

## HISTORY

### **Development of the Virginia Tech Carilion School of Medicine**

After two years of study and planning, on January 3, 2007, Virginia Tech President Charles W. Steger and Carilion Clinic President and CEO Edward G. Murphy, along with Virginia governor Timothy M. Kaine, joined to announce the creation of a public-private partnership in the form of a new medical school and research institute, the Virginia Tech Carilion School of Medicine and Research Institute. In November, 2007, Carilion Clinic and Virginia Tech announced Cynda Ann Johnson, M.D., MBA, as the President and Founding Dean of the Virginia Tech Carilion School of Medicine (VTC SOM). In May 2008, the governor of Virginia formally signed legislation approving a capital projects bond package including \$59 million for Virginia Tech Carilion.

Collectively called Virginia Tech Carilion (VTC), the Virginia Tech Carilion School of Medicine and Research Institute leverages Virginia Tech's world-class strength in basic sciences, bioinformatics, and engineering with Carilion Clinic's highly experienced medical staff and rich history in medical education. Virginia Tech Carilion works to improve human health and quality of life by providing leadership in medical education and biomedical and clinical research.

The school welcomed its charter class in August 2010. Since then, four classes have graduated with a 100 percent placement in residency programs across the country. More than 160 alumni represent the school.

The school's innovative patient-centered curriculum attracts competitive prospective students. For the Class of 2020, the school received more than 4,600 applications for 42 spots; the pool was strong with nearly three quarters meeting the school's minimum academic requirements.

The curriculum is grounded in four value domains that are integrated throughout the four years of study: basic science, clinical science, research, and interprofessionalism. Students complete a longitudinal research project of publishable quality as a requirement to graduate, creating research-competent physicians who can translate research from the bench to the bedside and into the community. In 2015-16, VTC SOM students gave 89 presentations at regional and national research conferences and published 24 peer-reviewed articles related to their research projects. In addition, our students learn with allied health students from neighboring Jefferson College of Health Sciences, so they are prepared to work effectively alongside other health disciplines for better patient experiences and outcomes.

Research conducted at the Virginia Tech Carilion Research Institute (VTCRI) creates a bridge between basic science research at Virginia Tech and clinical expertise at Carilion Clinic and increases translational research opportunities for both partners. Research conducted by scientists at the institute is aimed at understanding the molecular basis for health and disease, and development of diagnostic tools, treatments, and therapies that will contribute to the prevention and solution of existing and emerging problems in contemporary medicine.

Virginia Tech Carilion is located near downtown Roanoke, Virginia, adjacent to Carilion Roanoke Memorial Hospital, in the developing Virginia Tech Carilion Health Sciences and Technology campus in the Roanoke Innovation Corridor. The Virginia Tech Carilion building is contemporary in style and partially constructed with Hokie Stone, the traditional stone utilized on the Virginia Tech campus in Blacksburg.

## **The Partners:** **Virginia Tech**

Virginia Tech was founded in 1872 as one of the land-grant institutions in the Commonwealth of Virginia. Today, the university fulfills that mission through a comprehensive academic portfolio, a commitment to economic growth and job creation, as well as a significant research portfolio.

Located in Blacksburg with satellite campuses and research sites across the state, Virginia Tech has eight colleges, with the Virginia Tech Carilion School of Medicine set to become the university's ninth college in 2018, offering 250 undergraduate and graduate degree programs to more than 32,000 students.

In the biosciences, Virginia Tech has outstanding programs in bioengineering, bioinformatics, bio-imaging, and veterinary medicine, and has joint degree programs and affiliation relationships with the Wake Forest University School of Medicine and Georgetown University. According to the National Science Foundation (NSF), Virginia Tech ranked 39<sup>th</sup> in the nation for research, the only Virginia institution in the top 50 of NSF rankings for research expenditures. The university is ranked among the top 25 public institutions.

The university is committed to research and creative scholarship in strategically important areas that draw upon established strengths and capture opportunities. Priorities are health, food, and nutrition; energy, materials, and environment; innovative technologies and complex systems, which includes nanotechnology, bioinformatics, biotechnology, high-performance computing, robotics, wireless technologies, and geographic information systems; and social and individual transformation, which includes economic, social, political, technological, environmental, and cultural change with applications in domestic and international aspects of community life.

## **Carilion Clinic**

Carilion Clinic is a healthcare organization with almost 700 physicians representing more than 70 specialties in a multi-specialty group practice and eight not-for-profit hospitals. Carilion Clinic specializes in patient-centered care, medical education, and clinical research, with a goal of providing the best possible health outcome and healthcare experience for each patient.

The core of the Carilion Clinic is an integrated, multi-specialty physician group which through its physician leadership has accountability for all aspects of Carilion's clinical outcomes, operations, and educational programs. As part of the multi-specialty physician group, 67 primary care physician practices stretch from far southwest Virginia through the Shenandoah Valley. Overall, Carilion provides services for the metropolitan Roanoke population of 250,000 and has a referral area of one million people. The Carilion network of hospitals is anchored by Carilion Roanoke Memorial Hospital, which includes a new children's hospital, an advanced heart treatment center and floors designed for women's care. In 2009, Carilion Clinic was ranked 18<sup>th</sup> of the country's most integrated health networks.

### *Services*

Among its services, Carilion provides a regional cancer center; cardiac catheterization and cardiac surgery programs, Level I Trauma Center; Level III neonatal intensive care unit, neuro-trauma, medical, cardiac, and cardiac surgery intensive care units, neonatal intensive care, perinatology, pediatric intensive care, and numerous ambulatory departments. The Carilion Medical Center has received the Gold Seal of Approval from the Joint Commission for stroke care and orthopedic services. Additionally, the Carilion nursing services are Magnet Status Hospital certified.

### *Medical Education*

Carilion has been involved in graduate medical education for over 60 years and is a member of the Council of Teaching Hospitals (COH). The residency programs' sponsoring name, Carilion Clinic – Virginia Tech Carilion School of Medicine Programs, reflects the affiliation with the Virginia Tech Carilion School of Medicine. Graduate training includes the following residency programs: dermatology, emergency medicine, family medicine, general hospital dentistry, internal medicine, obstetrics and gynecology, pediatrics, plastic surgery, podiatric medicine and surgery, psychiatry and behavioral medicine, general surgery, neurological surgery, and neurology. Fellowship training includes: emergency medical services, geriatric medicine (family medicine), hospice and palliative medicine, cardiovascular disease, interventional cardiology, gastroenterology, geriatric medicine (internal medicine), infectious disease, pulmonary/critical care medicine, adult reconstructive surgery, child and adolescent psychiatry, and geriatric psychiatry.

Carilion is involved in the education of nursing, physician assistant and allied health students through its Jefferson College of Health Sciences (JCHS), as well as through regional partners including Virginia Western Community College and Radford University.

#### *Information Technology*

Carilion Clinic has invested more than \$200 million in information technology to enhance quality, safety and efficiency of patient care over the last decade and in 2010 was named one of the “100 Most Wired and Wireless” health systems (*Hospitals & Health Networks*) in the country. In 2007 Carilion Clinic began implementation of a \$68 million integrated electronic medical record (EMR) which ties together clinical data for all Carilion Clinic hospitals and physician practices. The EMR allows physicians to immediately access all information about a patient's current and past medical history, along with test and lab results.

#### *Research*

Carilion Clinic continues to grow in research. In particular, clinical trials are a focus area, connecting physicians and patient populations with bench researchers. Current clinical studies include areas like cardiology, diabetes and obesity, pediatric oncology, wound care, and more. Carilion Clinic physicians, who are often VTCSOM faculty, are key partners to serve as research mentors for VTCSOM students, who are required to do a significant research project during their four years of study. Physicians also partner with researchers at the Virginia Tech Carilion Research Institute.