

Focused Advanced Specialty Track

RESEARCH

Director: Rich Rothman, MD, PhD
Professor and Vice Chair for Research
Department of Emergency Medicine
rrothma1@jhmi.edu

Number of residents you can accommodate: 3-4

Available Faculty Mentors:

Jeremiah Hinson, MD, PhD
Gabor Kelen, MD, FACEP
Scott Levin, PhD
Lauren Sauer, MS

Are you willing to have your track combined with another one?

Yes – the Research Track may be combined with another FAST track to provide research experience in a specific area of focus.

Sponsoring Institution: Johns Hopkins Hospital (Primary)

What other institutions participate in the Program:

- JHU SOM (multiple departments including Infectious Diseases, Cardiology, Pathology, Microbiology)
- JHU School of Public Health
- JHU Applied Physics Laboratory
- Hopkins CTSA (Center for Clinical and Translational Research)
- JHU Malone Institute
- Biomedical Engineering

Program Curriculum

Goal

To provide trainees with both the fundamental tools (skill set) and experiences required for launching a successful research career in academic emergency medicine.

Objectives

1. To develop skills in research design and methodology. This will include the fundamentals of formulating focused research questions, and to acquire basic skills required for designing and conducting a study including, but not limited to, critical literature review, generation of testable hypotheses, study logistics, design and management of data bases, and fundamental data

analysis, and preparation of budgets and grants (i.e. how to get funded for your research/project).

2. To gain supervised hands-on experience in the conduct of research. After designing a study, trainees will submit the application for conducting the investigation, and carry out all aspects of the study in close collaboration with the primary mentor. Training experience will include preparation of IRB application, oral and written presentation of the study to the ED research committee, preparation of the investigator site file, development of a data management strategy, enrollment of human subjects (as appropriate), and collection and analysis of data.
3. To acquire a solid foundation in written and verbal communication required for success as a clinician researcher. Practical one-on-one mentorship will be provided in preparation of abstracts for local and national meetings, preparation of oral presentations for local and national meetings, and preparation of manuscripts and grants for extramural funding.

Core Requirements

Research FAST participants will be required to:

1. Gain competence in clinical research design and methodology via successful completion of an approved year-long research training program. Approved training programs include:
 - Science of Clinical Investigation (SOCl) Training Program – JHU ICTR
 - Advanced Research Methodology Evaluation and Design (ARMED) – SAEM
 - Emergency Medicine Basic Research Skills (EMBRs) Workshop – ACEP
2. Develop a strong research mentorship team* that includes at least one faculty member with a track record of success in chosen area of focus
3. Develop a mentored research project proposal with well-defined hypotheses and specific aims that can be feasibly executed during the FAST year
4. Execute proposed research project (as principal investigator)
5. Present research findings at a regional or national meeting
6. Prepare and submit at least one research manuscript for peer-reviewed publication
7. Contribute to research education programming within the Johns Hopkins Department of Emergency Medicine in the role of a junior research faculty member

*Success in the Research Track is highly dependent on early identification of mentor(s) with overlapping research interests (specific area of study) and a track record of success in clinical research execution. Research Track faculty can assist residents in identification and vetting of potential mentors. *Mentorship team should be identified and approved no later than December of PGY3.* Progress in the Research FAST will be monitored quarterly through years 3 and 4 by your primary research mentor and reported to the Director with feedback and directed guidance provided.

Opportunities available to Residents

The focus of this track is to allow applicants to development fundamental research skills necessary for the successful transition to the role of early career investigator post training. The Research FAST is integral to the Department of Emergency Medicine research activities; as such, there are opportunities available in teaching, secondary data analysis, data collection, writing and publications. Research FAST residents also have the opportunity to participate in nationally funded research programs and attend and present at varied national or international meetings, based on areas of interest.

On-Going Projects

1. Health services
2. ED overcrowding

3. Machine learning and clinical decision making
4. Interface between ED and public health (e.g. substance abuse, violence)
5. Novel technology design and development
6. Global Health Research – South Africa, Uganda, India
7. Disaster preparedness
8. Infectious disease diagnosis and management
9. Clinical trials

Possible Future Projects

1. Clinical research in acute aspect of pulmonary, cardiology, critical care, and psychiatry
2. Other bench-to-bedside research

Milestones		Date Passed	Not Required
<i>Objective 1: Research Design and Methodology</i>	Complete a year-long clinical research design training program*		
	Develop a mentored research project proposal		
	Attend at least 50% of weekly research meetings*		
	Present research proposal in in weekly research meetings		
	Develop a study budget		
	Identify a research study site and local stakeholders		
	Complete a Grant Writing Course *		
<i>Objective 2: Experience in the Conduct of Research</i>	Prepare and submit IRB application		
	Develop data collection/management strategy		
	Execute research project		
	Perform data analysis		
	Generate data tables and figures		
<i>Objective 3: Foundation in written and verbal communication</i>	Present Research at Emergency Medicine Research Day		
	Manuscript submission		
	Abstract presentation at a national meeting		
	Apply for an external grant (optional)		
	Manuscript publication (optional)		

*Denotes coursework/training