Scholarship Track in Emergency Medicine

Anita Goel, MD

Goals and Objectives

1. Understand the role of Emergency Medicine within the healthcare system.
2. Integrate basic science and clinical research into the care of the undifferentiated patient.
3. Develop communication skills vital to the practice of Emergency Medicine through clinical experience, simulation and discussion.
4. Nurture a mentoring relationship with Emergency Medicine faculty and residents.
5. Explore a niche within Emergency Medicine and complete a scholarly project.
6. Become a leader through service within the College of Medicine and Cincinnati community.

STEM Core Faculty

Anita Goel, MD

EM Resident involvement will be solicited on a volunteer basis, particularly among students enrolled in the EM Department's Education Leadership Academy. Residents will act as mentors and instructors for the program's quarterly educational activities.

Scholar Track Enrollment and Participation

Criteria for Admission

Applicants must be first-year students (M1) in the College of Medicine in good academic standing. Applicants should have an interest in EM, however no prior EM or research experience is required for admission. We anticipate selecting two students per year, however we may choose to expand enrollment as departmental resources allow.

Criteria for Ongoing Participation

Since the STEM Program is an optional opportunity with significant time commitment, all students must remain in good academic standing within the College of Medicine to participate. Students are encouraged to be forthcoming and disclose problems with academic performance early on to their mentors and STEM Director. Academic standing will be reviewed each year by the STEM Director. Students that fall out of good academic standing or into academic warning will be suspended from STEM activities until academic performance improves. Professional misconduct, both academic and non-academic, will not be tolerated and will result in dismissal from the STEM Program.

Attendance in STEM activities is required, with important dates published in advance. STEM activity attendance will be monitored and reviewed each semester. Students must meet hourly requirements for shadowing and complete a scholarly project by the end of their fourth year. Students who meet all requirements will be designated as STEM Program graduates in the Dean's Letters and receive a Certificate of Completion upon graduation from the College of Medicine and recognition at the Honors Day Ceremony.

Curriculum Overview

Didactics and Procedure Labs

Care of the undifferentiated patient is a core component of medical training. Quarterly, we will have a three-hour session in the evening covering core topics and skills in emergency medicine for all STEM participants. Each session will revolve around a central theme, including a relevant case presented by a resident or faculty member, short didactic, and a procedural or exam skill. Please refer to the appendix for specific lesson plans. In addition, students are invited to EM Resident and Emergency Medicine Interest Group programming.

Clinical Experience

All STEM students are required to shadow in the Center for Emergency Care (CEC) at the University of Cincinnati Medical Center. Students will be assigned to an attending physician or upper level resident for each shadowing shift. To verify attendance, students will have to obtain a signed form from their assigned attending physician. STEM students are expected to complete a total of 60 hours of shadowing during their pre-clinical years, and are required to complete the M3 Emergency Medicine Elective and M4 Emergency Medicine Acting Internship.

Scholarly Project

After the M1 year, students will embark on a scholarly project of their choosing. Under the oversight of Dr Goel, students will be offered a list of summer opportunities within the Department of Emergency Medicine. Opportunities may include laboratory research, clinical research in the ED or the prehospital setting, or chart review. There must be an end-product worthy of either formal presentation or publication. Each student will meet quarterly with an assigned Faculty Project Mentor through completion of his/her scholarly work. All students will receive financial compensation for their efforts.

Mentorship

Each STEM student will be assigned a research mentor within the Department of Emergency Medicine at the end of their M1 year, that (if personality compatible) will serve as their 4 year faculty mentor. There are also usually 2-3 residents in the EM program involved in MSSP EM, and they serve as informal mentors throughout the four years. If students have any specific types of interests (ICU, EMS, toxicology, ultrasound), Dr Goel can help assign other faculty or resident mentors as appropriate.

Leadership and Service

STEM students are highly encouraged to take an active role within the College of Medicine and the Cincinnati community. Students may choose to serve on College of Medicine committees, lead interest groups for medical students (EMIG), or participate in community service organizations. Students are expected to log a minimum of 40 hours of service across their 3.5 years in the STEM Program.

Didactics and Procedure Labs (quarterly, required)

Goals and Objectives:

1. Understand basic diagnosis and management of core clinical topics in emergency medicine.
2. Practice essential procedures in emergency medicine.
3. Apply knowledge and skills gained to related case scenarios and simulations. 4. Serve as a near-peer educator, with senior learners (M3-M4 students) guiding junior learners (M1-M2 students) through didactic and procedural activities.

Over the 3.5 years in the program, students will learn core topics to emergency medicine at the didactic sessions including but not limited to abdominal pain, chest pain, shortness of breath, altered mental status, approach to trauma, orthopedic injuries, delivering bad news, EM and public health, shock, and toxicology. Attendance at Quarterly Activities is required.

EMIG Activities (not required)

The Emergency Medicine Interest Group (EMIG) holds approximately six lunchtime talks and three procedure workshops a year. STEM Program participants would be expected to attend at least 75% of EMIG events over the first two years. This expectation is waived during the M3-M4 clinical years.

Emergency Medicine Residency Program Activities (not required)

Students will be invited to attend residency-wide academic programming, including:

1. Grand Rounds: Wednesdays from 0800-1300
2. Coffee Talk: Every other Wednesday from 0700-0800
3. Topical Mentoring and leadership academies

M1-M2 summer:

The summer experience is designed to be flexible in terms of scheduling but high yield in terms of learning. Students will primarily work on their scholarly research project with their assigned mentor, with an expectation of presenting at the UCCOM fall student poster symposium in Oct / Nov. Additionally over the summer there are other required activities:

1. Attendance at 6 grand rounds Wednesdays, report of 3 learning points emailed to Dr Goel after each session.
2. Attendance at 2 journal clubs (held by EM MSSP residents).
3. Attendance at case based learning (teams meetings) – 4 total over the summer.
4. Students are encouraged to complete their 60 hrs of shadowing and 40 hours of community service over the summer.

At the completion of the summer, students will receive a $2500 stipend for their work.

Clinical Experience

Goals and Objectives:

1. Observe patient encounters in an urban, academic emergency department.
2. Apply pathophysiology learned in the classroom to patient care.
3. Discuss what personal and professional life is like for emergency physicians.

Emergency Department Shadowing

The University of Cincinnati Medical Center's Center for Emergency Care (CEC) offers shadowing to pre-clinical medical students from November to June of each academic year. While shadowing is open to any medical student that wishes to participate, all STEM students will be required to participate in the shadowing program. STEM students will be expected to complete a total of 60 hours of shadowing by the end of their M2 year. Also, the shadowing experience is variable depending on patient volume, time of day, and clinical staff. Students will be assigned to an attending physician for each shadowing shift. Students will follow the attending through patient encounters, procedures, and observe attending-resident interaction and teaching.

In order to accommodate student schedules, students can select a shift length that works for them. Shifts will be a minimum of 4 hours and a maximum of 12 hours in length and must begin and end with the same attending physician. To verify attendance, students will obtain a signed form from their assigned attending physician. Forms will be turned into the black evaluation boxes in the CEC, which will be collected by our Department Administrator, Ms Paula Klepper. The STEM director will receive updates in December, March and June to monitor for completion of the Clinical Experience requirement. Students who fail to meet the Clinical Experience requirement at the end of their M2 year will be suspended from STEM activities until the requirement is fulfilled.

Subspecialty Clinical Opportunities

Additional clinical opportunities in emergency medicine subspecialties may be pursued as desired by STEM students on an individual basis. These opportunities may include:

1. Toxicology: Poison center, Toxinology at the Zoo
2. Pediatric Emergency Medicine: Shadowing in the Cincinnati Children's Hospital Medical Center Emergency Department, Burnet Campus
3. Critical Care: Shadowing in NSICU or MICU
4. Ultrasound: Scanning shifts with Pattie Smith, RDMS
5. EMS – shadowing on EMS truck or with AirCare

Emergency Medicine Clinical Rotations

STEM Students are required to enroll in the M3 Emergency Medicine Elective, which is a two-week rotation directed by Dr Eddie Irankunda. Students that remain in the STEM Program must also complete the M4 Emergency Medicine Acting Internship, which is directed by Dr Jason Nagle.

Scholarly Project

Goals and Objectives:

1. Investigate an area of interest in emergency medicine.
2. Under the guidance of a Faculty Project Mentor, create a poster, abstract, manuscript, or book chapter based on a summer-long or longitudinal project.
3. Present findings to an audience at the College of Medicine and/or at a local or national emergency medicine conference.

As the field of emergency medicine becomes more competitive, residency programs are looking for students who have completed an emergency medicine based scholarly project. This demonstrates student interest, work ethic, and commitment to the field. After the M1 year, students will embark on a scholarly project of their choosing. While many scholarly projects will be research-based, research is not a requirement. At a minimum, students must work on their scholarly project full time during the summer between M1-M2 year. Some students may choose to continue beyond the summer requirement and throughout their medical school education. It is an MSSP requirement to participate in the UCCOM fall student poster presentation in Oct / Nov after the M1-M2 summer.

Student Expectations

1. Dedicate a minimum of 40 hours per week of work over 8 weeks during summer break. Hours must be logged and submitted at Week 4 and Week 8 of the summersession.
2. Attend all necessary meetings and training sessions for the scholarly project's work group or lab.
3. Produce an end-product which is suitable for dissemination or publication. This can be a poster, abstract, manuscript, or book chapter. An end-product must be produced by March of M4 year.
4. Present findings to an audience at the College of Medicine (Emergency Medicine Interest Group of the College of Medicine, Emergency Medicine Research Interest Group for the Department of Emergency Medicine) and/or at a local or national emergency medicine conference. Findings must be presented by April of M4 year.
5. Inform STEM Director (Dr. Goel) of any issues regarding mentor professionalism.

Faculty Expectations

1. Provide a minimum of 40 hours per week of work over 8 weeks for their medical student.
2. Include student in all relevant meetings and training sessions.
3. Guide student through the creation of an end-product which is suitable for presentation or publication. This can be a poster, abstract, manuscript, or book chapter. An end product must be completed by March and/or presented by May of the student's M4 year.
4. Meet with student quarterly while he/she remains actively engaged in the scholarly project. While these meetings are intended to be focused on the student's scholarly work, faculty mentors are encouraged to provide additional guidance professional life in

emergency medicine.

5. Inform STEM Director (Dr. Goel) of any issues regarding student professionalism or insufficient performance.

Curriculum Timeline by Academic Year

M1

1. Participation in Quarterly Didactic Activities
2. Participation in EMIG Activities
3. CEC Shadowing x 60 hours total combined across M1/M2 years (November – June)
4. COM/Community Service x 40 hours total combined across M1 - M4 years

M1-M2 Summer

1. Full-time Scholarly Project (40 hr/week x 8 weeks)
2. COM/Community Service

M2

1. Participation in Quarterly Didactic Activities
2. Participation in EMIG Activities
3. Completion of CEC Shadowing x 60 hours (November – June)
4. COM/Community Service
5. Work on EM Scholarly Project End-Product

M3

1. Participation in Quarterly Didactic Activities
2. Completion of COM/Community Service as necessary
3. Work on EM Scholarly Project End-Product

M4

1. Participation in Quarterly Didactic Activities
2. Completion of COM/Community Service as necessary
3. Submission and/or presentation of EM Scholarly Project End-Product

Program Withdrawal

While we certainly hope that all STEM students choose to pursue a career in emergency medicine, we realize that student interests change throughout medical school. Enrollment in the STEM Program is not binding, though students are encouraged to remain with the program for the educational benefit regardless of their future specialty choice. Students who wish to leave the STEM Program will meet with the STEM Director (Dr. Goel) to withdraw and discuss reasons for leaving. If a slot becomes available at the conclusion of M1 year, the spot will be offered to other applicants who were considered highly during the initial STEM application process. In the event of attrition beyond the M1/M2 summer, spots cannot be refilled due to the Scholarly Project requirement.