OUR MISSION

To graduate phenomenal clinicians who are self-regulated learners, are thoughtful, curious and happy and aspire to be leaders in academic medicine and in the community.
A MESSAGE FROM OUR CHAIR

It is my pleasure to welcome you to our Department of Emergency Medicine’s Residency Program at The Ohio State University and Ohio State Wexner Medical Center. Having been part of this program for the past 25 years, I have had the opportunity to see this program grow from its infancy to one of the strongest programs in the country. As chair of the department, I am excited about the innovation, energy and devotion of the residency leadership under the direction of Dr. Sorabh Khandelwal, Dr. Andrew King and Dr. Geremiha Emerson. The residency program continues to grow and mature, providing our resident graduates with outstanding career opportunities in academia and community medicine. The residency is located within a strong academic department with nearly 60 faculty members who have a wealth of experience in clinical medicine, education and research. Enriching our EM residency is our EM/IM residency with our collaborative partner, Internal Medicine.

Our recently opened new ED, with approximately 110 beds, has doubled the size of our ED and includes some innovative new care models including oncologic emergencies, geriatric emergency care and observation medicine. At a time when many departments are struggling, we are sound and growing. We seek to train the Emergency Medicine leaders of tomorrow and welcome you to Ohio State. We are dedicated and proud to provide the best possible patient care, while respecting the individual’s background and needs. As a department, we continue to aspire to remain one of the top academic departments in the country and see our residency as one of the crown jewels in our department.

Mark Angelos, MD
Professor and Chair
Department of Emergency Medicine
The Ohio State University Wexner Medical Center
WELCOME FROM THE VICE CHAIR OF EDUCATION

Having held the position of Emergency Medicine residency director and now as the Emergency Medicine/Internal Medicine residency director and vice chair of Education, I have the privilege of overseeing our department’s education mission. From our roots as one of the first academic departments of Emergency Medicine and one of the earliest residency training programs, our department now includes a categorical EM residency program with 16 residents per year, an EM/IM residency program and multiple fellowship training opportunities.

Our goal for residency education is simply to be one of the top programs in the country and to train the future leaders and scholars of Emergency Medicine. Our graduates will impact and influence our field at every level. We intend to accomplish these goals through four important areas of focus:

A Culture of Education, Innovation and Excellence
Professor rounds, a resident-focused coaching program and wellness initiatives are a small sample of some of our innovative ingredients and our department’s focus on educational excellence. Looking towards the future, we have implemented career development tracks with integrated leadership development. Similarly, we are currently working on new technology initiatives to further enhance our residents’ educational experience.

Curriculum Development and Innovation
We have extrapolated from the best practices of adult learning theory and the medical education literature to blaze new trails and develop an innovative curriculum for our residency training programs. Maximizing resident education and achieving expertise and excellence through self-directed learning augmented by high-quality didactics is the goal of our curriculum.
Lead, Contribute and Influence by Example
Attend our specialty’s national meeting and you are likely to experience the impact of our faculty, our residency alumni and our current residents.

Win with People
At Ohio State, we believe our people — faculty and residents — are one of our most valuable resources. Imagine a department of over 50 faculty members — many with national reputations — committed to your educational development. Our faculty offers a wealth of varied experience and interests. Whatever your future career intentions, we likely have someone who can mentor you and share the wisdom they’ve gained through time and practice. Our faculty will become your leaders, mentors and colleagues.

Ohio State features a culture of innovation and excellence, an expertise in curricula design, a department with a national reputation and people who foster an educational work environment.

Daniel Martin, MD, MBA
Professor and Vice Chair of Education
Department of Emergency Medicine
The Ohio State University Wexner Medical Center

“During my time at Ohio State, I made some of the best friends I have ever had and gained a group of close colleagues that I admire and respect. I didn’t realize until after my training that Ohio State had prepared me to handle everything that comes through the doors of my busy hospital. From the simple ankle sprain to the crashing airway, I have the skill set and knowledge to competently take care of my patients and gain the trust of my nurses, staff, and colleagues. Training at Ohio State is the one part of my journey to become an Emergency Physician that I would, without hesitation, do again.”

– Alex Bush, MD
alumna, 2015
Choosing the right emergency medicine training program is one of the most important decisions you will make. Our program offers a comprehensive education within a nurturing environment. Through our resident selection process, we look for highly motivated candidates who will become leaders in Emergency Medicine.

Our residents learn from a diverse group of faculty educators, many of whom have received local and national awards for research, clinical care and education. Significant time and resources have gone into producing an optimal learning environment. We have built our conferences around sound educational principles. We have also introduced a coaching program to help motivate residents to reach their maximum potential.

The primary mode of information sharing is through small group sessions led by senior residents and faculty. There is a strong focus on improving clinical-reasoning skills. Integrated in this learning experience are high-fidelity simulation exercises and procedural training sessions that occur as part of our conference schedule. There are joint conferences with many departments such as Cardiology, Internal Medicine, Psychiatry and Trauma Surgery, enhancing resident education.

Our residents will hone their skills in a new 106-bed ED complete with a state-of-the-art observation center and a comprehensive section devoted to the emergent care of cancer patients. Ohio
State serves as both a local hospital and regional referral center; consequently, our residents are exposed to a wide variety of patient cases and a patient population with high acuity. Exposure to pediatrics is through our sister hospital, nationally renowned Nationwide Children’s Hospital, where our residents are supervised by board-certified pediatric emergency physicians. Our residents receive excellent training in trauma and critical care through experiences at Ohio State and our community partners.

Residents are encouraged to participate in research. Our Department of Emergency Medicine has gained international acclaim for scientific research. Faculty research interests are varied and include EMS, ultrasound, education, infectious disease, clinical operations and geriatrics.

Our program, through the comprehensive and individualized training offered, hopes to graduate emergency physicians with a strong personal identity who are self-directed lifelong learners, who are resilient and thoughtful, who are excellent clinicians with advanced clinical-reasoning skills, and most importantly, who are committed to making a difference in the world.

Sorabh Khandelwal, MD
*Samuel J. Kiehl, III, MD, Professor in Emergency Medicine*  
*Residency Program Director*  
*Department of Emergency Medicine*  
*The Ohio State University Wexner Medical Center*
EMERGENCY MEDICINE RESIDENCY

The Ohio State University Wexner Medical Center-affiliated Emergency Medicine Residency is a three-year program (PGY 1, 2, 3) designed to provide education and experience in the clinical, educational, administrative and research aspects of emergency medicine and its allied fields.

The clinical program is the cooperative endeavor of The Ohio State University Wexner Medical Center, Ohio State University Hospital East and Nationwide Children’s Hospital (NCH).

The Department of Emergency Medicine has full departmental status within The Ohio State University College of Medicine, and many of our faculty serve in administrative roles within the hospital and the College of Medicine.

The Ohio State University Wexner Medical Center and the Department of Emergency Medicine are located on a large unified university campus with outstanding academic and cultural environments. The size and resources in our Emergency Department at the main campus are rapidly expanding. Our new ED features oncology, critical care, hyperbaric medicine, trauma resuscitation and imaging core pods.
The new ED provides an exceptional setting for delivering outstanding care and for promoting cutting-edge education for residents and students alike.

More than 200,000 patients are collectively treated at The Ohio State University Wexner Medical Center and Nationwide Children’s Hospital Emergency Departments. Each of the sites provides care to a vast number of critically ill medical and surgical patients.

Our other clinical sites are large, private local hospitals with numerous residency training programs, subspecialty support and a strong interest in clinical education.

**EM RESIDENCY PROGRAM**

- **Year established**: 1981
- **Total # EM positions/year**: 18
- **Total # EM/IM positions/year**: 2
- **Fellowship opportunities**: 7
- **Total alumni**: 300
First Graduate Year

During the first year of the program, the resident will gain experience in a variety of disciplines relevant to Emergency Medicine. The experience in the management of pediatric emergencies is particularly strong, as are the core experiences in cardiology, anesthesia, obstetrics, orthopedics, and medical and neurosurgical critical care. Residents will complete an immersive ultrasound experience. They also will choose from several selective subspecialty opportunities to personalize their residency experience.

Second Graduate Year

During the second year, emphasis is placed on Emergency Medicine. This time focuses on development of progressive autonomy in patient management and development of teaching skills. In addition, the resident obtains experience in a variety of subspecialties including trauma. The resident gains further experience and expertise in performing procedures such as placement of central lines, airway management and emergency ultrasound.

Toxicology is taught by our faculty in conjunction with clinical experience at the Central Ohio Poison Control Center. The Center for EMS offers exposure to prehospital care and experience in medical direction.
Third Graduate Year

The third year of the program provides the senior resident with the opportunity to accept responsibility for managing many patients simultaneously, while supervising and teaching junior-level house officers and students in the emergency departments. This graded responsibility helps the senior residents gain independence and expertise in managing the department.

The third-year resident has an active role in the facilitation of small-group-based didactic conferences as well.

Numerous electives are available as part of the third-year curriculum. Although unlimited possibilities exist, one popular elective is Community Emergency Medicine in Hawaii. The third-year resident can also participate in an immersive research experience during this time.

### EM PROGRAM CURRICULUM

#### PGY-1 Curriculum (13 blocks)

<table>
<thead>
<tr>
<th>Orientation (OSU/NCH) 1 Block</th>
<th>Adult Emergency Medicine (OSU) 4.5 Blocks</th>
<th>Adult Emergency Medicine (OSU East) 1 Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology (OSU) 1 Block</td>
<td>Orthopedics (OSU) 1 Block</td>
<td>Medical Intensive Care Unit (RMH) 1 Block</td>
</tr>
<tr>
<td>Pediatric Emergency Medicine (NCH) 1 Block</td>
<td>Anesthesia/Ultrasound/Elective (OSU) 1 Block</td>
<td>Neonatal ICU (OSU) Neurosurgery Critical Care (OSU) 1 Block</td>
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<tr>
<td>OB/GYN (OSU) 0.5 Block</td>
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#### PGY-2 Curriculum (13 blocks)

<table>
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<tr>
<th>Adult and Pediatric Emergency Medicine (OSU/NCH) 8 Blocks*</th>
<th>Ross Heart Hospital ICU 1 Block</th>
<th>Medical Intensive Care Unit (OSU) 1 Block</th>
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<tr>
<td>EMS/Ultrasound 1 Block</td>
<td>Trauma Surgery Critical Care (Grant) 1 Block</td>
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</tr>
<tr>
<td>Medical Education (OSU)/Toxicology (Poison Center) 1 Block</td>
<td>*Longitudinal pediatric experience (NCH) equivalent to two blocks</td>
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#### PGY-3 Curriculum (13 blocks)

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<thead>
<tr>
<th>Adult and Pediatric Emergency Medicine (OSU/NCH) 8.75 Blocks*</th>
<th>Adult Emergency Medicine (OSU East) 1 Block</th>
<th>Medical Intensive Care Unit (RMH) 1 Block</th>
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<tbody>
<tr>
<td>Ultrasound 0.25 Block</td>
<td>Elective (Hawaii/International) 1 Block</td>
<td></td>
</tr>
<tr>
<td>Selective 1 Block</td>
<td></td>
<td>*Longitudinal pediatric experience (NCH) equivalent to two blocks</td>
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CLINICAL SKILLS EDUCATION AND ASSESSMENT CENTER

The changing nature of medical practice and the national demand for accountability in medical education highlight the need for a leading-edge clinical skills center. National accrediting bodies are challenging medical education institutions to demonstrate that medical students and residents possess the requisite knowledge, skills and attitudes essential to the practice of medicine.

The Clinical Skills Education and Assessment Center at The Ohio State University Wexner Medical Center is a state-of-the-art training center simulating actual patient care experiences. The facility features patient room encounters, patient models, standardized patients, high-tech patient simulators
and electronic monitoring stations. ICU, ED and OR rooms are offered, as well as dedicated space for ultrasound training and hands-on procedural training. The center provides exciting opportunities for comprehensive interdisciplinary education. We anticipate continued acquisition of high-fidelity simulators to meet a broad range of educational needs.

RESIDENT CONFERENCES

Emergency Medicine conferences take place weekly every Wednesday morning and include four to five hours of small group discussions, morbidity and mortality sessions focusing on cognitive errors, simulation and procedure sessions, lectures and case conferences. The format of this educational setting is specifically designed to be innovative and interactive.

Emergency Medicine conferences are attended by education faculty and are considered protected times for residents working in the Emergency Department and nearly all off-service rotations. Conferences promote self-directed learning using a “flipped classroom” model. In preparation for the weekly small group discussions, residents review various educational resources pertaining to the topics being covered. Small group sessions, which are evidence based, are led by both Emergency Medicine education faculty and senior residents. Teaching faculty strive to maximize the use of technology in both the clinical and didactic settings. Asynchronous learning opportunities are also present, and a question bank is provided to each resident.

Emergency Medicine residents participate in weekly simulation and procedural sessions to practice skills pertinent to emergency medicine processes and procedures.

As part of the curriculum, visiting professors of national prominence are invited to share their expertise in specific areas of Emergency Medicine.

During the first year of residency, additional lecture sessions are scheduled during the month of July to provide an overview of Emergency Medicine and an orientation to the curriculum. At Ohio State, emphasis is placed on active learning and engaging, thought-provoking educational formats.
PEDIATRIC EMERGENCY MEDICINE

Nationwide Children’s Hospital is one of the largest children’s hospitals in the country and the pediatric tertiary referral center of central Ohio. It offers multiple subspecialty training programs and expertise in a variety of pediatric disciplines enhancing resident education. Nationwide Children’s Hospital features brand-new facilities, including a new 62-bed Emergency Department. It is part of a tertiary care pediatric center and a Level I Trauma Center. This ED has an annual census of over 75,000 patients.

TRAUMA SERVICES

The Ohio State University Wexner Medical Center has an active trauma service with a Level I Trauma Center designation. Emergency Medicine residents are an integral part of the trauma team in all trauma resuscitations.
“The patients, the people, and the passions! The patients at Ohio State are very sick as they are at any tertiary care center. The people (residents and attendings and support staff) you work with make a difference, and I have yet to meet someone at Ohio State who isn’t dedicated to being exemplary. Most importantly, the passions. People at Ohio State are driven by a passion for excellence. No matter what your interests, Ohio State has a faculty member who is passionate about it as well and can get you involved. They are also passionate about residents here, so if you don’t find what you are looking for they will give you the opportunity to make an experience all on your own in your area of interest.”

– Caleb Taylor, MD

current resident
EMERGENCY MEDICAL SERVICE (EMS) EXPERIENCE

Prehospital care is emphasized throughout the residency program. In addition to accompanying paramedic teams on emergency calls, residents will be directly involved in the planning and operation of the EMS systems.

Since 2004, the Center for EMS at The Ohio State University Wexner Medical Center has been dedicated to improving outcomes for cardiac arrest, trauma and other patients in our community. A cooperative effort between the Department of Emergency Medicine and Ohio State Wexner Medical Center and the Center for EMS (CEMS) seeks to provide an educational and research resource to the central Ohio EMS community. By uniting the efforts of the prehospital provider with the hospital-based team, the CEMS is dedicated to providing everyone in the community the best opportunity for survival and improved quality of life.

MedFlight is the critical care transport service serving central Ohio and operated by The Ohio State University Wexner Medical Center and OhioHealth. Online medical control for the helicopter and mobile ICU is provided by the Emergency Department at Ohio State. Residents may also elect to participate in patient transports with the crew of MedFlight and will participate in physician medical direction of the program.
NATIONAL CONFERENCES
The residency provides funds and time off annually for the PGY-1 and PGY-3 classes to attend a conference. This conference time has been proven to be both educational and fun. Many residents value the bonding experience with co-residents and faculty, the dedicated educational experience and the opportunity to become involved in emergency medicine at a regional and national level. Currently, the PGY-1 class attends the SAEM Annual Meeting, and the PGY-3 class attends the ACEP Scientific Assembly. The department will also support residents who have original research accepted for presentation and those serving on national committees.

RESEARCH AND SCHOLARLY ACTIVITY
Residents are required to participate in at least one scholarly activity during the course of their training. This may be a basic science project, a clinical or epidemiological study, a case report or a collective clinical review of publishable quality. One or two blocks of elective time may also be used to supplement this experience. The purpose of the requirement is to introduce the resident to the critical evaluation of the biomedical literature and research methodology. The Emergency Medicine faculty are active in all facets of research and scholarly activity and serve to guide residents through this requirement.

For basic science research projects, the faculty use dedicated research labs and are actively involved in interdisciplinary research within the university. In addition, several ongoing prehospital and Emergency Department clinical research projects provide an opportunity for residents to participate in robust, nationally recognized clinical studies. Residents are encouraged to publish and present at regional or national meetings during their training. Emergency Medicine residents gain an understanding of evidence-based medicine principles and learn to critically review literature under the guidance of our research faculty.

RESEARCH 2010-2017
**Ohio State ranked #17 among departments of EM in NIH funding for 2016**

**Total medical center funding**..............................$496 million annually

Department of EM external grant funding ...........$5.5 million

Department of EM NIH funding .........................$6 million (including NIH R01 Award)

Peer-reviewed publications .................................332
Throughout interview season, I was looking for my ‘people,’ who would become lifelong friends and push me to become a good EM physician. On my interview day, I found that at Ohio State. My talented co-residents have become great friends, and Ohio State has an engaged faculty and a supportive administration that is giving me the opportunity to become a great EM physician, along with the support needed to pursue my EM research interests.

– Katherine Hunold Buck, MD

current resident

**ULTRASOUND**

The Ohio State University Department of Emergency Medicine has a nationally recognized ultrasound program, and ultrasound has been part of our residency for more than 15 years. The program has an active ultrasound fellowship and a wonderful relationship and budding fellowship with the Pediatric Emergency Medicine program at Nationwide Children’s Hospital. As leaders in ultrasound education, our faculty lecture internationally and are highly involved in national ultrasound organizations.

With the goal of creating leaders in the field, all residents will receive cutting-edge education in emergency point-of-care ultrasound, spending six weeks during residency on ultrasound rotations, with the option of more time as an elective. In addition to the core curricular experience, nearly a third of our residents opt into the ultrasound track, providing a mini-fellowship experience with teaching time, advanced scans and extra research opportunities. Residents may also elect to gain fellowship-level education and mentorship through an advanced ultrasound track program. Additional opportunities for ultrasound learning, research and collaboration with other medical center departments are gained through our ultrasound leadership’s involvement with institutional ultrasound development. Furthermore, the Ohio State College of Medicine features an active Ultrasound Interest Group and a robust four-year integrated ultrasound curriculum, so motivated medical students can maximize their teaching and research possibilities.

- In our Emergency Department, we have six ultrasound machines at the main campus and two at our east campus.
- Systemwide, we use Qpath™ software for review, billing and feedback.
- All scans performed in the department are reviewed by our team of ultrasound faculty, affording real-time feedback to residents.
- Learning facilities include an ultrasound laboratory complete with eight machines and several phantoms, including a high-fidelity cardiac ultrasound simulator with transesophageal echocardiography training capabilities.
RESIDENT HAPPINESS

We understand that work-life integration is essential to physician wellness. The residency features wellness education and has a resident wellness committee that organizes social events and activities to promote both a collegial and professional environment. The residents have fielded intramural kickball, basketball, volleyball and flag football teams. To welcome the new interns and congratulate the graduating residents, the department hosts an annual “Hello/Goodbye Picnic” for residents and faculty. There is also an annual graduation activity, a holiday party every December and frequent get-togethers between residents and attendings outside of the department, especially for breakfast after night shifts. Residents have teamed up together to participate in the annual “Med Wars” race and formed cycling teams for Pelotonia, the annual Ohio State-sponsored event to raise money to find a cure for cancer. They have also traveled for international medicine experiences, provided care at the Columbus Free Clinic and participated in many other social and community activities.

A DIVERSE AND SUPPORTIVE LEARNING ENVIRONMENT

The college promotes a diverse community to enrich your experience and prepare you for practice within an ever-changing patient population.

The curriculum fosters an understanding of all the factors that influence health, including culture, which is a significant determinant of one’s beliefs, biases and behaviors.

The College of Medicine’s Office for Diversity and Inclusion promotes recruitment efforts and educational experiences to create a diverse student body and meet the healthcare needs of underserved populations.
For more information, visit

em.osumc.edu