

Resolution to Approve the Virginia Tech Carilion School of Medicine Doctor of Medicine (MD) Degree Program

WHEREAS, since 2007, Virginia Tech and Carilion Clinic have benefited from a partnership that has resulted in successfully launching the Virginia Tech Carilion Research Institute and the Virginia Tech Carilion School of Medicine, and

WHEREAS, the university has a strong strategic interest in continuing to advance research and education in biomedicine, neuroscience, infectious disease, cardiovascular sciences, metabolism and obesity, biomaterials and body-device interfaces; and

WHEREAS, the Virginia Tech Carilion Research Institute continues to exceed its goals and surpassed \$100M in total research funding awarded; and

WHEREAS, the Virginia Tech Carilion School of Medicine continues to exceed its goals as an accredited independent medical school; and

WHEREAS, the VTCSOM curriculum is innovative in its integration of research into the program of study resulting in the Doctor of Medicine (MD) degree including 126 on-going research projects with 73 VTCSOM faculty mentors; and

WHEREAS, 100% of the physicians who have completed their education at the VTCSOM pass the US Medical Licensing Exam Step 3, and the school has a 100% residency matching rate for each graduating class; and

WHEREAS, the school and the Virginia Tech and Carilion partners have agreed to integrate the school into Virginia Tech as a college; and

WHEREAS, Virginia Tech will confer the MD degree upon the integration of the school into the university; and

WHEREAS, the MD curriculum was developed and approved by the VTCSOM faculty, under the governance oversight of the VTCSOM's Medical Curriculum Committee that represents the faculty and the 11 departments that comprise the VTCSOM; and

WHEREAS, the MD curriculum continues to be taught and delivered solely by VTCSOM faculty and, thus, does not require resources from other colleges; and

WHEREAS, the VTCSOM including its MD curriculum is accredited by the Liaison Committee on Medical Education (LCME) which is jointly sponsored by the Association of American Medical Colleges (AAMC) and the American Medical Association (AMA); and

WHEREAS, the VTCSOM is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), the same body that accredits Virginia Tech; and

WHEREAS, the Virginia Tech faculty along with the students and staff have expressed their affirmation of the desire to integrate the VTCSOM and the MD degree program into the university as demonstrated by the approval of University Council on March 12, 2018; and

WHEREAS, the Bylaws of the Virginia Tech Board of Visitors, Article I, Section 6a, stipulate that the Executive Committee of the Board in the interim between meetings of the Board has full power to take actions on behalf of the Board and that all such actions taken by the Executive Committee are subject to ratification by the full Board at its next meeting;

NOW, THEREFORE BE IT RESOLVED, that the Executive Committee of the Board of Visitors of Virginia Polytechnic Institute and State University affirms and approves the integration of the VTCSOM as a college within Virginia Tech; and

BE IT FURTHER RESOLVED, that the Executive Committee of the Board of Visitors approves the integration of the VTCSOM's Doctor of Medicine degree and existing curriculum into the university's graduate offerings effective upon the integration of the Virginia Tech Carilion School of Medicine into Virginia Tech.

Recommendation:

That the resolution to approve the Virginia Tech Carilion School of Medicine Doctor of Medicine degree and existing curriculum be approved.

March 13, 2018

VTCSOM Medical Doctor (MD) Degree Curriculum

The Virginia Tech Carilion School of Medicine (VTCSOM) offers a program of study leading to the MD degree (MD). After the VTCSOM becomes an academic unit of Virginia Tech, the MD will be awarded by Virginia Tech.

The curriculum for the VTCSOM Doctor of Medicine degree (MD) is a 169-week, four-year program. The curriculum is designed around four “value domains” that shape course delivery and instruction. The four value domains are: basic science, clinical science, research, and interprofessionalism.

In addition to the four value domains, the VTCSOM’s curriculum places patient care at the center of all learning. This approach trains students to be physicians who place patients at the center of medical practice. The VTCSOM’s pedagogical approach is active and reduces passive learning, and uses patient case-studies in facilitator-guided, small-group discussions. As life-long learners, the medical students at the VTCSOM acquire, integrate, and apply knowledge in pedagogically active settings that include peer teaching, communication, and professionalism.

The VTCSOM curriculum is divided into two phases with Years 1 and 2 referred to as Phase I and Years 3 and 4 referred to as Phase II. During Phase I, the curriculum is separated into units of study referred to as blocks. Each block in Year 1 lasts eight weeks and each block in Year 2 lasts six weeks. The four value domains form the cornerstone of student instruction in blocks, rotations, and clinical practice. The curriculum will remain unchanged upon integration of the school into the university. See Appendix B for a sample plan of study.

VTCSOM Doctor of Medicine Curriculum Value Domains: basic science, clinical science, research, and interprofessionalism		
Phase I	Year 1	4, 8-week blocks of study
	Year 2	4, 6-week blocks of study
Phase II	Year 3 Carilion Clinic clerkships/clinical practice	Six-week rotations: internal medicine, surgery, family and community medicine, pediatrics, psychiatry, and OB/GYN. Two-week rotations: radiology, neurology Four-week block: research Electives
	Year 4 Carilion Clinic clerkships/clinical practice	Four-week: emergency medicine Three, two-week electives: medical subspecialty, surgical subspecialty, ICU/critical care 18 to 26 weeks additional electives Two-week “Transition to Residency I” requirement Time for residency program interviews Two-week research rotation

VTCSOM -- Sample Plan of Study

PHASE I - Year 1 Block Schedule: Normal Structure and Function*Block I: August - October (8 weeks)*

Functional Biology of Cells and Tissues: Molecules, Genes, Chromosomes, Proteins, Cells, Tissues, Metabolism, Transcription, Translation, Early Development, Pharmacodynamics, Pharmacokinetics

Interviewing and Professionalism: Interviewing Skills, Relationships with Colleagues, Medical Student Professionalism, Medicine as a Profession, Physician Privileges and Responsibilities, Medical Humanities

Fundamentals and Foundations of Research: Scientific Method, Thinking like a Researcher, Quantitative / Quantitative Research, Basic Clinical Translational Research Principles, Hypothesis Generation, Introduction to Medical Literature, "Research Live"- Intro

Interprofessional Healthcare: Introduction to Team Building Concepts, Interpersonal Relationships and Development of Camaraderie and Partnerships

Block II: October - December (8 weeks)

Human Body I: Immunology, Cardiovascular, Respiratory, Musculoskeletal, Autonomic Nervous System, Nutrition

Physical Exam and Human Life Cycle I: Major Body Regions, Cultural Diversity in the Medical Interview, Vital Signs, Heart and Lungs, Infancy and Early Childhood Development, Medical Humanities

Research Tools: Biostatistics, Epidemiology, Keys to Successful Collaboration, "Research Live" - Block Topics, Research Rotations

Interprofessional Healthcare: Theoretical Foundations and Models of Healthcare, Public Health, Population Health, Normal Structure and Function of Society, Experiential Team Learning (e.g., following a family)

Block III: January - March (8 weeks)

Human Body II: GI Tract, Liver & Biliary, Renal, Endocrine, Reproduction, Nutrition

Physical Exam and Human Life Cycle II: Abdominal, Male and Female Genitourinary Exams, Sexuality, Difficult Patient Interview - Sensitive Topics, Adolescent to Adult Development, Medical Humanities

Research Application: Biostatistics, Epidemiology, Research Design and Methods, Law and Medicine, Regulatory Principles, Research Rotations, "Research Live" - Block Topics

Interprofessional Healthcare: Healthcare Professional Roles, Conflict Resolution, Negotiations, Leadership, Clinical Skills Team Training (simulation), Experiential Team Learning, Patient Safety, Quality Improvement

Block IV: March - May (8 weeks)

Biology of the Nervous System: Central Nervous System, Peripheral Nervous System, Special Sensory Structures, Nutrition

Neurological Exam - Biopsychosocial Aspects: Aging, Death and Dying, Palliative Care, Lifestyle Modification and Stages of Change, Medical Humanities

Research Outcomes: Manuscript Preparation, Journal Selection, Manuscript Revision, Grant Writing, Grant Review Process (Study Sections), Research Mentor Selection Deadline, Project Identification Deadline, "Research Live" - Block Topics

Interprofessional Healthcare: Clinical Skills Team Training (simulation), Introduction Health Delivery Systems, Experiential Team Learning, Patient Safety, Quality Improvement

PHASE I - Year 2 Block Schedule - Abnormal Structure and Function

Block V: July - August (6 weeks)

Fundamentals of Pathobiology: Cells and Tissues, Necrosis, Neoplasia, Inflammation, Genetic Disorders, Immunological Diseases, Infection, Microbiology, Virology, Pharmacology, Therapeutics

Communicating with Patients and Families: Enhancement of Interviewing Skills, Fundamentals of Case Presentations, Psychosocial Aspects of Disease, Domestic Violence, Ambulatory Care Experience

Research Project: Individual Student Research Project (hypothesis generation / specific aim), Ethics, "Research Live" - Block Topics

Interprofessional Healthcare: Global Health Issues, Team Training in Disaster Preparedness, Patient Safety, Quality Improvement

Block VI: September - October (6 weeks)

Pathobiology of the Human Body I: Hematology, Bleeding disorders, White Cell Disorders, Vascular Diseases, Heart, Pulmonary, ENT, Lymph Nodes and Spleen, Microbiology, Virology, Pharmacology, Therapeutics, Nutrition

The Physician & Society and Clinical Skills: H & P and Psychosocial Aspects of CV and Pulmonary Diseases, Stress management for Physicians, Medical Marriages, Lifestyle Balance, Changing Healthcare Systems, Managed Care, Medical Legal Issues, Ambulatory Ca

Research Project: Individual Student Research Project (research design, tests), IRB, Ethics, "Research Live" - Block Topics

Interprofessional Healthcare: Case Studies in Acute and Chronic Disease Management, Patient Safety, Quality Improvement

Block VII: November - December (6 weeks)

Pathobiology of the Human Body II: GI Tract, Liver, Pancreas, Renal, Male and Female GU, Breast, Microbiology, Virology, Pharmacology, Therapeutics, Nutrition

Health Promotion, Disease Prevention and Clinical Skills: H & P and Psychosocial Aspects of GI, Renal, and Urogenital Diseases, Ambulatory Care Experience, Writing Orders and Prescriptions

Research Project: Individual Student Research Project (anticipated outcomes and preliminary data), IRB, Ethics, "Research Live" - Block Topics

Interprofessional Healthcare: Case Studies in Acute and Chronic Disease Management Experiential Team Learning

Block VIII: January - February (6 weeks)

Pathobiology of the Human Body III: Endocrine, Skeletal and Soft Tissues, Skin, Environmental and Nutritional Diseases, Central and Peripheral Nervous Systems, Nutrition

Psychobiology and Substance Abuse: H & P and Psychosocial Aspects of Neurological Diseases, Clinical psychiatric syndromes and their underlying neurobiological dysfunctions, Ambulatory Care Experience,

Research Project: Individual Student Research Project (proposal in grant format), "Research Live" - Block Topics

Interprofessional Healthcare: Health Policy Analysis, Case Studies in Acute and Chronic Disease Management, Experiential Team Learning

The basic science curriculum taught in the first two years of the medical school's curriculum prepares students to enter into the more formal clinical phase in their third and fourth years.

PHASE II - Year 3 is spent at Carilion Medical Center with clinical faculty who are largely members of Carilion Clinic. There, students complete a year of required clerkships consisting of six-week rotations in the core clinical disciplines (internal medicine, surgery, family and community medicine, pediatrics, psychiatry, and OB/GYN) and two-week rotations in radiology and neurology. Research continues to be integrated into the clerkship year with a dedicated four-week block. In addition, there are four weeks available for electives in Year 3.

PHASE II - Year 4, students complete a four-week required clinical experience in Emergency Medicine as well as electives that must include one medical subspecialty, one surgical subspecialty, and one ICU/critical care rotation, each for two weeks. Students have 18 to 26 weeks of additional elective time, a two-week “Transition to Residency I” requirement, and additional flexible time for interviewing for residency programs and vacation. Finally, there is a required two-week research rotation, which can be lengthened for students whose research requires additional time.