations in people with epilepsy.
Call of the Wild

Carilion has launched a wilderness medicine fellowship in response to the region’s popularity as an outdoor destination. BY PAULA BYRON

LIVING ON THE EDGE: McAfee Knob, one of the most photographed spots on the Appalachian Trail, offers an almost 270-degree view of the Catawba Valley to the west, Tinker Cliffs to the north, and the Roanoke Valley to the east.
McAfee Knob, an iconic bluff on the Appalachian Trail, offers panoramic views of the azure-hued peaks that give the Blue Ridge Mountains their name. The popular overlook also offers health professionals plenty of practice in wilderness medicine.

At least once a week, emergency medical technicians in Roanoke, Virginia, are called to McAfee and nearby Dragon’s Tooth, a rocky outcropping that juts several dozen feet in the air, to assist in a crisis: a broken bone, dehydration, a calamitous mixing of alcohol and outdoors adventure. On call to accompany those experts is Stephanie Lareau, M.D., director of Carilion Clinic’s new Wilderness Medicine Fellowship.

“We’ve developed a protocol that allows me to go on calls with emergency medical techs, enabling me to offer training in wilderness settings at the same time I’m assisting on the trail,” says Dr. Lareau. “I can also introduce other physicians to the principles and practicalities of wilderness medicine.”

HIGH STAKES

In nearly a decade of providing wilderness medicine, Dr. Lareau has seen it all: a Peruvian farmerworker with a machete injury, a snakebiten six-year-old who had to be carried several miles along a trail on her mother’s back, a teenager stabbed in the chest while twirl- ing daggers rather than batons. But Dr. Lareau’s most challenging patient to date may well have been a woman who tumbled in her own backyard.

It was a wintry evening, and in the dark the 64-year-old woman slipped on some icy steps. She lived alone in rural Virginia, and when she was found the next day, she had passed out cold. A couple of neighbors jigged her up on the helipad of Carilion Roanoke Memorial Hospital. Nestled at the base of Mill Mountain, the flagship hospital is just minutes from Roanoke, a thousand miles from Maine, and there she tripped. It was an unspectacular stumble, but enough to fracture her leg and land her in Carilion Roanoke Memorial Hospital’s Emergency Department. Both the trail and her hospital stay clearly proved agreeable; she later returned to complete the hike and, ultimately, to start the fellowship in 2016.

Dr. Gehner has spent her year conducting research on the impact of pack weights on long-distance hikers. She has also forged a collaboration with emergency medicine physicians in Nepal. At the conclusion of Dr. Gehner’s fellowship in 2017, Joshua Nichols, M.D., a member of the charter class of the Virginia Tech Carilion School of Medicine, will take her place. Dr. Nichols, who is completing an emergency medicine residency at Carilion, has already collaborated with Dr. Lareau on using a low-cost mannequin in wilderness medicine simulations.

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TEACHABLE MOMENTS

A primary focus of the fellowship program is educating the community to stay safe. As part of her work, Dr. Lareau teams up with Roanoke Parks and Recreation to offer the Disrupting Natural Selection Lecture Series, whose facetious title suggests that slip-ups in nature will lead to an early extinction. The goal: to lessen the need for backcountry rescues.

Topics include trailside safety, cold-weather injuries, and moving-water hazards. Dr. Lareau says she often needs to correct misconceptions. “I have to tell our students, no—running in a zigzag pattern when a copperhead is after you won’t break the snake’s back.”

Reaching extends to other parts of the globe. The Wilderness Medicine Fellowship has partnered with Sacred Valley Health to design a wilderness first-aid course for local health care workers, known as promotor, in the village of Ollantay, Peru.

“We teach the promotoras such skills as splinting, applying tourniquets, and understanding when people need to be transported to town,” Dr. Lareau says. “Their skills can make a real difference in the survival of their community members.”

In 2013, the same year she joined Carilion as an emergency medicine physician, Dr. Lareau co-founded Blue Ridge Adventure Medicine, for which she serves as lead instructor. Two years later, she was tasked with creating Carilion’s Wilderness Medicine Fellowship. The one-year program joins less than a dozen such programs nationally.

PASSING THE BATON

The first physician to undertake the fellowship, Jessica Gehner, M.D., had her earliest encounter with Carilion as an emergency patient. The year before she started medical school, she started hiking the Appalachian Trail south from Maine. She got as far as Roanoke, and there she tripped. It was an unspectacular stumble, but enough to fracture her leg and land her in Carilion Roanoke Memorial Hospital’s Emergency Department. Both the trail and her hospital stay clearly proved agreeable; she later returned to complete the hike and, ultimately, to start the fellowship in 2016.

Dr. Gehner has spent her year conducting research on the impact of pack weights on long-distance hikers.

In their scramble down the mountain they were forced to take cover in a cave.

View from the top

Before joining Carilion, Dr. Lareau had already amassed impressive credentials. A board member of the Appalachian Center for Wilderness Medicine since 2008, she had also completed a wilderness medicine fellowship from Georgia Health Sciences University. Recruiting Dr. Lareau to Carilion was easy. The Emergency Department chair, John Burton, M.D., took her up on the helpdesk of Carilion Roanoke Memorial Hospital. Nestled at the base of Mill Mountain, the hospital is minutes from the Blue Ridge Parkway and the Appalachian Trail. To the west, Dr. Lareau could see a river and miles of greenways snaking through the city. In the distance, she could see undulating hills leading to sunlit mountain ranges.

“I immediately fell in love with the area,” she says. In 2013, the same year she joined Carilion as an emergency medicine physician, Dr. Lareau co-founded Blue Ridge Adventure Medicine, for which she serves as lead instructor. Two years later, she was tasked with creating Carilion’s Wilderness Medicine Fellowship. The one-year program joins less than a dozen such programs nationally.

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Medical students joined with clinicians and engineering students to develop a technique to enhance spinal fusion.  
by Alison Matthiessen

When Zakkary Walterscheid first arrived at the Virginia Tech Carilion School of Medicine, he was ready to put his focus on becoming a doctor. “I had a nice diploma to hang on the wall that said ‘biomedical engineering,’” says the third-year student. “But I thought my engineering career was behind me.”

That is, until a few months into medical school, when he met Pat Artis, Ph.D., a professor of practice in the Department of Biomedical Engineering and Mechanics (BEAM) in Virginia Tech’s College of Engineering. After bonding over their engineering backgrounds at a community reception for medical students, Dr. Artis gave Walterscheid his card and encouraged him to consider teaming up with a BEAM senior project team for his research.

As Walterscheid dove into his studies, he found himself drawn to orthopaedics. He began working on his research project—a requirement for all Virginia Tech Carilion medical students—with Jonathan Carmouche, M.D., an assistant professor of orthopaedic surgery and chief of orthopaedic spine at Carilion Clinic’s Institute for Orthopaedics and Neurosciences. Dr. Carmouche directs the Musculoskeletal Education and Research Center, which he founded within Carilion’s Department of Orthopaedics. There he was working on a new technique for spine surgery in which surgeons extract bone from a patient’s vertebrae and use it to replace a spinal disc.

When he met Pat Artis, Walterscheid’s research offered opportunities for VTC medical students. While Conor O’Neill began to compare the new technique with the old, Walterscheid took a different angle. “The question was, if you are taking a chunk of bone out of the vertebrae, are you making it weaker?” Walterscheid says. “I figured the best way to get that answer was to take models, compress them, and see how they compared. It became clear we needed to involve an engineer.”

Walterscheid remembered the earlier offer of help. Dr. Artis connected him with Raffaella De Vita, Ph.D., an associate professor of biomedical engineering and mechanics in the College of Engineering, who had the necessary equipment. Dr. Artis also encouraged Walterscheid to pitch his project to undergraduates looking for research for their senior design projects.

“The day I pitched my project, I walked away with five engineers on my team,” Walterscheid says. The undergraduates helped with the compression study—yet didn’t stop there. “I had talked to Dr. Carmouche about a drill that would have a manual stop so you wouldn’t go too deep,” Walterscheid says. “But the issue was, how do you drill in and bring the bone back out without damaging anything?”

So the students designed a tool that could be used to extract bone during surgery. Essentially, they adapted an Archimedes drill to use water against gravity. The drill spins a screw down while using water to send the material back up for use in the surgery.

“The technique is simple and elegant,” Walterscheid says. “It was brilliant that they were able to take a classical engineering principle and apply it to clinical use.”

“The volume of data they came up with in a short time was amazing,” Dr. Carmouche says. “The tool design was much more sophisticated than I ever would have expected.”

The undergraduates were listed as authors on the research paper that Walterscheid presented as a scientific exhibit at an international meeting of the American Academy of Orthopaedic Surgeons. The feedback was positive, especially among surgeons who work with diabetics and smokers, whose bone quality tends to be compromised. Others noted the advantage the drill would represent in resource-scarce settings.

“When people approach problems from orthogonal perspectives, they yield an enormous number of new ideas and ways to approach problems,” Dr. Artis says. “The doctors help the engineers pare down ideas to what is reasonable with patients, and the engineers solve problems that the doctors don’t necessarily have the time nor the mechanics background to be able to approach.”

Dr. Carmouche agrees that time is a hugely limiting factor for the orthopaedists in his practice who want to conduct research. “We have a bunch of ideas,” he says. “The students have time to pour into it. Together, we can bring ideas to fruition.”

Beyond the win for research, the projects can also shape students’ futures. “When I got to medical school, I knew we were required to do research,” Walterscheid says. “It was one of the things that I liked. But I thought after that, research would be behind me. Now it will absolutely be something I continue. I want to practice at a major academic center and still be involved.”

“When I got to medical school, I knew we were required to do research. It was one of the things that I liked. But I thought after that, research would be behind me. Now it will absolutely be something I continue.”  
Zakkary Walterscheid
“Her name was Magill, she called herself Lil, but everyone knew her as Nancy.”

That lyric from “Rocky Raccoon,” a track on the Beatles’ famous White Album, was the tipoff for Thomas Kerkering, M.D. Listening to music one evening, just a few years into his career as an infectious disease doctor, he had a eureka moment.

He had been stumped that none of the 10 patients he was treating for a rare infectious disease knew one another. Then it hit him: The cast of characters the patients mentioned—“Dicky,” “Dudy,” “Bubba,” “Top Hat,” and “Screaming Jesus”—were all the same man. Like “Magill,” the index patient was known by a range of names.

That and other insights gained from nearly 40 years in medicine have earned Dr. Kerkering, Carilion Clinic’s chief of infectious disease, an international reputation. At the height of the Ebola outbreak, for example, the World Health Organization enlisted his help in Sierra Leone, where he trained health care workers to care for infected patients.

Back home in Roanoke, Dr. Kerkering treats patients for infections ranging from pneumonia to H1N1 to HIV. In 2013, he treated the youngest known patient in a fungal meningitis outbreak that had been caused by tainted steroid shots.

“I find deep satisfaction in learning my patients’ stories, which help me understand how to care for them,” he says. “Every patient is a novel.”

“Mystery Man:” During four decades of treating patients for infectious diseases both common and rare, Thomas Kerkering, M.D., has learned to interpret even the subtlest of medical clues. With this patient, though, the diagnosis required less detective work: a case of the flu.

A Day in the Life of Thomas Kerkering

The internationally renowned infectious disease specialist remains ever alert for the next medical mystery. PHOTO ESSAY BY DAVID HUNGATE
ON THE MOVE

For Thomas Kerkerin, M.D., a typical day means moving between various clinical sites to treat various sites of infection. Clockwise from right: Dr. Kerkerin makes notations on patient charts at Bradley Free Clinic, where he volunteers alongside Carilion neurologist Gary Harbold, M.D.; examines a patient in Carilion’s infectious disease department; discusses treatment strategy with a Carilion Roanoke Memorial Hospital patient; tests a patient’s hand strength as part of a routine examination at Bradley Free Clinic; and checks on the recovery of a pediatric patient.

THE VISION THING

Dr. Kerkerin, who also teaches at the Virginia Tech Carilion School of Medicine, examines an eight-year-old who contracted the microscopic parasite Cryptosporidium on his family’s farm in Franklin County, Virginia. The boy recovered from the infection after a weeklong hospitalization.
THE COMFORTER

As Caroline Osborne was fighting for her life, her friends found new meaning in their white coats.

By Alison Matthiessen

I T WAS CURIOSITY THAT HAD DRAWN CAROLINE Osborne to medical school, and curiosity that led her to question her own medical diagnosis. After having a suspicious spot on her right arm removed, she received good news—yet the test results didn’t end her quest. “The sample came back benign, but I’m a medical student,” she said months later. “I wanted to know more.” So she sought additional tests of a larger section and found her instincts were right: It was melanoma. After additional surgery, her prognosis was excellent.

A second-year student at the Virginia Tech Carilion School of Medicine at the time, Osborne barely missed a beat. She passed the first round of her board exams and started her third-year clerkship rotations on schedule. In January 2013, though, about six months into her clerkships, she began to experience visual defects. “Then we found out she had many lesions in her brain,” said her father, Carl Osborne. “The cancer was basically everywhere and very aggressive. Doctors told us she had just months to live.”

The news devastated not just Caroline and her family, but her extended medical school family as well. “We were all close,” said Matthew Joy, M.D., president of the school’s charter class. “We felt like someone in our own families had been given this diagnosis.”

When her family decided to seek treatments abroad, her classmates sent cards, flowers and, most memorably, a quilt made from their white coats. “We know how precious those white coats are,” Osborne’s mother, Ellen, says. “For Caroline, it brightened the day because she knew what it meant that they did that for her.”

Just a few months after the class graduated, Caroline lost her battle. Her life—and death—still resonates for her classmates, who are now medical residents. “Caroline made us think about what’s really important,” said Dr. Joy, a plastic surgery resident at Carilion. “It goes beyond just medicine to how you want to spend your life, make it worthwhile, and take advantage of every opportunity you have.”

A FELECTION IN EVERY STITCH

A. From the very beginning of medical school, Caroline Osborne demonstrated both an easy friendliness and natural leadership skills.

B. Her classmates all contributed pieces of their white coats for a commemorative quilt, which they sent to Osborne while she was undergoing experimental treatments.

C. Osborne (second row up, second from the right) was one of 42 members of the Virginia Tech Carilion School of Medicine’s charter class.

D. On the first day of her clinical clerkship, Osborne showed grace under pressure, demonstrating clinical skill, answering her attending’s questions impeccably, and treating patients with professionalism and compassion.
Family Medicine

MARK GREENAWALD, M.D., vice chair of academic affairs and professional development, was named Family Physician of the Year by the Virginia Academy of Family Physicians. The award recognizes physicians who provide the community with compassionate, comprehensive, and caring medical service on a continuing basis; are directly and effectively involved in community affairs and activities that enhance the quality of life in the community; and serve as a role model in the community and within the profession.

HETZAL HARTLEY, M.D., medical director for Occupational Medicine, was appointed by Governor Terry McAuliffe to the medical advisory board for the Virginia Department of Motor Vehicles.

ROGER HOFFORD, M.D., served on the Virginia Academy of Family Physicians’ Legislative Committee.

MICHAEL JEREMIAH, M.D., chair of Family and Community Medicine, was selected to serve as chair of the Healthcare Delivery Transformation Committee of the Association of Department of Family Medicine. Dr. Jeremiah has also served as a member of the association’s Board of Directors.

Internal Medicine

A quartet of Carilion doctors—SAMEH AZIZ, M.D., a physician with Pulmonary Medicine; BRUSH Patel, M.D., a resident with Pulmonary Critical Care; and SUSANTI IE, M.D., and EDMUNDO RUBIO, M.D., both physicians with Critical Care—authored “The Lung Point Sign, not Pathognomonic of a Pneumothorax,” which was published in Ultrasound Quarterly in September 2016.

THOMAS KERKERING, M.D., chief of Infectious Disease, was recognized by the Medical Society of Virginia Foundation with a Salute to Service Award, which acknowledges his long-term service and commitment to caring for patients in the international community.

Neurosurgery

GARY SIMONDS, M.D., chief of Neurosurgery, received the Self-Assessment in Neurosurgical Surgery (SANS) Service Award from the Congress of Neurological Surgeons for his service and contributions to resident education.

Obstetrics and Gynecology

EDUARDO LARA-TORRE, M.D., chief of Obstetrics and Gynecology, and FIDEL VALEA, M.D., chair of Obstetrics and Gynecology, coauthored a chapter on pediatric and adolescent gynecology for the seventh edition of Comprehensive Gynecology, a textbook published by Elsevier in August. Dr. Valea also served as an editor on the book.

Dr. Valea gave the A. Cullen Randolph Memorial Lecture at the District IV and VI annual meeting of the American Congress of Obstetricians and Gynecologists in October. His lecture was titled “Surgery on the Morbidly Obese and Other Challenging Cases.”

Office Care of Women, a textbook published by Cambridge University Press, featured four chapters authored or coauthored by physicians with Obstetrics and Gynecology, including MELANIE ALTIZER, M.D.; CHRISTINE CANEVA, M.D.; DR. LARA-TORRE; AMANDA MUNCHISON, M.D.; MANJUSHA SAHNI, M.D.; ERIC SWISHER, M.D.; and PATRICIA M. WEISS, M.D.

Dr. Lara-Torre, Munchison, and Weiss coauthored a chapter on mastalgia for the most recent edition of The 5-Minute Clinical Consult, a medical reference published by Wolters Kluwer Health.

Orthopaedics

CALEB BEHREND, M.D., is part of a Clemson University team that received a $1.57 million grant from the National Institutes of Health to develop a novel imaging technique and dye-based sensor to detect and monitor bacterial infections on implanted medical devices.

Psychiatry

ANITA KABLINGER, M.D., coauthored “From Industry to Generativity: The First 12 Years of the Association for Academic Psychiatry Master Educator Program,” which was published in the April 2016 issue of Academic Psychiatry.

The Carilion Department of Psychiatry, led by co-interim chairs TRACEY CRISS, M.D., and THOMAS MILAM, M.D., received a grant from the U.S. Department of Agriculture to provide telemedicine in 12 rural counties in southwest Virginia to help treat the opioid addiction epidemic.

Radiology

BIRAJ PATEL, M.D., a physician with Interventional Radiology, was selected to participate in the POSITIVE (PerfusOn Imaging Selection of Ischemic Stroke Patients for EndoVascular Therapy) multicenter trial. The principal goal of the trial is to identify, beyond current guidelines, patient populations who may benefit from endovascular stroke interventions.

Provider Excellence

The Carilion Clinic Provider Excellence Awards recognize providers who demonstrate dedication and exceptional care to patients, families, staff, and fellow providers. Recipients are nominated by their colleagues.

DONALD STEINWEG, M.D., a physician with Internal Medicine, received the Provider Excellence Award for Physicians.

TOMER PELLEG, D.O., a fellow with Pulmonary/Critical Care, received the Provider Excellence Award for Residents and Fellow. ASHLEY AMOS, a physician assistant with Emergency Medicine, and AMY OSTERMANN, a physician assistant with Neurosurgery, received the Provider Excellence Award for Advanced Clinical Practitioners.
PHYSICIAN, LEAD THYSELF

Increasingly, physicians are expected to lead, govern, and manage.

HUGH J. HAGAN III, M.D.

THOUGHTFUL, COMPETENT, AND RESPECTFUL leadership by physicians has never been more important than today. We are moving into a new era of health care delivery. The practice of medicine is rapidly changing and physicians will be held more and more accountable, not only for patient care and treatment outcomes, but also the “value” of services. If physicians do not take a leadership role in shaping the future of the delivery of medical care, that job will be assumed by others who have a less clear vision of what is good for patients and the practice of medicine.

Doctors have always been bright, motivated, and generally altruistic. They have also been independent minded, entrepreneurial, and often resistant to change. These somewhat conflicting traits can make it difficult to move an organization forward without good leadership.

Being physician leaders requires the vision to see where we as a medical community need to go and the ability to motivate others to reach those goals. As President Dwight Eisenhower once pointed out, “You don’t lead by hitting people over the head—that’s assault, not leadership.”

Certainly good physician leaders need knowledge of the organization within which they work. This requires a certain level of formal education, an understanding of business, finance, and politics; and an unusual degree of energy and perseverance. It also requires assuming the qualities required of a good leader.

To be effective, physician leaders require four main foundational elements: desire and stamina, competence in one’s professional field, the ability to be a team player and, perhaps most important, that particular collection of traits that fall under the heading of “good manners.”

First, desire and stamina go hand in hand. Assuming a leadership role in a medical community is emotionally and physically demanding. It takes a great deal of time and effort on top of the demands of practice to be a leader with all of its daily interruptions and surprises.

Second, to assume a leadership role in one’s professional community, the physician needs to be credible. An internist should be a compassionate and experienced clinician and diagnostician. In addition to these traits, a surgeon should be viewed as technically excellent.

Third, good leaders recognize that they cannot effectively reach meaningful goals all alone. They must do so as part of a team. Andrew Carnegie said, “No man will make a great leader who wants to do it all himself, or to get all the credit for doing it.”

Finally, physician leaders must have “good manners.” A person with good manners demonstrates conduct that conforms to a higher standard of propriety or correct behavior. Their characteristics include kindness, respect for others regardless of station in life, the ability to listen thoughtfully, and a reputation for honesty and fair treatment of others.

The old image of the autocratic, tyrannical physician leader has been replaced with a new image, one of an intelligent, organized, and respectful team member who motivates, guides, and works toward a shared goal cooperatively and without being heavy handed.

As we move forward, we must consider our roles as members of a growing medical community dedicated to excellent and responsible patient care and consider how we can individually exercise our abilities as leaders within this community to the benefit of all.

Hugh J. Hagan III, M.D., is chief of the hand and upper extremity section at the Carilion Clinic Institute for Orthopedics and Neurosciences. He holds faculty appointments at the Virginia Tech Carilion School of Medicine and the University of Virginia.

REMARkABLY, IT’S OUR VIEWS ON HEALTH CARE THAT ARE REALLY GETTING ATTENTION.

Our part of Virginia has always been known for scenic beauty. These days, people are looking to us for something even more inspiring: ideas to transform health care. That’s because Carilion Clinic’s physician-led, patient-first approach is making huge gains in quality of care, innovation and value. We’re changing everything. Wait until you see what’s next.

CarilionClinic.org/grow
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Carilion’s Chronic Pain Management Clinic blends traditional medicine with complementary and alternative treatments—such as pet therapy—to help patients manage pain without medication.