

Chapter 1 : Pulmonary and Critical Care Medicine Fellowship

Specialists in anaesthesia, analgesia and critical care contribute their expertise to a wide range of clinical cases, from minor surgical procedures through to the most challenging and complex operations, in the emergency situation and in the long term care of the critically ill.

Information about our straight critical care pathway can be found here. Learn more about the Pulmonary fellowship in a short video: Hospital Training Locations The strength of the Pulmonary, Allergy and Critical Care clinical program lies in the combined facilities of the pulmonary services of our five hospitals, which provide exposure to a broad spectrum of pulmonary and critical care disorders in a wide variety of populations. Its staff, limited to full-time faculty of the Emory School of Medicine, care for patients referred from all over the United States and throughout the world. More than 18, patients are admitted annually. The hospital is the largest transplant center in Georgia and one of the largest and most diversified in the Southeast, offering heart, heart-lung, kidney, liver, pancreas-kidney, cornea, bone, and bone marrow transplants. Nearly 30, inpatients and more than , outpatients are treated here each year. The Atlanta VA Medical Center provides a full range of patient care services complete with state-of-the-art technology, education, and research. Today, the bed, acute-care facility is recognized as one of the top specialty-referral hospitals in the Southeast. The first year of training is traditionally a busy clinical year. Rotations during this year include: Because there is no separate cardiac care unit at Grady, this rotation includes that care of patients with acute coronary syndromes, in addition to more traditional MICU diagnoses. Time permitting, fellows on this rotation also participate in pulmonary consults and associated procedures generally bronchoscopy and thoracentesis. Medical Intensive Care Unit at Emory University Hospital Midtown While fellows on this rotation manage a traditional MICU run by residents, one of the unique aspects of this experience is the opportunity to work with a team of advanced practice providers Physicians Assistants and Nurse Practitioners managing a separate team of patients. As time allows, rotating fellows also participate in affiliated clinics managing outpatients with these disease states. Pulmonary consultation at Grady Memorial Hospital This month-long rotation allows fellows to gain experience in providing inpatient consultation of patients with pulmonary disease. This is a busy procedural experience as well, as many of these patients require diagnostic bronchoscopy or thoracentesis during their evaluation. Pulmonary consultation at Emory St. This service also covers the "code met" experience, which leads to a robust intubation experience during the rotation. Radiology First-year fellows will spend two weeks with our outstanding thoracic radiologists, to gain experience in the interpretation of chest radiographs and CT scans. Sleep medicine Fellows will have a two-week experience in sleep medicine. This will predominantly consist of outpatient clinic, but there will be some experience with interpretation of home sleep apnea tests, polysomnograms, and CPAP adherence downloads as well. Continuity Clinics Beginning in our first year, and continuing throughout the three-year program, fellows will administer their own bi-weekly continuity clinics at Grady Memorial Hospital and the Veterans Administration Medical Center. Some minor experience with stenting and endobronchial laser use is also common. Surgical intensive care at EUH - This twenty-bed unit admits both general and specialty surgical patients. The multidisciplinary team consists of supervising faculty from the Departments of Surgery and Emergency Medicine, as well as residents from anesthesia, surgery and emergency medicine. Nighttime intensivist in the Grady Medical ICU - Fellows will spend one month as the senior in-house physician supervising residents and interns at night as they admit and manage critically-ill patients. In addition to a number of other elective experiences, fellows enrolling on our Clinical Educator Track will identify a specific subspecialty within pulmonary or critical care medicine on which to focus; recent choices have included interstitial lung disease, pulmonary hypertension, transplantation and quality improvement in critical care. During the latter two years of training, fellows will dedicate at least eight months of time in rotations related to this specific domain, consisting of both clinical months and protected time for scholarly projects including

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research abstracts, review articles and book chapters. Each specific subspecialty has its own list of required rotations; as an example, the list of required experiences for fellows interested in focusing on pulmonary vascular disease is provided below: Fellows who opt to enroll on this pathway will complete their clinical training during the first half of the second year with two months of elective time, in addition to the following required experiences: This grant funds their research experiences, travel to relevant medical meetings, and associated coursework; some fellows on this pathway choose to pursue a full Masters degree through the Rollins School of Public Health at Emory University. Over the course of the next months, fellows will engage in research under the supervision of one or more of our experienced mentors. Although it is strongly advised that fellows choose a member of our Division as their primary mentor, a fellow may choose to work with a mentor from outside the Division, particularly if that mentor has a collaborative relationship already established with one or more of our faculty. In addition to developing original research projects under the guidance of their mentor, fellows learn how to analyze data, prepare and deliver scientific presentations and write and publish original scientific manuscripts. Successful completion of this track requires fellows to present their scholarly work to both internal and external audiences. A partial list of faculty mentors within the Division can be found [here](#). Note that the primary mentor does not need to be the person with whom the fellow plans to do research or work clinically though this is preferable. The most important aspects of identifying a primary mentor are the personal relationship with the mentee and a track record of success with prior fellows.

Chapter 2 : The American Board of Anesthesiology - Critical Care Medicine Certification

In addition, each year the Department will sponsor the residents in the A/CC track to the Society of Critical Care Medicine (SCCM) Annual Congress or the Society of Critical Care Anesthesiologists (SOCCA) Annual Meeting.

The ever expanding role of Anesthesiologists in academic medicine, as well as the private sector, has opened a variety of interests within the broader field of Critical Care. We strongly encourage applications by candidates seeking dual certification in Critical Care and Cardiac Anesthesia. Visit our division website Neuroanesthesia The Neuroscience in Anesthesiology and Critical Care Program NACCP offers a variety of opportunities for those interested in an advanced experience in neuroanesthesia, neurocritical care, and neuroscience research. We accept no more than a small number of candidates each year and thus provide a highly individualized program modifiable to meet a variety of needs. The typical fellow will spend 12 months with the time divided between clinical work and clinical research. Our aim is to train physicians who will be fully prepared to become exemplary attending neuroanesthesiologists in either clinical or academic practice. The case range is extensive with a predominance of patients requiring intracranial surgery, including for intracranial aneurysms approximately 80 patients per year. The number of patients requiring craniotomies for tumors and other problems is usually on the order five to ten per week. We also have a growing seizure surgery practice with about one to two patients per week, and one of our neurosurgeons does carotid endarterectomies about 40 per year. With surgery for the spinal cord and column, shunts and other miscellaneous procedures, the service provides anesthesia for an average of 15 to 20 neurosurgical cases each week. We use a variety of anesthetic techniques including both general and regional anesthesia for carotid endarterectomies, inhalational and intravenous approaches for intracranial processes and both general and conscious sedation for seizure surgery. Presently we perform about one awake craniotomy per week. Portions of the fellowship can be spent on the neurophysiological monitoring service. We have close working relationships with experienced, clinical neurophysiologists and can provide experience with intraoperative electroencephalographic monitoring standard as well as processed and somatosensory and motor evoked potential monitoring. The degree of monitoring used on some patients is extensive and may include monitoring cranial nerves as well as standard somatosensory sites. Motor monitoring is done using magnetic stimulators as well as direct cortical or spinal cord stimulation. Neuroanesthesia faculty at Penn work closely with the neurosurgeons to deliver neurocritical care. This improves the continuum of acute care for these patients, fosters collaborative clinical research projects, and provides an additional opportunity for fellows to further augment their clinical experience. The Neuroanesthesia experience can be integrated into a two-year neuroICU fellowship which can lead to certification in Neurocritical care. They take care of children with the full spectrum of pediatric neurosurgical problems. Rotations in pediatric neuroanesthesia can be arranged to be a component of the fellowship. Accordingly, fellows tend to work with second and third year anesthesia residents and have progressively increasing case supervision and teaching responsibility as their experience grows. Fellows also play a significant role in our didactic program and have guided experience in lecture preparation and delivery. A key feature of the training program is a controlled clinical obligation so that virtually all of our trainees have time for clinical or laboratory research. Current research interests include improved techniques for patient cooling and rewarming during neurosurgery, evaluation of origins of postoperative cognitive dysfunction, pathophysiology of traumatic brain injury, and the measurement of local blood flow and its correlation with local brain electrical activity. Our department is unusual in the extent of externally supported funding supporting research activities of clinically active anesthesiologists. A summary of this work can be found in the research training section. Notably, we offer the option to participate in our NIH training grant program. Most of our fellows have had at least one publication as a result of their research activities, and many have had more than one. The Penn neuroanesthesia program has a many-decade tradition of excellence in clinical care, education and research. Two of our former trainees head Divisions of Neuroanesthesia at major medical

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centers. Some have gone into private practice and have leadership positions in their practice. In general, fellow candidates will have completed an anesthesia residency accredited by the Accreditation Council for Graduate Medical Education. For further information, please contact:

Chapter 3 : 4th Year Medical Student Rotation: Anesthesia | BIDMC

First Year (CA-1) The first year of clinical anesthesia begins with both clinical and didactic training. During the first month, residents spend two weeks each with two faculty tutors for a full month of one-to-one tutoring.

Definitely and we are very desirable to these programs. How long is a critical care fellowship? All certification-track fellowships are two years in length. The advantages of a two-year fellowship are that it: Will I be able to get a critical care job after fellowship? Many emergency medicine physicians are currently employed as intensivists in both private and teaching hospitals, some even as medical directors. In addition, the field of critical care in general is facing a time of tremendous growth. The Leapfrog Group, a consortium of Fortune companies and healthcare consumers, has set three healthcare priorities for improvement in quality care, one of which is that all intensive care units be staffed by trained intensivists. In fact, the Leapfrog Group considers emergency medicine physicians with critical care training intensivists. With these powerful demographic and economic pressures, we anticipate a promising job market for critical care physicians, regardless of their base specialty. Will emergency medicine training prepare me well enough to be a strong critical care fellow? Remember that nobody comes to a fellowship with nothing to learn. How will a critical care fellowship enhance my career as an emergency physician? Emergency toxicologists, pediatric emergency specialists, sports medicine emergency specialists, and hyperbaric emergency specialists exist, thrive, and add to the strength and breadth of emergency medicine. There is certainly room for emergency critical care specialists! A recent NEJM paper demonstrated the importance of aggressive, early care for critically ill patients in the emergency department. By training in critical care, you will not only enhance your ability to manage critically ill patients, but will also be well positioned to coordinate the expanding role of emergency medicine in the care of the critically ill. With the increasing problems of overcrowding and long emergency department times, sicker patients will be in the emergency department and under your direct supervision, whether we feel prepared to care for them or not. Another possibility is the staffing of observation units by physicians with training in both emergency medicine and critical care. The more cerebral and controlled environment of the unit can be an interesting counter-balance to the frenzied and chaotic pace of the emergency department. Many of us find the combination of these two environments to be tremendously rewarding. Which programs do you recommend? These are the fellowships which I recommend for ED residents because they actively want as opposed to begrudgingly accept ED residents:

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Chapter 4 : 3rd Year Medical Student Surgery Clerkship: Perioperative Medicine Selective | BIDMC

Discusses minor surgical procedures as well as complex operations, in the emergency situation and in the long term care of the critically ill.

Back to Top Cardiothoracic Rotation The cardiothoracic anesthesiology core rotation is based primarily at Hahnemann University Hospital. This site offers a wide variety of cardiac surgical cases ranging in surgical technique on- and off-pump coronary revascularization and level of acuity. Examples range from minimally invasive valvular repair Heartport technology to insertion of right and left ventricular assist devices. Hahnemann was one of five centers in the United States to implant a self-contained total artificial heart for a patient in chronic heart failure. The core cardiothoracic rotation consists of two months during the CA-2 year dedicated to caring for these patients with ischemic, valvular, and congenital heart disease. The application of cardiovascular physiology and pharmacology to hemodynamics and the sequelae of cardiopulmonary bypass are the major didactic goals. Clinical goals include proficiency in insertion of central venous and arterial catheters, regional anesthesia for cardiac surgery, and an introduction to transesophageal echocardiography TEE. Up to six months of additional elective training is available in the CA-3 year with one month dedicated to image acquisition and interpretation of TEE. The advanced training allows opportunities for greater autonomy and advanced techniques applicable to the CT patient. The overall emphasis then becomes the integration and interpretation of various sources of physiologic monitoring into well-articulated and executed therapeutic interventions. These patients include trauma, general surgery, neurosurgery, orthopedic surgery, vascular surgery, gynecologic and ENT patients. The mission of the SICU is excellence in patient care, education and research. Daily rounds are made with an anesthesiology or surgical critical care attending where patient care and educational issues are discussed. Patient care responsibilities include all aspects of the critical care patient. Residents are expected to perform all invasive monitoring procedures except intracranial line placement including placement of central lines IJ, subclavian, femoral, flow-directed PA catheter placement, A-lines radial, DP, PT, femoral, tube thoracostomies, NG, Foley, etc. Residents assist attending surgeons in bedside operative procedures, which include tracheostomy, gastrostomy, laparotomies, fasciotomies, etc. Bi-weekly educational conferences are part of the didactic curriculum of the SICU. One of these conferences each month will be multidisciplinary and include the Medical Intensive Care Unit. The MICU fellows and residents attend.

Back to Top Obstetrics Rotation Anesthesiology residents at Drexel University College of Medicine begin participating in the anesthetic care of obstetric patients during their first year of anesthesia residency. They spend a month-long rotation caring for patients undergoing vaginal deliveries, Cesarean sections, and various other obstetrics-related procedures. In addition, labor analgesia techniques and anesthetic techniques for Cesarean sections are stressed. This rotation often provides residents with their first major hands-on experience in neuroaxial conduction blocks such as spinal, epidural, and combined spinal-epidural techniques. During the third year, residents have the opportunity to hone the skills introduced during their first obstetrics rotation. They are also expected to explore the implications of various pregnancy-related and non-pregnancy-related disease processes on the parturient patient, fetus and the management of delivery, especially as related to anesthetic management. Third year elective rotations are available for up to six months in order to continue the learning process as well as introduce the resident to opportunities in obstetric anesthesia research. Faculty members with expertise in obstetric anesthesia closely supervise residents, discuss anesthetic plans and provide didactic instruction to all residents and medical students rotating on the labor floor.

Back to Top Off-Site Rotation During this rotation senior residents learn to provide anesthesia in locations other than operating rooms, such as in the endoscopy suite, MRI, critical care units, cardiac cath lab and in the GI suites. Anesthetics will be primarily TIVA total intravenous anesthesia although occasionally general anesthesia will be required. By the end of the rotation residents are comfortable both providing anesthesia in a variety of "remote" locations and intervening in emergent situations with sound judgment and

professional response. Residents also learn to evaluate patients scheduled for procedures in non-operating room locations and perform pre-operative evaluations to assure optimum medical status prior to the proposed procedure. By the completion of this rotation senior residents understand how to manage and provide "rescue" anesthetics for procedures initiated as conscious sedation that ultimately require a deeper level of analgesia, and often educate non-surgical colleagues regarding the risks and benefits of different types of anesthesia. Back to Top Neurosurgical Anesthesia Rotation Residents spend two months in neurosurgical anesthesia in their CA-2 year and may elect additional months during their CA-3 year. The neurosurgical anesthesia rotation takes place at two sites: Special attention is placed on management of increased intracranial pressure, posture, air embolism, cerebral protection, cerebral vasospasm, ventilation and fluid management. During these month residents learn to develop skills necessary for maintaining adequate comfort and anesthesia with procedures involving continuous evaluation of motor and speech skills. Further, residents learn to build on their airway skills, which may include deep sedation prior to intubation or extubation to prevent increase in intracranial pressures. Residents learn extensively about vasopressors and titration in order to maintain appropriate blood pressures to improve surgical outcomes. Back to Top PACU Rotation Goals for this rotation include developing a level of competency for the evaluation and management of postoperative pain, ensuring that patients meet the requirements for discharge before being released, and facilitating patient discharge from the PACU when appropriate criteria have been met. Residents will also develop the capability to diagnose and manage anesthetic complications that are unique to the post-operative period. The center specializes in the assessment and development of long-term treatment plans for patients suffering from chronic pain associated with common disorders of the spine, cancer pain and neuropathic pain. Under the supervision of a pain faculty member, residents will be responsible for the medical management as well as determining the course of interventional therapy. Procedures done in the pain center include epidural injections, facet blocks, sacroiliac joint injections, trigger point injections, radio frequency ablative procedures, provocative discography, percutaneous spinal cord stimulator trials, intrathecal pump trials, and neurolytic injections in patients with cancer pain. Other responsibilities involved include inpatient consults and follow-up on post-operative pain patients. Residents are expected to attend multidisciplinary chronic pain meetings. This experience is supplemented with weekly rounds by a neurology attending on the complex regional pain service. The preoperative evaluation unit is where patients are evaluated for ambulatory procedures and more complex surgery requiring postoperative hospital admission. In this setting residents learn the importance of evaluating patients in advance of their scheduled admission, most importantly the identification of at-risk patients so that interventions may be implemented to decrease perioperative risk prior to their presentation for surgery. During these months residents evaluate a large variety of patients and learn to stratify anesthetic risks by taking a comprehensive history, recognizing important findings on physical examination and cost-effectively ordering additional studies or consultations when appropriate. Most imperatively the resident gains confidence in formulating an anesthetic plan for a given patient based on the type of surgery and information gleaned from the evaluation. Finally the resident should develop the communication skills needed to effectively and compassionately communicate this information to the patient as part of informed consent. Residents learn pediatric anesthesia through didactic lectures, case conferences, bedside teaching, morning report, and patient care. In addition the staff anesthesiologists and fellows provide basic lectures in pediatric anesthesia. Conferences are held Monday, Wednesday and Friday mornings. The residents learn to perform preoperative evaluations and administer anesthesia under the supervision of a fellow and a staff anesthesiologist. Post-operative checks are also part of the education. At the completion of the rotation, residents should understand basic anatomic, physiologic, pharmacologic and emotional differences between adults and children. They should be familiar with many of the common disease states unique to pediatric patients. Further they should learn the skills necessary for preoperative evaluation and preparation, induction and maintenance of anesthesia, vascular access, endotracheal intubation, IV fluid therapy, and vasoactive support of the circulation of the pediatric patient. Residents should understand the indications for and be able to interpret the

data from non-invasive and invasive monitors. Residents are also taught regional anesthetics in children and become familiar with various modes of postoperative analgesia. As the residents progress through their rotation they are given increasingly difficult airways associated with the many syndromes and congenital malformations of pediatric patients. The resident is under constant supervision with an attending during these difficult airways. Anesthesia residents in their CA-3 year may use elective time to rotate and receive additional subspecialty training in pediatric anesthesiology. Third year residents are assigned the more challenging cases. CA-3s are also assigned to the post anesthesia care unit to handle early postoperative problems and to the pediatric pain service to gain familiarity with the diagnosis and treatment of acute and chronic pain.

Back to Top Regional Rotation The practice of regional anesthesia has seen resurgence in recent years and is firmly established as an integral and important part in the practice of modern anesthesiology. Residents spend time on the regional service during the CA-2 and CA-3 clinical training years. By the end of the rotation, the resident should be proficient in techniques, indications and contraindications, clinical complications, and medications used in regional techniques. During this block residents learn in detail about peripheral nerve anatomy and local anesthetics appropriate for each unique procedure. Residents further learn to master techniques with the use of the ultrasound machine. Each resident is taught the mechanics and physics regarding the machine and methods that aid to visualize peripheral nerves.

Back to Top Research Rotation An elective, the research rotation engages residents in research activities at Drexel University College of Medicine, with a minimum two-block continuous commitment and maximum of six blocks. Opportunities for basic and clinical research experience exist in the Department of Anesthesiology, and in other clinical and basic science departments in the College of Medicine and other schools and colleges of Drexel University. There are many opportunities for residents to either participate in an ongoing research project or develop their own project.

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Chapter 5 : Critical Care Anesthesia Fellowship - Massachusetts General Hospital, Boston, MA

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When using general anesthetics, they must carefully watch all vital signs at all times and communicate this information to the surgeon; for localized anesthetics, they must maintain communication with patients and monitor their comfort levels throughout what are typically out-patient procedures. Most general anesthetics are now administered to patients through an existing IV tube. Just before surgical procedures, anesthesiologists will begin to carefully add the sleep-inducing drugs to the IV solution, and throughout surgery they will carefully monitor vital signs, such as heart rate, respiration, and blood pressure. This is typically done with an injection, but the anesthesiologist must carefully find the proper site and may need to administer more than one shot for full effects. As the procedure continues, the anesthesiologist stays in contact with the patient and monitors discomfort levels through this feedback and visual observation. Anesthesiologists are licensed and certified physicians, and this career field has the same rigorous training requirements in undergraduate studies, medical school, and residency as many other physician specialties. They work primarily on complex and lengthy surgeries which require precision and experience, and typically work daytime hours unless practicing at a hospital with more extensive surgical hours. Confer with physicians or surgeons to determine post-procedure condition of patient. Record type and amount of anesthesia administered, as well as any adverse reactions. Average total compensation includes tips, bonus, and overtime pay. What is it like working in Philadelphia? Everyone here is so great and really wonderful to be around. Everyone from the patients to attendees are just fantastic to be around. The cost of living her is great and good for my type of work. On a hot summer day in Philly it smells like pee because of all the hobos. Although traffic can be ruff depending on the time of day. Anesthesiologist in New York: Remain efficient and vigilant throughout your career. Focus on practicing sound evidence based safe anesthesia. Be adaptable and communicate well. Key Stats for Anesthesiologist.

Chapter 6 : Anesthesiology Residency Program Clinical Rotations - Drexel University College of Medicine

The UMKC School of Medicine Critical Care Medicine Fellowship is a two-year program; alternatively, internists with ABIM certification in a qualified Internal Medicine subspecialty (e.g., Pulmonary, Nephrology, Cardiology, Hematology, Infectious Disease) are eligible for 1 year of Critical Care Medicine training.

Chapter 7 : Anesthesiologist Salary | PayScale

The Critical Care Anesthesia Fellowship at Massachusetts General Hospital is a month ACGME-accredited training program that prepares individuals for a career in the care of critically ill patients and management of an intensive care unit.

Chapter 8 : Preferred Critical Care Spec. prior to CRNA | allnurses

Central line training by our critical care anesthesiologists occurs monthly, and ultrasound workshops by our regional anesthesia faculty are presented formailly twice a year, though practiced daily in the operating rooms.

Chapter 9 : University of California, Irvine : Department of Anesthesiology & Perioperative Care

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The critical care medicine physician is a specialist whose knowledge is of necessity broad, involving all aspects of management of the critically ill patient, and whose primary base of operation is the intensive care unit (ICU).