

Kristin H. Dwyer, MD, MPH  
CURRICULUM VITAE

Business Address: 55 Claverick Street, 2<sup>nd</sup> Floor  
Providence RI 02903  
Telephone: 617 763 3959  
Email: [Kristin\\_dwyer@brown.edu](mailto:Kristin_dwyer@brown.edu)

**EDUCATION**

Undergraduate                      Dartmouth College, Psychology Major  
Bachelor of Arts 1998  
Hanover, NH  
(September 1994-July 1998)

Medical School                      Albany Medical College  
Doctor of Medicine, 2010  
Albany, NY  
August 2006-May 2010  
Honors: Graduated top third

Graduate School                      Harvard School of Public Health  
Masters in Public Health, 2016  
Concentration in Quantitative Methods  
Boston, MA  
June 2014-May 2016

**POSTGRADUATE TRAINING**

Residency                              Boston Medical Center  
Emergency Medicine Residency  
One Boston Medical Center Pl. Boston, MA  
July 2010-June 2014

Fellowship                              Brigham and Women's Hospital  
Fellowship in Emergency Ultrasound  
75 Frances St. Boston, MA  
July 2014-June 2016

**OTHER EDUCATION/TRAINING**

|                   |   |
|-------------------|---|
| Leadership Course | Brown Physicians Inc. Leadership Academy<br>Providence, RI<br>2020-2021 |
| ABEM Certified    | Advanced Emergency Medicine Ultrasonography FPD<br>2022                 |

### **POSTGRADUATE HONORS AND AWARDS**

#### **Resident of the Year, MACEP, 2014**

Recognizes and honors an outstanding emergency medicine resident or emergency medicine fellow in Massachusetts whose combination of clinical promise, leadership, ability to think outside the box and commitment to their patients and emergency medicine separate them from the majority.

#### **David A. Frommer Award for Academic Excellence, Boston Medical Center. 2014**

The David Frommer award is given in recognition of research excellence and outstanding academic achievement by a graduating fourth year emergency medicine resident (or residents). The award is given annually in memory of Dr. David Frommer, a faculty member at Boston City Hospital who was committed to social justice and was renowned as a gifted clinician, researcher and scholar.

#### **Innovation in Education Award, University Emergency Medicine Foundation. 2017**

This award recognizes the faculty member who has demonstrated innovative and effective new approaches to emergency medicine education.

#### **SAEMMY Research Award Nominee: Top 5 Prospective Research Articles, SAEM-AEUS. 2018**

The AEUS SAEM SAEMMY research award identifies the top five POCUS investigators each year by publication category. Five authors are nominated per research category and one author receives the award.

#### **SAEMMY Research Award: Best Cross-Sectional Research Article, SAEM-AEUS. 2019**

The AEUS SAEM SAEMMY research award identifies the top five POCUS investigators each year by publication category. Five authors are nominated per research category and one author receives the award.

#### **Outstanding Contribution to Education Award, Brown Emergency Medicine. 2019**

This award recognizes the faculty member who has demonstrated an outstanding commitment to residency or fellowship education.

**Dean's Excellence in Teaching Award, Brown Medical School. 2019**

The Dean's Excellence in Teaching Award recognizes Warren Alpert Medical School faculty members who are exceptional teachers and mentors.

**SAEMMY Research Award Nominee: Top 5 Prospective Research Articles, SAEM-AEUS. 2020**

The AEUS SAEM SAEMMY research award identifies the top five POCUS investigators each year by publication category. Five authors are nominated per research category and one author receives the award.

**Dean's Excellence in Teaching Award, Brown Medical School. 2020**

The Dean's Excellence in Teaching Award recognizes Warren Alpert Medical School faculty members who are exceptional teachers and mentors.

**Jacek Franaszek, MD Outstanding Educator Award, Brown Emergency Medicine. 2021**

The faculty member who receives this award exemplifies the highest standards and quality as a medical educator, and has made a substantial impact in emergency medicine education at all levels.

**Outstanding Service Recognition during the COVID-19 Pandemic, Brown Emergency Medicine. 2021**

In grateful appreciation for your service and significant contributions during this unprecedented time in our history. Brown Emergency Medicine recognizes your strength, dedication, compassion, and resilience while providing exceptional emergency medical care to the people of Rhode Island and beyond.

**Dean's Excellence in Teaching Award, Brown Medical School. 2021**

The Dean's Excellence in Teaching Award recognizes Warren Alpert Medical School faculty members who are exceptional teachers and mentors.

**SAEMMY Research Award Nominee: Top 5 Prospective Research Articles, SAEM-AEUS. 2021**

The AEUS SAEM SAEMMY research award identifies the top five POCUS investigators each year by publication category. Five authors are nominated per research category and one author receives the award.

Educational Excellence Award. Rhode Island ACEP. March 2023

**PROFESSIONAL LICENSES AND BOARD CERTIFICATION**

|              |   |
|--------------|---|
| 2014-2016    | Massachusetts Full Medical License #258075                      |
| 2014-2016    | Massachusetts Controlled Substances Registration<br>#MD0944961A |
| 2014-Current | Registered DEA Assignment #4399021                              |
| 2015-Current | ABEM Board Certified, Emergency Medicine                        |
| 2016-Current | Rhode Island Full Medical License #MD15314                      |

**ACADEMIC APPOINTMENTS**

|                     |   |
|---------------------|---|
| July 2023-Present   | Associate Professor, Teaching Scholar Track<br>Department of Emergency Medicine<br>Warren Alpert Medical School of Brown University |
| July 2016-June 2023 | Assistant Professor, Teaching Scholar Track<br>Department of Emergency Medicine<br>Warren Alpert Medical School of Brown University |
| July 2014-June 2016 | Clinical Instructor<br>Department of Emergency Medicine<br>Harvard Medical School   |

**HOSPITAL APPOINTMENTS**

|                     |   |
|---------------------|---|
| July 2014-June 2016 | Attending Physician<br>Brigham and Women's Hospital<br>Department of Emergency Medicine                                 |
| July 2014-June 2016 | Attending Physician, Per Diem<br>Boston Medical Center<br>Department of Emergency Medicine                              |
| July 2015-June 2016 | Attending Physician, Per Diem<br>Steward Health Care<br>Department of Emergency Medicine<br>Carney and Quincy Hospitals |
| July 2016-Present   | Attending Physician<br>Brown Emergency Medicine<br>Department of Emergency Medicine                                     |

Rhode Island Hospital, The Miriam Hospital and Newport Hospital

**DEPARTMENTAL LEADERSHIP APPOINTMENTS**

2018-Present                      BrownSound Emergency Ultrasound Section Blog Editor,  
Brown Emergency Medicine, Department of Emergency  
Medicine

2019-Current                      Core Education Faculty, Brown Emergency Medicine  
Residency

**NATIONAL APPOINTMENTS**

2015-2018                      **Emergency Ultrasound Global Health Subcommittee  
Co-Chair**  
American College of Emergency Physicians, Emergency  
Ultrasound Section

2019-2021                      **Secretary**  
Society for Academic Emergency Medicine, Academy of  
Emergency Ultrasound

2021-Current                      **Treasurer**  
Society of Clinical Ultrasound Fellowships

2023-Current                      **Financial Committee Director**  
Society of Clinical Ultrasound Fellowships

**AREA OF FOCUS LEADERSHIP APPOINTMENTS**

2016-Present                      **Emergency Ultrasound Fellowship Director**  
Department of Emergency Medicine, Warren Alpert  
Medical School of Brown University

- Restarted the Brown Emergency Medicine Ultrasound Fellowship
- Developed a standardized fellowship curriculum with the flexibility to accommodate learners with various

goals (eg administrative, educational or research focuses)

- Train one clinical ultrasound fellow each year. Includes graduates from Emergency Medicine, Internal Medicine and Medicine/Pediatric residencies, and from Pediatric Emergency Medicine fellowships.
- Help develop and supervise fellow's required academic project
- Scan clinically with fellows and provide quality feedback on scans
- Obtained 3-year EUFAC accreditation for the Brown EM Ultrasound Fellowship, which allows for graduates to sit for the ABEM focused practice designation in advanced emergency medicine ultrasound (AEMUS).

2017-Current

**Emergency Ultrasound BAEMA Fellowship**

Department of Emergency Medicine, Warren Alpert Medical School of Brown University

- BAEMA Ultrasound Fellowship Director 2018-2020, Assistant Director 2020-Current
- Train non-clinical international emergency ultrasound fellows with both emergency and pediatric backgrounds (five graduates to date)
- Help develop and supervise fellow's required academic project
- Scan clinically with fellows and provide quality feedback on scans
- Assist with drafting complete series of bedside ultrasound presentations and image banks for fellows to develop curriculum to initiate ultrasound training programs at their home institution

2017-2018

**Emergency Ultrasound Associate Division Director**

University Emergency Medicine Foundation, Department of Emergency Medicine

- Assist the Director of Emergency Ultrasound in overseeing ultrasound programs, research, and educational activities at all BEM practice sites
- Assist emergency ultrasound staff at each ED site to provide support for all aspects of the program including

resident rotation, journal clubs and quality assurance of scans performed

2018-Present

**Emergency Ultrasound Division Director**

Brown Emergency Medicine, Department of Emergency Medicine

- Oversee the education of emergency ultrasound for medical students, residents, fellows, faculty and mid-level providers in the emergency department
- Provide quality assurance and image review for all bedside ultrasound scan interpretations submitted for review (~14K ultrasounds performed in the ED each year)
- Division leader for seven emergency medicine faculty and one ultrasound technologist. Grew division to ten faculty starting July 2022
- Overhauled the clinical ultrasound workflow from designing bedside ultrasound orders and procedure notes within Epic, to obtaining a new image storage solution
- Manage annual division budget
- Developed departmental ultrasound credentialing policies
- Supervised multiple emergency residents on ultrasound QI projects with the aim to improve patient care with bedside ultrasound
- Work with both Lifespan and Brown Emergency Medicine to ensure proper billing for bedside ultrasounds
- Evaluate and distribute ultrasound diagnostic and procedural guidance metrics quarterly to all attending providers
- Manage life cycle for probe and machine purchase at all Emergency Department locations

**UNIVERSITY/DEPARTMENT COMMITTEES**

2018-2019

Member, Salary Equity Taskforce, Brown Emergency Medicine, Department of Emergency Medicine

|              |  |
|--------------|--|
| 2018-2020    | Member, Revenue Generation Committee, Brown<br>Emergency Medicine, Department of Emergency Medicine  |
| 2018-Current | Member, Fellowship Director Committee, Brown<br>Emergency Medicine, Department of Emergency Medicine   |
| 2019-Current | Member, Resident Advisory Committee, The Warren<br>Alpert Medical School of Brown University, Emergency<br>Medicine Residency                            |
| 2019-Current | Member, Education Section, Brown Emergency Medicine,<br>Department of Emergency Medicine   |
| 2019-Current | Fellowship Interviewer, Brown Emergency Medicine,<br>Department of Emergency Medicine  |
| 2020-Current | Member, Clinical Operations Committee, Brown<br>Emergency Medicine, Department of Emergency Medicine   |
| 2020-Current | Member, Chief Resident Selection Committee, Brown<br>Emergency Medicine, Department of Emergency Medicine  |
| 2021-Current | Member, Brown Emergency Medicine Residency Interview<br>Committee, The Warren Alpert Medical School of Brown<br>University, Emergency Medicine Residency |
| 2021-Current | Faculty Interviewer, Brown Emergency Medicine,<br>Department of Emergency Medicine   |
| 2022         | Residency Program Director Search Committee, Brown<br>Emergency Medicine, Department of Emergency Medicine   |
| 2020-2023    | Faculty Evaluation Committee Brown Emergency<br>Medicine, Department of Emergency Medicine   |

**MEMBERSHIP IN SOCIETIES**

|           |  |
|-----------|--|
| 2010-2016 | Member, Massachusetts College of Emergency Physicians<br>• Lead Resident Representative, 2013-2014 |
| 2010-2016 | Member, Massachusetts Medical Society  |



- 2010-Current American College of Emergency Physicians
- Member, ACEP Emergency Ultrasound Section 2010-Current
  - Emergency Ultrasound Global Health Subcommittee Chair 2015-2018
- 2010-Current Member, Society for Academic Emergency Medicine
- Member of SAEM Academy of Emergency Ultrasound 2010-Current
  - Resident Abstract Reviewer, 2013
  - Assist with Sonogames Planning for Annual National Meeting, 2018-Current.
    - R2 Judge, R2 Moderator, R2 Station Lead, R0 Question writer
  - SAEM AEUS Secretary, 2019-2021
    - Organized a photo shoot to create a POCUS image bank of stock photos for international SAEM AEUS membership
    - Served on committee to revamp SAEM AEUS Ultrasound Narrated Lecture Series and publish a series of didactics and quizzes. Educational materials available for US and international learners
  - SAEMMY award emergency ultrasound literature reviewer 2023
  - Sonogames Round Zero Question Writer 2023
- 2016-Current Member, Society for Clinical Ultrasound Fellowship
- Treasurer, 2021-Current
  - SCUF Pre-Conference Planning Committee, 2022
  - SCUF Pre-Conference Planning Committee, 2023
  - SCUF Conference Planning Committee, 2023
  - SCUF Conference Speaker Coach, 2023
  - SCUF Financial Committee Director
- 2016-Current Member, Rhode Island College of Emergency Physicians
- 2016-Current Member, Rhode Island Medical Society

**PUBLICATION LIST**

**ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS**

1. **Dwyer K**, Walley AY, Langlois BK, Mitchell PM, Nelson KP, Cromwell J, Bernstein E. A Brief Report: Opioid Education and Nasal Naloxone Rescue Kits in the Emergency Department. *Western Journal of Emergency Medicine*, April 2015.
2. Samuels L, **Dwyer K**, Baird J, Mello M, Kellogg A, Bernstein E. Emergency Department Opioid Harm Reduction: assessing provider willingness. *Academic Emergency Medicine*, March 2016
3. **Dwyer K**, Rempell J. Images in Emergency Medicine: Young Woman with a Fever and Chest Pain. *Western Journal of Emergency Medicine*, March 2016. Vol. 17 Issue 2
4. Landry A, Eicken J, **Dwyer K**, Hoyler J, Henwood T, Frasure S, Kimberly H, Stone, MB. Ten Strategies for Optimizing Ultrasound Instruction for Group Learning. *M.Cureus*. 2017 Apr 2;9(4):e1129. Doi:10.7759/cureus.1129.
5. Pearlumutter MD, **Dwyer KH**, Burke L, Rathlev N, Maranda L, Volturo G. Analysis of Emergency Department Length of Stay for Mental Health Patients at 10 Massachusetts Emergency Departments. *Annals of Emergency Medicine*, August 2017. Volume 70, Issue 2, Pages 193–202.
6. **Dwyer KH**, Rempell J. A Case of Syncope. *WJEM* Oct 2017. CPC-EM: VOLUME 1 ISSUE 4
7. **Dwyer K**, Rempell J, Stone M. Point-of-Care Ultrasound for the Diagnosis of Centrally Located Pulmonary Embolisms. *Am J Emerg Med* 2017 Nov.
8. Proplesch M, Merz A, Claggett B, **Dwyer KH**, Crousillat DR, Lau ES, Silverman MB, Peck J, Rivero J, Hohenstein C, Cheng S, Platz E. Right atrial structure and function in patients with hypertension and with chronic heart failure. *Echocardiography Journal* 2018
9. **Dwyer KH**, Merz AA, Lewis E, Claggett B, Crousillat DR, Lau ES, Silverman MB, Peck J, Rivero J, Cheng S, Platz E. Pulmonary congestion by lung ultrasound in ambulatory patients with heart failure with reduced or preserved ejection fraction and hypertension. *Journal of Cardiac Failure*. 2018
10. Daley JI, **Dwyer KH**, Grunwald Z, et al. Increased Sensitivity of Focused Cardiac Ultrasound for Pulmonary Embolism in Emergency Department Patients With Abnormal Vital Signs. *Academic Emergency Medicine*. September 2019
11. Brainin P, Claggett B, Lewis E, **Dwyer KH**, Merz AA, Silverman M, Swamy V, Biering-Sorensen T, Rivero J, Cheng S, McMurray JJ, Solomon SD, Platz E. Body mass index and B-lines on lung ultrasonography in chronic and acute heart failure. *ESC Heart Failure*. 2020. <https://doi.org/10.1002/ehf2.12640>
12. Schechter-Perkins E, **Dwyer KH**, Amin A, Tyler MD, Liu T, Nelson KP, Mitchell PM. Loop Drainage is Non-Inferior to Traditional Incision and Drainage of Cutaneous Abscesses in the Emergency Department. *Acad. Emerg. Medicine*. 14 May 2020. <https://doi.org/10.1111/acem.13981>

13. ALSadhan N, Liebmann O, **Dwyer KH**. Point-of-Care-Ultrasound Identification of Iliopsoas Abscess in Emergency Department: A Case Report. Clin Pract Cases Emerg Med. 2020 Aug; 4(3): 404–406.
14. Gaspari R, Gleeson T, Alerhand S, Caputo W, Damewood S, Dicroce C, **Dwyer K** et al. A Multicenter, Prospective Study Comparing Subxiphoid and Parasternal Views during Brief Echocardiography, Effect on Image quality, Acquisition Time and Visualized Anatomy. Journal of Emergency Medicine. 2021
15. Schick AL, Kaine JC, Al-Sadhan NA, Lin T, Baird J, Bahit K, Dwyer KH. Focused cardiac ultrasound with mitral annular plane systolic excursion (MAPSE) detection of left ventricular dysfunction. Accepted for publication to AJEM

#### OTHER NON-PEER REVIEWED PUBLICATIONS

1. **Dwyer K**. Bacterial Meningitis. Case Management Series. Massachusetts College of Emergency Physicians News, Oct. 2012, 37 (2), p 9-12.
2. **Dwyer K**. A Life Saved: Will OEND and Rx for Naloxone Truly Improve Outcomes? EM Advocate, Issue #2. July 2013.
3. Dworkis D, Lucarelli R, **Dwyer K**. Availability of Intranasal Naloxone Rescue Kits in Outpatient Pharmacies in Massachusetts. Massachusetts College of Emergency Physicians News, Sep. 2014, 39 (1), p 7-8
4. Samuels EA, Aks S, Bernstein E, Choo E, **Dwyer K**, Green T, Hack JB, Juurlink D, Mello MJ, Ranney M, Walley AY, Whiteside L. Opinion: Prehospital Naloxone Administration Is Safe. ACEP Now: Vol. 34 – No. 04 – April 2015.
5. Henwood T, **Dwyer K**. International Ultrasound. ACEP Ultrasound Newsletter August 2016.
6. Gandhi K, **Dwyer K**, Henwood T. International Ultrasound: Global Ultrasound with Local Relevance – Rheumatic Heart Disease. ACEP Ultrasound Newsletter March 2017.
7. Wanjiku GW, Stieger R, **Dwyer K**, Henwood T. International Ultrasound: Hepatic Vena Cava Syndrome. ACEP Ultrasound Newsletter August 2017.
8. **Dwyer K**, Henwood T. International Ultrasound: Faculty Spotlight on Dr Alex Brevil. ACEP Ultrasound Newsletter April 2018.
9. **Dwyer K**, Henwood T. International Ultrasound: Spotlight on Jacob Schoeneck, MD, Yale Emergency Medicine Residency. ACEP Ultrasound Newsletter April 2018.
10. Wanjiku GW, Wu S, **Dwyer K**, Henwood, P. Use of handheld ultrasound devices in rural Kenya: Opportunities and challenges. ACEP Ultrasound Newsletter December 2018.

11. Jang T, Boulger C, Carnell J, **Dwyer K**, Huang R, Sita-LaCasse E, Stolz L. SARS-CoV2/COVID19 Lung ultrasound Recommendations. SAEM Pulse May-June 2020, p46. [https://issuu.com/saemonline/docs/saem\\_pulse\\_may-june\\_20/46](https://issuu.com/saemonline/docs/saem_pulse_may-june_20/46)

### BOOK CHAPTERS

1. Dwyer K, Creswell JS. Upper Respiratory Infections. *Scientific American Emergency Medicine*, 2015.
2. Dwyer KH. Ultrasound for Diagnosis of Pulmonary Hypertension. *Practical Guide to Critical Care Ultrasound*, ACEP Ultrasound eBook. 2017
3. Dwyer KH. Ultrasound for Venous Pacemaker Placement. *Practical Guide to Critical Care Ultrasound*, ACEP Ultrasound eBook. 2017
4. Dwyer KH. *International Renal Emergency Ultrasound 2018*
5. AlSadhan N, Dwyer K. The Pre-Clerkship Guide. Ultrasound Basics. 2020
6. AlSadhan N, Dwyer K. The Pre-Clerkship Guide. Point-of-Care Ultrasound. 2020
7. Nouredine B, Dwyer, KH. Echocardiography and Ultrasonography in the ICU: A Comprehensive Text. Procedural Guidance: Abdomen. (In Process)
8. Dwyer, KH. EMRA's Block Party. Ultrasound Guided Median Nerve Block. (In Process)
9. Dwyer, KH. EMRA's Block Party. Ultrasound Guided Ankle Block. (In Process)
10. Dwyer, KH. EMRA's Block Party. Landmark Based Hand Blocks. (In Process)

### SCHOLARLY WORK PUBLISHED IN OTHER MEDIA

1. "Brown Sound: Pericardial Tamponade" December 2016. Editor <http://brownemblog.com/blog-1/2016/12/19/ultrasound-case-of-the-month-dyspnea>
2. "Brown Sound: PTA" May 2017. Editor <http://brownemblog.com/blog-1/2017/3/21/ultrasound-case-of-the-month>
3. Dwyer K, Liebmann O. "Brown Sound: Psoas Abscess" March 2017. <http://brownemblog.com/blog-1/2017/3/21/ultrasound-case-of-the-month>
4. "Brown Sound: AAA" April 2017. Editor <http://brownemblog.com/blog-1/2017/5/11/ultrasound-case-of-the-month>
5. "Brown Sound: Ruptured Ovarian Cyst". June 2017. Editor <http://brownemblog.com/blog-1/2017/6/30/ultrasound-case-of-the-month>

6. “Brown Sound: Small Bowel Obstruction”. August 2017. Editor  
<http://brownemblog.com/blog-1/2017/9/12/ultrasound-case-of-the-month>
7. “Brown Sound: Pericardial Effusion”. October 2017. Editor  
<http://brownemblog.com/blog-1/2017/10/30/ultrasound-case-of-the-month>
8. “Brown Sound: Saddle PE”. December 2017. Editor  
<http://brownemblog.com/blog-1/2017/12/14/ultrasound-case-of-the-month>
9. “Brown Sound: AAA Repair”. August 2018 <http://brownemblog.com/blog-1/2018/8/13/ultrasound-case-of-the-month-august-2018> Editor
10. “Brown Sound: Firecracker vs Testicle.” March 2018. Editor  
<http://brownemblog.com/blog-1/2018/3/5/brown-sound-fireball-pocus-case-of-the-month>. Editor
11. “Brown Sound: Banging Bungies, Viewing Traumatic Eye Injuries Through a New Lens” March 2019. Editor
12. “Brown Sound: Small Bowel Obstruction” April 2019 Editor  
<http://brownemblog.com/blog-1/2019/3/25/sbo>
13. “Brown Sound: AAA The Silent Killer” May 2019. Editor  
<http://brownemblog.com/blog-1/2019/5/13/ultrasound-case-of-the-month-a-silent-killer>
14. “Brown Sound: Idiopathic Intracranial Hypertension” October 2019. Editor.  
<http://brownemblog.com/blog-1/2019/9/16/idiopathic-intracranial-hypertension>
15. “Brown Sound: A Bowel inside a Bowel- Intussusception” September 2019. Editor <http://brownemblog.com/blog-1/2019/9/16/intussusception>
16. “Brown Sound: Hydatiform Mole” August 2020. Editor  
<http://brownemblog.com/blog-1/2020/7/21/us-case-of-the-month-no-title-in-document>
17. “Brown Sound: Almost Scared to Death by Takotsubo Cardiomyopathy” January 2021. Editor <http://brownemblog.com/blog-1/2020/12/15/takotsubo-cardiomyopathy?rq=almost>
18. “Brown Sound: Utility of POCUS in Evaluating for Pulmonary Embolism” March 2021. Editor <http://brownemblog.com/blog-1/2021/2/19/utility-of-pocus-in-evaluating-for-pulmonary-embolism?rq=pulmonary%20em>
19. Kolbe K, Dwyer K. “Brown Sound: Disparities in diagnostic imaging in the ED: a brief review of recent literature from 2018-2022” December 2021
20. Nims, J, Dwyer K. ”Brown Sound: Volume Assessment Using POCUS in the Emergency Department” January 2022
21. Wasserman P, Dwyer K. “Brown Sound: Femoral Nerve Block” January 2022
22. Shembo N, Dwyer K. Brown Sound: Hydronephrosis and Stones. January 2022
23. Cameron-Burr K, Dwyer K. Brown Sound: Soft tissue infections. June 2022

24. Cook M, Dwyer K. Brown Sound: Molar Pregnancy: Diagnosis of Hydatidiform Mole Using Bedside Emergency Ultrasound. June 2022
25. Wilson C, Dwyer K. BrownSound: EPSS for ejection fraction estimation. June 2022
26. Lowenhaar G, Dwyer K. BrownSound Retrobulbar Hematoma, When To Cut? June 2022
27. Gall B, Dwyer K. BrownSound Calciphylaxis. January 2023
28. Ezemma O, Dwyer K. BrownSound Necrotizing Fasciitis, May 2023

#### PUBLICATIONS IN PROCESS

1. Schick A, Kaine J, Baird J, Bahit K, **Dwyer KH**. Focused bedside ultrasound evaluation including mitral annular plane systolic excursion for suspected left ventricular dysfunction. Submitting to Academic Emergency Medicine 2022
2. Schick A, Kaine J, Baird J, Bahit K, **Dwyer KH**. Lung and cardiac ultrasound (LuCUS) protocol including mitral annular plane systolic excursion for suspected acute decompensated heart failure. Submitting to Academic Emergency Medicine 2022
3. Kaine J, Schick A, Baird J, Bahit K, **Dwyer KH**. Test Characteristics of Carotid Ultrasound for Volume Status Assessment in the Emergency Department Patient Undergoing Resuscitation. Submitting to Academic Emergency Medicine 2022
4. Zimmerman, B.....Dwyer KH. Multicenter Study Evaluating Sex and Gender in Bedside Cardiac Ultrasound.

#### RESEARCH IN PROCESS

1. Sex and Gender in Bedside Cardiac Ultrasound. Principal Investigator for IRB approved retrospective multi-center study evaluating the impact of patient gender on quality of bedside echocardiogram.
2. Social Determinants of POCUS in the Emergency Department. Senior Investigator for IRB approved retrospective study evaluating the impact of social determinants on POCUS for patients presenting to the Emergency Department with Shortness of Breath or Chest Pain.
3. Sonographer Educator: Evaluation of a novel education interventions. Principal Investigator for IRB approved prospective study evaluating the utility of a sonographer educator in the Emergency Department.
4. Artificial Intelligence for Automated Lung Ultrasound Interpretation. Co-investigator for multi-center study aiming to create software using artificial intelligence (AI) to automatically interpret lung ultrasound findings (LUS).

ABSTRACTS

1. **Dwyer K**, Walley AY, Sorensen-Alawad A, Langlois BK, Mitchell P, Lin S, Strobel S, Cromwell J, Bernstein E. Opioid Education and Nasal Naloxone Distribution in the Emergency Department. Poster presented at NERDS 2013. 17<sup>th</sup> Annual New England Regional SAEM Meeting; April 3, 2013; Providence, RI.
2. Walley AY, Sorensen-Alawad A, **Dwyer K**, Langlois BK, Mitchell P, Lin S, Strobel S, Cromwell J, Bernstein E. Nasal Naloxone Rescue Kits in an Emergency Department Overdose Education Program. Abstract presented at CPDD 2013. 75<sup>th</sup> Annual College on Problems of Drug Dependence; June 15-20, 2013; San Diego, CA.
3. **Dwyer K**, Walley AY, Sorensen-Alawad A, Langlois BK, Mitchell P, Lin S, Strobel S, Cromwell J, Bernstein E. Opioid Education and Nasal Naloxone Distribution in the Emergency Department. Abstract presented at ACEP 2013. ACEP Scientific Assembly; October 14-17, 2013; Seattle WA.
4. **Dwyer K**, Samuels EA, Moore EL, Langlois BK, Mitchell P, Grimsman J, Bernstein E. Physician Attitudes and Perceived Barriers to Prescribing Nasal Naloxone Rescue Kits in the Emergency Department. Abstract presented at ACEP 2013. ACEP Scientific Assembly; October 14-17, 2013; Seattle WA.
5. **Dwyer K**, Amin A, Tyler M, Mitchell P, Langlois B, Nam C, Monroe E, Nelson K, Schechter-Perkins E. Loop Drainage vs. Incision & Drainage for Management of Cutaneous Abscess in the Emergency Department: A Non-inferiority Randomized Clinical Trial. Lightning oral presented at NERDs 2014. 18<sup>th</sup> Annual New England Regional SAEM Meeting; March 26, 2014; New Haven, CT.
6. Grimsman J, Samuels EA, **Dwyer K**, Kellogg A, Bernstein E, Mello M. EM Providers' Perceived Barriers to Prescribing Nasal Naloxone Rescue Kits in the Emergency Department. Poster presented at NERDs 2014. 18<sup>th</sup> Annual New England Regional SAEM Meeting; March 26, 2014; New Haven, CT.
7. Merz A, **Dwyer K**, Peck J, Rivero J, Cheng S, Platz E. Diastolic Dysfunction in Ambulatory Heart Failure Patients Reporting Exertional Dyspnea. Presented at American Society of Echocardiography 2015 Annual Meeting; June 12-16; Boston, MA.
8. **Dwyer K**, Rempell J and Stone M. Diagnosing Centrally Located Pulmonary Embolisms in the Emergency Department using Point-of-Care Ultrasound. Abstract Presented. ACEP Scientific Assembly; October 2016; Las Vegas, NV.

9. Daley J, **Dwyer K**, Stone, MB, Moore, C. The Use of Tricuspid Annular Plane Systolic Excursion (TAPSE) to Rule-Out Pulmonary Embolism in the Tachycardic Emergency Department Patient. Abstract Presented. ACEP Scientific Assembly; October 2016; Las Vegas, NV.
10. Chowa P, **Dwyer K**, Stone M, Henwood, P. Prevalence of Right Heart Strain in Patients with Massive Pulmonary Embolism: A Retrospective Review. Abstract accepted for presentation. ACEP Scientific Assembly; October 2016; Las Vegas, NV.
11. Merz A, **Dwyer K**, Crousillat D, Lau E, Rivero J, Cheng S, Platz E. Sex-specific Lung Ultrasound Findings in Ambulatory Heart Failure Patients. Abstract accepted for presentation at American Society of Echocardiography; June 2017; Baltimore, MD.
12. Brainin P, Claggett B, **Dwyer K**, Merz A, Silverman M, Swamy V, Biering-Sorenson T, Rivero J, Lewis E, Cheng S, McMurray J, Solomon S and Platz E. Impact of body mass index on B-lines by lung ultrasonography in patients with acute and chronic heart failure. Accepted for presentation at the European Society of Cardiology; May 2018; Viena, Austria.
13. Daley JI, **Dwyer KH**, Grunwald Z, Shaw DL, Stone MB, Schick A, Vrablik M, M. Hall MK, MS, Hall J, Liteplo AS, Haney RM, Hun N, Liu R, Moore CL. Increased Sensitivity of Focused Cardiac Ultrasound for Pulmonary Embolism in Emergency Department Patients with Abnormal Vital Signs Abstract. Presented as lightning oral at SAEM; July 2019; Las Vegas, NV.
14. Schick A, Al-Sadhan N, Kaine J, **Dwyer K**. Use of Mitral Valve Annular Plane Systolic Excursion (MAPSE) to estimate LV systolic function. Abstract presented at SAEM Annual Meeting; May 12-15, 2020; Denver, CO.
15. Schick A, Al-Sadhan N, Kaine J, **Dwyer K**. Focused cardiopulmonary US with mitral annular plane systolic excursion (MAPSE) to diagnose heart failure. Abstract presented at SAEM Annual Meeting; May 12-15, 2020; Denver, CO.
16. Mehanian C, Gregory C., Hersh A, Kessler D, Wilson B, Zhu M, Madar C, Forbes D, Shahan B, Shupp J, Johnson L, Kulhare S, Zheng X, Millin, R, Banik R, Lazar J, Halse A, Jones J, Cao A, Hostetler K, Zhang Y, Weimersheimer P, Dwyer K, Avila J, Gregory K. Automated, Rapid, Point-of-Care Lung Ultrasound Interpretation for Pneumothorax, Pleural Effusion and Pneumonia Detection using Artificial Intelligence/Deep Learning: Latest Algorithms and Results. Accepted poster presentation at 2020 Military Health System Research Symposium
17. Schick AL, Kaine J, AlSadhan N, Baird J, Lin T, Bahit K, Dwyer K. Abnormal Left Ventricular Ejection Fraction detection with Mitral Valve Annular Plane Systolic Excursion (MAPSE). Accepted for Oral Presentation at SAEM; May 2022; New Orleans, LA



18. Schick AL, Kaine J, AlSadhan N, Baird J, Lin T, Bahit K, Dwyer K. Lung and Cardiac Ultrasound with Mitral Annular Plane Systolic Excursion (MAPSE) to Diagnose Heart Failure. Accepted for Oral Presentation at SAEM; May 2022; New Orleans, LA
19. Knopov A, Hess S, Musits A, Petrone G, Clyne B, Baird J, Meran R, Dwyer KH. Sonographer Educator in the Emergency Department: Evaluation of a Novel Education Intervention. Abstract accepted for presentation at Council of Residency Directors in Emergency Medicine (CORD EM); March 2023; Las Vegas NV
20. Zimmerman B, Madsen T, Giampaolo G, Chuyun X, Rogers J, Davenport H, Boulger C, Prats M, Wu A, Leo M, Pare J, Muruganandan M, Kaine J, Brenner D, Soriano P, Villarroel NA, Schroeder ML, Stokes N, Tyson A, Gleeson T, Hill M, McGregor A, Dwyer KH. Multisite Study on Sex and Gender Equity in Focused Cardiac Ultrasound. Abstract accepted. SAEM; May 2023; Austin TX
21. Zimmerman B, Madsen T, Giampaolo G, Chuyun X, Rogers J, Davenport H, Boulger C, Prats M, Wu A, Leo M, Pare J, Muruganandan M, Kaine J, Brenner D, Soriano P, Villarroel NA, Schroeder ML, Stokes N, Tyson A, Gleeson T, Hill M, McGregor A, Dwyer KH. Multisite Study on Sex and Gender Equity in Focused Cardiac Ultrasound. Accepted as Plenary. SAEM NERDS; April 2023; Worcester MA
22. Knopov A, Hess S, Musits A, Petrone G, Clyne B, Baird J, Meran R, Dwyer KH. Sonographer Educator in the Emergency Department: Evaluation of a Novel Education Intervention. Accepted as Poster. SAEM NERDS; April 2023; Worcester MA
23. Hess S, Knopov A, Musits A, Petrone G, Clyne B, Baird J, Meran R, Dwyer KH. Sonographer Educator in the Emergency Department: A novel education intervention. Accepted as Poster. SAEM NERDS; April 2023; Worcester MA

## INVITED PRESENTATIONS

### LOCAL

1. Scribe Ultrasound Workshop Organized and led a bedside ultrasound training session (FAST, echocardiography, lung and abdominal applications) with a mix of didactics and hands-on practice for the Brown Emergency Medicine Scribes. December 2017
2. Faculty Know and Grow Workshop, Brown Emergency Medicine. Lectured on cardiac ultrasound and provided hands on ultrasound instruction. December 2017

3. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. July 2017
4. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Provided didactics on Point-of-Care Echocardiography and Lung Ultrasound in the Emergency Department. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. July 2018
5. Nursing Workshop, Miriam Hospital. Developed curriculum for a multiple-day Nursing Workshop for US guided IV placement. September 2018
6. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Hired ultrasound models, secured space and organized curriculum. Provided didactics on Point-of-Care Echocardiography and Lung Ultrasound in the Emergency Department. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. July 2019
7. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Hired ultrasound models, secured space and organized curriculum. Provided didactics on Point-of-Care Echocardiography and Lung Ultrasound in the Emergency Department. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. July 2020
8. Invited Lecturer for the Brown Global Emergency Medicine Division on Ultrasound as a Diagnostic Tool in Resource Limited Settings. August 2020
9. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Provided didactics on Point-of-Care Echocardiography and Lung Ultrasound in the Emergency Department. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. July 2021
10. Brown Emergency Medicine Faculty Ultrasound Workshop. Hired ultrasound models, secured space and organized curriculum. Provided multiple didactics and led hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. January 7, 2022
11. Brown Emergency Medicine Faculty Ultrasound Workshop. Hired ultrasound models, secured space and organized curriculum. Provided multiple didactics and led hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. January 27, 2022
12. Ultrasound Training Session: FAST, Cardiac, Lung and US procedural guidance training course. Johnson & Wales University, Center for Physician Assistant Studies. April 2022
13. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Provided didactic on Point-of-Care Echocardiography in the Emergency Department. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. June 2022
14. Scribe Ultrasound Workshop Organized and led a bedside ultrasound training session (FAST, echocardiography, lung and abdominal applications) with a mix

- of didactics and hands-on practice for the Brown Emergency Medicine Scribes. October 2022
15. East Providence High School. Panel for Women in Medicine to Celebrate Women's History Month. March 31, 2023
  16. Brown Emergency Medicine Intern Ultrasound Orientation Workshop. Provided didactic on Point-of-Care Echocardiography in the Emergency Department. Provided hands on instruction for multiple bedside ultrasound diagnostic and therapeutic applications. June 2023
  17. SoundWave Symposium. Point-of-Care ultrasound instructor for APP and medical student POCUS course. Hands-on instruction. September 2023

## **REGIONAL**

1. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. MGH Bedside Emergency Ultrasound Conference, Charlestown MA. September 2014.
2. Lectured on central and peripheral ultrasound guided vascular access. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Pediatric Global Health Fellows. Children's Hospital, Boston MA, July 2015.
3. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Redington Fairview General Hospital, Skowhegan, ME. December 2015.
4. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on the Use of Bedside Ultrasound for the Evaluation of Pulmonary Embolism. Massachusetts College of Emergency Physicians Ultrasound Course, Waltham MA. 2015
5. Lectured on Implementation of Harm Reduction Methods for Opioid Overdose in the Emergency Department. Massachusetts Hospital Association, Burlington MA. 2015
6. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Pediatric Emergency Medicine and Critical Care Fellows' Regional Ultrasound Workshop, Providence, RI, September 2016.
7. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on Bedside ultrasound for nerve blocks. Massachusetts College of Emergency Physicians Ultrasound Course, Waltham MA. 2016
8. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on Bedside ultrasound for

- nerve blocks. Massachusetts College of Emergency Physicians Ultrasound Course, Waltham MA. 2017
9. Lectured on Right Heart Strain. Brigham and Women's Hospital Ultrasound Division. 2017
  10. Lectured on Nerve Blocks. Brigham and Women's Hospital Ultrasound Division. May 2018
  11. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on Cardiac Ultrasound and the Rush Exam. Massachusetts College of Emergency Physicians Ultrasound Course, Waltham MA. 2018
  12. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on Cardiac Ultrasound and the Rush Exam. Massachusetts College of Emergency Physicians Ultrasound Course, Waltham MA. 2019
  13. Moderator for Lightning Oral Presentations on Education and Simulation at SAEM: New England Regional Meeting (NERDS). April 2022

## **NATIONAL**

1. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications at this three-day ultrasound workshop. Yale's New England Emergency and Critical Care Ultrasound Course. Newport, RI. September 2014
2. American College of Emergency Physicians, Boston MA 2014; national. The Flipped Classroom: Emergency Medicine Education the Khan Academy Way Workshop.
3. Hands-on ultrasound instruction. CastleFest. Lexington, KY. April 2015.
4. Hands-on ultrasound instruction. American Society of Echocardiography. Boston, MA. June 2015.
5. Hands-on ultrasound instruction. Yale's New England Emergency and Critical Care Ultrasound Course. Newport, RI. September 2015.
6. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for diagnosis of ocular, testicular and MSK emergencies. September 2016.
7. ACEP International Ultrasound Workshop: Lecture and Hands-on. 2017
8. Sonogames Judge. SAEM; May 2017; Orlando, FL
9. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2017.
10. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Pediatric Emergency Medicine and Critical Care Ultrasound Workshop, Providence, RI. October 2017

11. Sonogames Moderator. SAEM; May 2018; Indianapolis, IN.
12. Bedside Emergency Ultrasound Course Instructor. EM Essentials; May 2018; Las Vegas, NV.
13. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2018 Basic Track.
14. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2018 Advanced Track.
15. Portland Point-of-Care Ultrasound Conference. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on Ultrasound for the Diagnosis of Deep Vein Thrombosis. October, 2018
16. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2019 Advanced Track.
17. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2019 Basic Track.
18. Sonogames Station Leader. SAEM; May 2019; Las Vegas, NV.
19. Portland Point-of-Care Ultrasound Conference. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Lectured on Ultrasound for the Diagnosis of Deep Vein Thrombosis. October, 2019
20. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Pediatric Point-of-Care Ultrasound Workshop, Providence, RI. October 2019
21. Sonogames Station Leader. SAEM; 2020; Denver, CO (Event later cancelled)
22. ACEP US Webinar Panelist. "From idea to publication: Strategies for navigating the peer-review system" February 2022
23. Sonogames Station Leader. SAEM; 2022; New Orleans, LA
24. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2022 Basic Track.
25. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2022 Advanced Track.
26. Yale's New England Emergency and Critical Care Ultrasound Course, Newport RI. Management Course Panelist: POCUS Workflow. September 2022
27. SCUF, Madison WI. Phantoms for Fellows: Recipe for Success. September 2022
28. SCUF, Madison WI. Kids Table: Hands On Phantom Session. September 2022

29. SCUF, Madison WI. Moderator: “How To: TVUS”. September 2022
30. Mass General Brigham Bedside Ultrasound Course, Somerville, MA: “The RUSH Exam”. October 2022
31. Provided hands on instruction and teaching for multiple bedside ultrasound diagnostic and therapeutic applications. Mass General Brigham Bedside Ultrasound Course, Somerville, MA. October 2022
32. The Use of Doppler in POCUS. EUS Fellowship Collaboration. August 2023
33. Yale’s New England Emergency and Critical Care Ultrasound Course, Newport RI. Bedside ultrasound for testicular evaluation and evaluation of Pregnancy. September 2023.
34. Yale’s New England Emergency and Critical Care Ultrasound Course, Newport RI. Management Course Panelist: POCUS Workflow. September 2023
35. SCUF, Portland ME. “POCUS Business Analytics: Beyond the Basics” 2023
36. SCUF, Portland ME. Panel Moderator “Job Search and Negotiations Panel.

### **INTERNATIONAL**

1. Central line and suturing workshop, multiple EM SIM sessions. Hue University of Medicine and Pharmacy. Hue, Vietnam. March 2013.
2. Emergency Ultrasound, Altered Mental Status, ACLS and ATLS lectures. Hue University of Medicine and Pharmacy. Hue, Vietnam. March 2013.
3. FAST, cardiac ultrasound and ultrasound-guided nerve block lecture. CHUK-The University Teaching Hospital of Kigali. Kigali, Rwanda. October 2013.
4. INDUS-EM Conference. Lucknow, India. Point of Care Ultrasound in Trauma. October 2014.
5. Hands-on ultrasound instruction. INDUS-EM Conference. Lucknow, India. October 2014.
6. Sepsis, Altered Mental Status and Ultrasound Guided Nerve Block Lectures. Hôpital Universitaire de Mirebalais, Haiti, March 2015.
7. Hands-on ultrasound instruction. Developing EM Conference. Havana, Cuba. September 2015.
8. Hopital Universitaire de Mirebalais, Partners in Health. Mirebalais, Haiti. Introduction to Bedside Ultrasound. Ultrasound Knobology. Introduction to eFAST. Basic Echocardiography. Ultrasound for diagnosis of ocular, testicular and MSK emergencies. Biliary Bedside Ultrasound. October 2016.
9. CABOFEST, Cabo, Mexico. Bedside ultrasound for aorta and renal emergencies. January 2017.

### **REVIEWER/EDITORIAL ACTIVITIES**

Ad Hoc Reviewer

Academic Emergency Medicine

|                 |   |
|-----------------|---|
| Ad Hoc Reviewer | Point-of-Care Ultrasound Journal                                |
| Ad Hoc Reviewer | British Medical Journal   |
| Ad Hoc Reviewer | Critical Ultrasound Journal                                     |
| Editor          | African Federation for Emergency Medicine, EUS Curriculum. 2016 |

## GRANTS

|      |   |
|------|---|
| 2013 | Massachusetts Medical Society and Alliance Charitable Foundation <ul style="list-style-type: none"><li>• \$3,000 grant for travel to Hue, Vietnam to teach bedside ultrasound to local providers</li></ul>                                  |
| 2013 | International Health Studies Grant Recipient <ul style="list-style-type: none"><li>• \$2,000 grant for travel to Kigali, Rwanda to teach bedside ultrasound to local providers</li></ul>  |
| 2014 | INDUS-EM Grant Recipient, Team Health <ul style="list-style-type: none"><li>• Grant received to attend trauma and ultrasound conference in India to present my ultrasound research and to teach at an ultrasound course</li></ul>           |
| 2015 | Fellow Research Grant Recipient, MACEP <ul style="list-style-type: none"><li>• Grant awarded for fellowship prospective research project on the use of bedside ultrasound for pulmonary embolism</li><li>• Principal investigator</li></ul> |

## CURRICULUM DEVELOPMENT

### Medical Student Emergency Medicine Ultrasound Rotation Curriculum

- EM 5640 hosts between 10-15 medical students annually
- Students participate in daily hands-on scan sessions and participate in weekly didactics, journal club and image review conference.
- Specific readings, on-line lectures and quizzes required as part of rotation

#### Medical Student Emergency Medicine Ultrasound Independent Study Curriculum

- Developed the medical student independent study course during COVID pandemic
- IS 5899 hosts 5-10 medical students annually
- Students participate in weekly didactic, journal club and image review conference.
- Specific readings, on-line lectures and quizzes required as part of rotation
- Oversee final project which is to create a FOAMED ultrasound blogpost

#### Intern POCUS Curriculum

- All Brown Emergency medicine interns (14), spend one month on the emergency ultrasound elective
- Interns perform a minimum of 150 diagnostic ultrasounds in the month
- Oversee final project which is to create a FOAMED ultrasound blogpost
- Interns participate in daily hands-on scan sessions and participate in weekly didactic, journal club and image review conference.

#### Senior Resident Curriculum

- Emergency residents opt into a two-to-four-week ultrasound elective in third or fourth year of residency
- Senior residents participate in daily hands-on scan sessions and participate in weekly didactic, journal club and image review conference.
- Oversee the rotating interns and medical students.
- Focus in on more advanced skills such as nerve blocks, advanced echo or transvaginal ultrasound

#### Fellowship Curriculum

- Emergency ultrasound is a one-year fellowship, and all fellows are required to complete an academic research project
- Fellows perform at least 1,000 ultrasounds, provide didactics to both the department and the division, oversee weekly image review and journal club
- ABEM certified fellows are eligible to sit for the focused practice designation exam in advanced emergency ultrasound.

#### BAEMA Fellowship Curriculum

- Emergency ultrasound is a one-year fellowship, and all fellows are required to complete an academic research project
- Fellows perform at least 1,000 ultrasounds, provide didactics to both the department and the division, oversee weekly image review and journal club



UNIVERSITY/HOSPITAL TEACHING, ADVISING and MENTORING ROLES

Warren Alpert Medical School of Brown University: Medical Student Courses

- |              |  |
|--------------|--|
| 2016-Current | EM Point of Care Ultrasound (EM-5640)<br>Warren Alpert Medical School of Brown University <ul style="list-style-type: none"><li>• Instructor 2016-2018</li><li>• Course director 2018-Current</li><li>• ~10-15 Brown Medical Students enroll per academic year</li></ul>   |
| 2016-Current | Warren Alpert Medical School of Brown University<br>Ultrasound Instructor for 1 <sup>st</sup> and 2 <sup>nd</sup> Year Students <ul style="list-style-type: none"><li>• Teach students hands-on ultrasound skills in preclinical years as part of their curriculum</li></ul>   |
| 2020-Current | EM Point of Care Ultrasound Independent Study (IS-5899)<br>Warren Alpert Medical School of Brown University <ul style="list-style-type: none"><li>• Developed curriculum and created course</li><li>• Mentored medical students with FOAMED blog post</li><li>• ~10-15 Brown Medical Students each academic year</li></ul> |

Warren Alpert Medical School of Brown University: Intern/Resident Courses

- |              |  |
|--------------|--|
| 2016-Current | Brown Emergency Medicine Intern Rotation: Point of Care Ultrasound <ul style="list-style-type: none"><li>• Interns have a required one-month ultrasound rotation with the Emergency Ultrasound Division</li><li>• Daily scanning in the department</li><li>• Weekly didactic, journal club and image review conference</li><li>• 14 Interns per year</li></ul> |
| 2016-Current | Brown Emergency Medicine Senior Resident Rotation: Point of Care Ultrasound <ul style="list-style-type: none"><li>• Daily scanning in the department</li><li>• Weekly didactic, journal club and image review conference</li><li>• 14 Interns per year</li></ul>   |

- 2016-Current
- Point of Care Ultrasound Hands-On Training Sessions
- Lead weekly hands-on training scan sessions in the Emergency Department
  - Medical students, interns, residents, and fellows in attendance

Warren Alpert Medical School of Brown University: Brown EM Fellow Courses

- 2016-Current
- EM Point of Care Ultrasound Fellowship Director  
Warren Alpert Medical School of Brown University
- Fellowship Director
- 2017-Current
- EM Point of Care Ultrasound BAEMA Non-Clinical Fellowship  
Warren Alpert Medical School of Brown University
- Director 2016-2019
  - Co-director 2019-Current

University/Hospital Teaching Roles

1. Toxidromes in the Emergency Department. Boston University School of Medicine, Department of Emergency Medicine. 2011
2. Stevens Johnson Syndrome. Boston University School of Medicine, Department of Emergency Medicine. 2011
3. Toxidromes. Boston University School of Medicine, Department of Emergency Medicine. 2011
4. Managing Altered Mental Status in the Emergency Department. Boston University School of Medicine, Department of Emergency Medicine. 2012
5. Obstetric Trauma in the Emergency Department. Boston University School of Medicine, Department of Emergency Medicine. 2012
6. Postpartum Cardiomyopathy. Boston University School of Medicine, Department of Emergency Medicine. 2012
7. ARDS-Critical Care. Boston University School of Medicine, Department of Emergency Medicine. 2012
8. Trauma Room: Chest Pain and Shortness of Breath. Boston University School of Medicine, Department of Emergency Medicine. 2012
9. Cardiogenic Shock. Boston University School of Medicine, Department of Emergency Medicine. 2012
10. Meningitis. Boston University School of Medicine, Department of Emergency Medicine. 2013
11. Managing Altered Mental Status in the ED. Boston University School of Medicine, Department of Emergency Medicine. 2013

12. Resident Grand Rounds: The Addicted Physician. Boston University School of Medicine, Department of Emergency Medicine. 2014
13. Advanced cardiac ultrasound applications. Brigham and Women's Hospital, Department of Emergency Medicine. October 2015.
14. Testicular ultrasound lecture for residents. Brigham and Women's Hospital, Department of Emergency Medicine. December 2015.
15. Ultrasound for evaluation of the aorta and kidneys. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. March 2017
16. Cardiac ultrasound. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. July 2017
17. Lung ultrasound. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. July 2017
18. Ultrasound for evaluation of pregnancy and testicular pain. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. September 2017
19. Ultrasound for Nerve Blocks. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. December 2017
20. Clinical Ultrasound- The Real World. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. March 2019
21. Pass the Pointer-Ultrasound Lecture. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. October 2019
22. POCUS High Yield Topics. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. November 2019
23. Use of Doppler Ultrasound at the Bedside. Warren Alpert Medical School of Brown University, Division of Emergency Medicine Ultrasound. February 2020
24. Lung Ultrasound for Diagnosis of COVID-19. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. April 2020
25. Advanced Cardiac and RUSH Exam lecture. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. September 2020
26. Advanced Cardiac lecture. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. May 2021
27. FAST Exam in Blunt vs Penetrating Trauma. Warren Alpert Medical School of Brown University, Division of Emergency Medicine Ultrasound. November 2021
28. Use of Doppler Ultrasound at the Bedside. Warren Alpert Medical School of Brown University, Division of Emergency Medicine Ultrasound. June 2021
29. The Use of Ultrasound for Undifferentiated Shock in the Emergency Department. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. October 2021
30. Bedside Ultrasound for the diagnosis of DVT. Warren Alpert Medical School of Brown University, Department of Emergency Medicine. January 2022
31. "Scan My Aorta Please". Brown Emergency Medicine Faculty Meeting. July 2022

32. “Opportunities in Research”. Brown Emergency Medicine Residency. December 2022
33. Regional Anesthesia in the Emergency Department. Brown Emergency Medicine Residency. June 2023
- 34.

Other Teaching

|               |  |
|---------------|--|
| May 2013      | Hue Central Hospital. Spent one month teaching emergency medicine and bedside ultrasound to residents in Hue, Vietnam  |
| November 2013 | Physicians for Ultrasound in Resource Limited Settings (PURE) Kigali, Rwanda for two weeks to participate in ultrasound training for local physicians. “Train the Trainers”                    |
| March 2014    | Hospitalito Atitlan. Spent one month teaching emergency medicine providers in Santiago Atitlan, Guatemala  |
| March 2015    | Hopital Universitaire de Mirebalais. Partners in Health. Spent one month teaching emergency medicine and bedside ultrasound to residents in Mirebalais, Haiti.                                 |
| November 2016 | Hopital Universitaire de Mirebalais. Partners in Health. Spent one month teaching emergency medicine and bedside ultrasound to residents in Mirebalais, Haiti.                                 |
| March 2016    | Physicians for Ultrasound in Resource Limited Settings (PURE) CHUK Hospital in Kigali, Rwanda. Worked in the emergency department training local residents on bedside ultrasound for one month |
| 2016-Current  | Teaching Rounds, Rhode Island Hospital & Miriam Hospital<br>Daily clinical teaching and supervision of residents and medical students, focused 10 minute academic presentations (~20/year)     |
| 2016-Current  | Supervise and teach emergency medicine and off-service residents each clinical shift   |
| 2018-2020     | Developed POCUS curriculum for monthly SIM sessions for EM residents   |

## MENTORING ROLES

### MEDICAL STUDENTS

- 2019-Current            Kamil Bahit (Brown '22).
- Provided research mentorship on a study evaluating the use of MAPSE as a proxy for ejection fraction in patients who present with dyspnea to the Emergency Department
  - Provided research mentorship on a study evaluating the use of carotid ultrasound to guide fluid resuscitation for patients who present with dehydration to the Emergency Department
  - Two abstracts accepted and three manuscripts in process

- 2021-Current            Giorgina Giampaolo (Brown '23).
- Provided research mentorship on a study evaluating for gender differences in the quality of bedside echocardiograms performed in the emergency department

- 2021-Current            Kelsey Kolbe (Brown '23)
- Provided research mentorship on a study evaluating for social determinants in the quality of bedside echocardiograms performed in the emergency department for chest pain or dyspnea. Study in progress
  - Mentored student and provided editing on a blogpost publication discussing gender Disparities in diagnostic imaging in the ED

### EMERGENCY MEDICINE RESIDENTS

- 2017-2021            Joshua Kaine, MD
- Faculty advisor
  - Selected as chief resident
  - Nominated Dr Kaine who was then awarded with the SAEM AEUS Resident Education Award
  - Provided research mentorship on a study evaluating the use of MAPSE as a proxy for ejection fraction in patients who present with dyspnea to the Emergency Department
  - Provided research mentorship on a study evaluating the use of carotid ultrasound to guide fluid resuscitation for patients who present with dehydration to the Emergency Department
  - Two abstracts accepted and three manuscripts in process

- 2017-2021 Erica Lash, MD
- Chief resident
  - Provided research mentorship on a study to evaluate for the need for chest tube placement based on lung ultrasound findings at the bedside (study has IRB approval, not commenced)
- 2016-2020 Allie Schick, MD
- Provided research mentorship on a multicenter study evaluating the use of ultrasound for detection of right heart strain in pulmonary embolism. Manuscript published
  - Provided research mentorship on a study evaluating the use of MAPSE as a proxy for ejection fraction in patients who present with dyspnea to the Emergency Department. Two abstracts accepted and two manuscripts in process
  - Provided research mentorship on a study evaluating the use of carotid ultrasound to guide fluid resuscitation for patients who present with dehydration to the Emergency Department. One manuscript in process
- 2018-Current Joshua Nims, MD
- Faculty Advisor
- 2021-Current John Martindale, MD
- Mentored on POCUS quality improvement project.
  - Developed reference binder for use at every Lifespan Emergency Department workstation which includes POCUS education materials, billing and credentialing policies, instruction on use and troubleshooting for our ultrasound machines and image storage solution
- 2019-2020 Michelle Myles, MD and Katie Miller, MD
- Mentored on POCUS quality improvement project.
  - Developed laminated signs for Lifespan Emergency Department ultrasound machine with reference materials on how to correctly obtain and store images and transmit those images to the image storage solution
  - Developed QR code on each ultrasound machine with video tutorials on bedside ultrasound workflow, image acquisition, storage and appropriate documentation

- 2022-Current                      Giovanna Deluca, MD and Stephanie Hess, MD
- Mentoring on POCUS quality improvement project.
  - QI project goal to improve compliance with appropriate ultrasound image storage and documentation for ultrasound guided procedures with a focus on central and peripheral lines

- 2022-Current                      Sean Reid, MD and Danielle Kerrigan, MD
- Mentoring on POCUS quality improvement project.
  - QI project goal to ensure documentation and image storage for all FAST exams performed in trauma, as required for Level 1 Trauma accreditation

#### EMERGENCY MEDICINE FELLOWS

- 2019-2020                      Zack Binder, MD
- Ultrasound fellowship director after his completion of a pediatric emergency medicine fellowship
  - Mentored in the development of a new pediatric emergency medicine ultrasound program
  - Mentored on sono-soapbox presentation at a national SAEM conference

- 2018-2020                      Nehal AlSadhan, MD
- Ultrasound fellowship director after her completion of pediatric emergency medicine resident training
  - Co-authored two text book chapters on emergency ultrasound
  - Mentored in the development of an ultrasound program in the pediatric emergency department at her emergency department
  - Mentored on multiple non-peer reviewed publication
  - Provided research mentorship on a study evaluating the use of MAPSE as a proxy for ejection fraction in patients who present with dyspnea to the Emergency Department. Two abstracts accepted and two manuscripts in process
  - Provided research mentorship on a study evaluating the use of carotid ultrasound to guide fluid resuscitation for patients who present with dehydration to the Emergency Department. One manuscript in process

- 2020-2021                      Burton Shen, MD
- Ultrasound fellowship director after his completion of internal medicine resident training

- Mentored through successful application process for ICU fellowship
- 2019-2020      Ali AlRassi, MD
- Ultrasound fellowship director. Non-clinical fellow
- 2020-2021      Mazen Alateeq, MD
- Ultrasound fellowship co-director. Non-clinical fellow
- 2021-2022      Abdullah Alfahhad, MD
- Ultrasound fellowship co-director. Non-clinical fellow
- 2021-Current      Lubna Alshibani, MD
- Ultrasound fellowship co-director. Non-clinical fellow
- 2021-Current      Nicole Leonard, MD
- Ultrasound fellowship director after her successful completion of emergency residency where she served as chief resident
  - Provided research mentorship on a study evaluating for social determinants in the quality of bedside echocardiograms performed in the emergency department for chest pain or dyspnea. Study in progress
- 2020-Current      Belal Nouredine, MD
- Ultrasound fellowship director starting July 2022
  - Co-authored a textbook chapter on the use of ultrasound for abdominal procedural guidance
  - Mentoring resident with a case report manuscript on ultrasound for thyroid assessment at the bedside