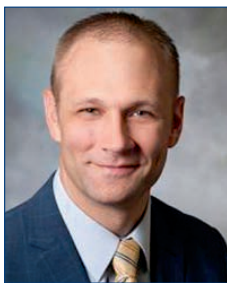


# The Role of Anesthesiology Assistants in the Anesthesiology Patient Care Team

by Matthew Pinegar, MD & Ty Townsend, CAA



**Anesthesiology Assistants work collaboratively with physician anesthesiologists to provide the very highest in patient care in the myriad of clinical care arenas.**



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## Abstract

**The profession of Anesthesiology Assistant has emerged in the past several decades as a vital component member to the anesthesiology care team model of care. Anesthesiology Assistants work collaboratively with physician anesthesiologists to provide the very highest in patient care in the myriad of clinical care arenas that the specialty is asked to be involved in, particularly as anesthesiology services expand outside of the traditional OR setting.**

## Introduction

The year 2018 marks a significant milestone for the School of Medicine here at the University of Missouri Kansas City (UMKC). Ten years ago, the university welcomed its inaugural class of Master of Science in Anesthesia students, to begin training to become anesthesiologist assistants (AA). The program has grown considerably since then, and is heartened by the ever-increasing quality of its graduates. It is possible that many health care physicians are unfamiliar with the term anesthesiologist assistant or the role that they play in the perioperative arena. If so, they

are not alone. As an anesthesiologist and an anesthesiology assistant, we find ourselves elucidating their roles frequently to patients and healthcare workers alike. Despite not being universally known and recognized, anesthesiologist assistants play an integral role in the perioperative care of patients in the Saint Luke's healthcare system and in the training of future UMKC graduates. At UMKC and in the Saint Luke's system our experience with AAs has been overwhelmingly positive, and as the program continues to grow we expect that their presence will continue to grow in the state of Missouri. We are pleased to be provided this opportunity to expound about the profession and our training program at UMKC.

## Genesis of Anesthesiology Assistant Programs

The role of the anesthesiologist assistant was first conceived by three chairmen of academic anesthesiology departments, Joachim Gravenstein, MD at the University of Florida, John Steinhaus, MD, at Emory University, and Perry Volpitto, MD at the Medical College of Georgia. As early as the 1960s they became concerned by a shortage of anesthesiologists and collectively sought a solution to the problem. They made a detailed

study of the skill set required for anesthesia delivery and of the training methods then in place for both anesthesiologists and nurse anesthetists. The result of their work was the creation of a new entity for anesthesia delivery – the anesthesiologist assistant. This entity, beginning with an undergraduate science background, focused on graduate level clinical training and culminated in a master’s degree level anesthesia provider who practiced under the direction of a physician anesthesiologist. Some parallels can be drawn with physician assistants, a term which many physicians may be more familiar with. Both are advanced practice clinicians with master’s degree level training. However, the training and certification processes are distinct, as are their scopes of practice.

Emory University and Case Western Reserve University were the first two training programs for AAs, starting in 1969 and 1970, respectively. There was not a third program until South University in Savannah, Georgia started in 2004. In 2008 UMKC became the fifth training program in the country, and the first one located west of the Mississippi river. Currently, there are nine programs in existence with 12 training locations:

- South University (Savannah, GA)
- Emory University (Atlanta, GA)
- University of Colorado (Denver, CO)
- Quinnipiac University (North Haven, CT)
- University of Missouri (Kansas City, MO)
- Nova Southeastern University (Tampa, FL; Fort Lauderdale, FL)
- Case Western Reserve University (Cleveland, OH; Houston, TX; Washington, DC)
- University of Indiana
- Medical College of Wisconsin (Milwaukee, WI)

To understand the growth of the UMKC program it helps to understand that AAs have only been practicing in Missouri for about 15 years. In 2003, Governor Bob Holden signed House Bill 390 into law, allowing for the licensure and practice of AAs throughout the state. UMKC saw the growing need for anesthesia care team providers and looked to address the shortfall by training them locally. With only three AAs in Kansas City, and a total of five in all of Missouri, UMKC’s program began with a class of

four students. Since then the program has graduated 79 students and anticipates 12-16 graduates currently yearly and in the years to come.

### **Educational Requirements for Anesthesiology Assistants**

Today’s applicants to the UMKC program generally present with a background of science-related studies. A baccalaureate degree from an accredited college or university in the US or Canada is required. While any degree is accepted, all applicants will need to have completed the core requirements for application to most US medical schools. This includes taking the Medical College Aptitude Test (MCAT). All applicants, regardless of undergraduate degree will have successfully completed undergraduate courses in Biology, Chemistry, Biochemistry, Organic Chemistry, Physics, Calculus and Human Anatomy and Physiology. While not required, completion of Advanced Statistics is encouraged. A solid understanding of the profession is also a prerequisite and all applicants are required to have observed or shadowed practicing AAs in an operating room environment.

All anesthesiologist assistant training programs, UMKC’s included, are accredited by the Commission of Accreditation for Allied Health Education Programs (CAAHEP). CAAHEP is the accrediting body for over 2200 programs in over 23 different allied health program types, including paramedic, surgical assistant, respiratory therapist and perfusionist training programs. The American Society of Anesthesiologists is a member of CAAHEP and participates in the accreditation process. Among the standards for accreditation, an anesthesiology assistant program must be supported by the anesthesiology department of a medical school that has been accredited by the Liaison Committee on Medical Education, and must meet the requirements that the Accreditation Council for Graduate Medical Education (ACGME) mandates for sponsorship of an anesthesiology residency program. The curriculum requires at least two full academic years. UMKC’s program currently takes 28 months to complete and all graduates receive a Master’s degree.

### Prerequisites for Admissions to UMKC AA Program

- Applicants for admission to the MSA program must have earned, or will soon earn, a baccalaureate degree or higher from a regionally-accredited U.S. or Canadian college/university.
- It is recommended that applicants earn a cumulative GPA of 3.0 or higher.
- Applicants must complete the following pre-requisite courses prior to matriculation, with a pre-requisite GPA of 3.0 or higher. It is required that applicants receive a grade of C or better in pre-requisite courses:
  - Two semesters of biology with lab
  - Two semesters of general chemistry with lab
  - One semester of organic chemistry I with lab
  - One semester of organic chemistry II with lab
  - Two semesters of physics (sophomore level) with lab
  - One semester of biochemistry (upper-level)\*
  - One semester of human anatomy
  - One semester of physiology\*
    - One semester of human anatomy and physiology (4+ credit hour course) may be accepted for one semester of human anatomy and one semester of physiology.
  - Two semesters of mathematics (calculus, pre-calculus, statistics, college algebra or trigonometry)
  - One course in medical terminology

*\*Those courses marked with an asterisk must have been completed within five years of the application deadline.*

- The MSA program will allow a student to complete any missing required courses after the application deadline. Any offers of admission will be contingent upon successful completion of the required courses by the end of the fall semester before matriculation in January. Once enrolled in the course(s), a student must submit, prior to the interview, a transcript to the School of Medicine Office of Admissions showing the course(s) in progress. A final transcript with a final grade in the course(s) must be submitted upon completion of the course(s).
- Advanced Placement or International Baccalaureate credit is accepted for pre-requisite courses; however grades earned in such courses will not be used when calculating the pre-requisite GPA.
- Due to the knowledge base of each semester building on the knowledge base from the previous semester, it is vital that all students in the UMKC Master of Science in Anesthesia program complete the courses required within the curriculum in the prescribed sequence. Advanced placement, transfer of credit from other educational programs, or substitution of coursework based on prior academic or clinical experience will not be accepted in place of the prescribed courses in the MSA program curriculum.

### MCAT Score

- The Medical College Admissions Test is required.
- MCAT scores must have been earned within three years of the application deadline. The latest MCAT score accepted for the Final Application deadline is the May MCAT.
- Currently, there is no minimum score required for admission. The recommended minimum on the MCAT taken in 2014 or before is a 22 composite score. The recommended minimum on the 2015 MCAT is a 494 composite score.
- When the MCAT has been taken more than once, component scores from different exams may not be combined. The highest MCAT score earned by an applicant will be used in the application.
- All applicants must submit official MCAT scores to CASAA after self-reporting their MCAT scores and entering their AAMC ID number into the CASAA application. Applicants should contact AAMC to request their official scores to be released to CASAA following the self-reporting of their score and identification information.

### Shadowing Experience

- Experience shadowing an anesthesia provider (anesthesiologist, Anesthesiologist Assistant or CRNA) is required prior to the application deadline.
- A minimum of ten (10) hours of shadowing experience is required.

Before that occurs, each AA student must complete 2000 hours of clinical training. AA students will be trained in every facet of anesthesia delivery.

Procedures:

- Airway management
- Neuraxial anesthesia
- Regional anesthesia
- Arterial line placement
- Central line placement

Surgical types:

- Cardiothoracic
- ENT
- Orthopedic
- General
- Urologic
- Obstetrics/Gynecology
- Transplant

Following graduation from an accredited program, AAs must maintain certification in order to practice. The certification exam is administered by the National Commission for Certification of Anesthesiologist Assistants (NCCAA), an organization comprised of representatives from the American Society of Anesthesiologists (ASA) and the American Academy of Anesthesiologist Assistants (AAAA). Certified AAs are permitted to use the designation CAA to indicate that they are currently certified. AAs are required to demonstrate 40 hours of Continuing Medical Education every two years for recertification. AA certification is time limited to six years. Thus, AAs must take and pass a Continued Demonstration of Qualifications (CDQ) exam in that time period. Of note, AAs were the first of the anesthesia related professions to require a written exam as a condition of recertification.

### Scope of Practice

Once certified, AAs may begin to practice. An AA practices as an advanced practice clinician under the medical direction of a physician specifically trained in the delivery of anesthesia – an anesthesiologist. This is part of the profession’s commitment to the ASA’s recommendation that an anesthesiologist be involved in the perioperative care of every patient to ensure safety and quality of care. At Saint Luke’s

Hospital, the scope of practice of the anesthetists is the same, whether the anesthetist is trained through the AA or CRNA pathway. AAs support the practice of the physician-led anesthesia care team model. This model permits the medical direction by a single anesthesiologist of up to 4 AAs and/or nurse anesthetists simultaneously. At Saint Luke’s Hospital of Kansas City, a Becker’s Hospital Review top 100 hospital in the country and regional leader in quality care (one of only 15 academic medical center hospitals in the country with a CMS 5 star rating), all anesthetics are practiced within this model of medical direction.

UMKC is proud of the accomplishments of the AA training program since its humble beginnings 10 years ago. Since then, the number of providers in the state has gone from 5 to 163 active Missouri licensed AAs. Since 2005 UMKC has graduated 79 from its MSA program, 63 of which accepted clinical positions in Missouri immediately following graduation. UMKC’s program boasts a 100% pass rate on the certifying exam as well as a 100% job placement upon graduation. At Saint Luke’s Hospital of Kansas City we currently employ 18 AAs full time, 15 of whom are graduates of the UMKC program. They help to provide compassionate, consistent high quality anesthesiology care to an untold number of patients here in Missouri, and elsewhere in the country.

If you haven’t seen an Anesthesiology Assistant practicing with your physician anesthesiology colleagues in your health care facility in Missouri, keep an eye out for them - they will be coming to you soon!

### Sources

UMKC School of Medicine  
<http://med.umkc.edu/msa/>

Commission on the Accreditation of Allied Health Education Programs  
<https://www.caahep.org/About-CAAHEP/Committees-on-Accreditation/Anesthesiologist-Assistant.aspx>

American Academy of Anesthesiologist Assistants  
<https://www.anesthetist.org>

American Society of Anesthesiologist  
<http://www.asahq.org>

Missouri General Assembly  
<http://www.moga.mo.gov>

National Commission for Certification of Anesthesiologist Assistants  
<http://www.aa-nccaa.org>

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