

Matthew R. Klein, MD MPH

Assistant Professor of Emergency Medicine, Clinician Educator
Brown University Warren Alpert Medical School

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EDUCATION

Undergraduate	Yale University B.A. Molecular, Cellular and Developmental Biology (2005-2009)
Medical School	Brown University Warren Alpert Medical School M.D. (2010-2014)
Other Advanced Degrees	Yale School of Public Health M.P.H (2008-2010)

POSTGRADUATE TRAINING

Residency	McGaw Medical Center of Northwestern University Emergency Medicine Residency (2014-2018)
Fellowship	Northwestern University Feinberg School of Medicine Department of Emergency Medicine Fellowship in Medical Education Scholarship (2018-2020)

ADDITIONAL EDUCATION AND TRAINING

Medical Education Research Certificate	Association of American Medical Colleges and Council of Residency Directors in Emergency Medicine (2016-2017)
Designing & Implementing Simulation-Based Mastery Learning Curricula Course	Northwestern University Feinberg School of Medicine (2019)

POSTGRADUATE HONORS AND AWARDS

Society for Academic Emergency Medicine Prize	Brown University Warren Alpert Medical School (2014)
Excellence in Community EM Award	Northwestern Lake Forest Hospital (2016)

Outstanding Teacher Recognition	Northwestern University Feinberg School of Medicine (2016, 2017, 2018, 2019, 2020, 2022)
Best Resident Role Model Award	Northwestern Emergency Medicine Residency (2017, 2018)
Best Resident Teacher Award	Northwestern Emergency Medicine Residency (2018)
Best Resident Innovator in Education Award	Northwestern Emergency Medicine Residency (2018)
Best Faculty Lecturer Award	Northwestern Emergency Medicine Residency (2019)
Recognition for Exemplary Professionalism	Northwestern University Feinberg School of Medicine (2019, 2020, 2021, 2022, 2023)
Best Faculty Innovator in Education Award	Northwestern Emergency Medicine Residency (2019, 2021)
Best Faculty Feedback Award	Northwestern Emergency Medicine Residency (2019, 2021, 2023)
Best Conference Module Leader Award	Northwestern Emergency Medicine Residency (2019, 2022)
Alpha Omega Alpha, Elected	Northwestern University Feinberg School of Medicine (2020)
David H. Salzman Junior Faculty Award	Northwestern Emergency Medicine Residency (2020)
Morris Kharasch Award for Excellence in Teaching	Northwestern Emergency Medicine Residency (2021)
Best Faculty Procedure Teacher Award	Northwestern Emergency Medicine Residency (2021)
Best Faculty Role Model Award	Northwestern Emergency Medicine Residency (2022, 2023)

PROFESSIONAL LICENSES AND BOARD CERTIFICATION

Illinois Medical License (Temporary)	(2014-2018)
Indiana Medical License (Temporary)	(2015-2018)
Illinois Medical License (Permanent)	(2018-2023)

Rhode Island Medical License (2023-Present)

American Board of Emergency Medicine (2019-Present)

ACADEMIC APPOINTMENTS

Chief Resident Northwestern University Feinberg School of Medicine Department of Emergency Medicine (2017-2018)

Clinical Instructor Northwestern University Feinberg School of Medicine Department of Emergency Medicine (2018-2020)

Assistant Professor Northwestern University Feinberg School of Medicine Department of Emergency Medicine (2020-2023)

Assistant Professor, Clinician Educator Brown University Warren Alpert Medical School Department of Emergency Medicine (2023-Present)

HOSPITAL APPOINTMENTS

Attending Physician Northwestern Memorial Hospital (2018-2023)

Attending Physician Northwestern Lake Forest Hospital (2018-2023)

Attending Physician Rhode Island Hospital (2023-Present)

Attending Physician The Miriam Hospital (2023-Present)

OTHER APPOINTMENTS

Assistant Residency Program Director Northwestern University Department of Emergency Medicine (2018-2023)

Assistant Clerkship Director Northwestern University Department of Emergency Medicine (2020-2021)

Clerkship Director Northwestern University Department of Emergency Medicine (2021-2023)

Emergency Medicine Specialty Advisor Northwestern University Department of Emergency Medicine (2022-2023)

Emergency Medicine Specialty Advisor Brown University Warren Alpert Medical School (2023-present)

HOSPITAL COMMITTEES

Residency Recruitment Committee Member	Northwestern University Department of Emergency Medicine (2015-2023)
Program Director Search Committee Member	Northwestern University Department of Emergency Medicine (2016-2017)
Program Evaluation Committee Member	Northwestern University Department of Emergency Medicine (2016-2023)
Residency Leadership Committee Member	Northwestern University Department of Emergency Medicine (2017-2023)
Clinical Competency Committee Member	Northwestern University Department of Emergency Medicine (2018-2023)

UNIVERSITY COMMITTEES

Alumni Schools Committee Interviewer	Yale University (2013-2023)
Admissions Committee Member	Northwestern University Feinberg School of Medicine (2019-2023)
Admissions Committee Member	Brown University Warren Alpert Medical School (2012-2014, 2023-Present)
Medical Committee on Academic Standing and Professionalism Member	Brown University Warren Alpert Medical School (2023-Present)

MEMBERSHIP IN SOCIETIES

Society for Academic Emergency Medicine	(2014-Present)
Council of Residency Directors in EM	(2018-2023)
American College of Emergency Physicians	(2018-Present)
Feinberg Academy of Medical Educators	(2018-2023)
Clerkship Directors in Emergency Medicine	(2021-2023)

PUBLICATIONS LIST

ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Safdar B, McGregor AJ, McKee S, Ali A, Radulescu R, Himelfarb N, **Klein M**, Mazure C. Inclusion of Gender in Emergency Medicine Research. *Acad Emerg Med* 2011;18(2):e1-4. [PMID: 21314767](#)

2. Safdar B, Bezek SK, Sinusas AJ, Russell RR, **Klein MR**, Dziura JD, D'Onofrio G. Elevated CK-MB with a Normal Troponin Does Not Predict 30-Day Adverse Cardiac Events in Emergency Department Chest Pain Observation Unit Patients. *Crit Pathw Cardiol*. 2014;13(1):14-9. [PMID: 24526146](#).
3. McCarthy DM, Powell RE, Cameron KA, Salzman DH, Papanagnou D, Doty AMB, Leiby BE, Piserchia K, **Klein MR**, Zhang XC, McGaghie WC, Rising KL. Simulation-based mastery learning compared to standard education for discussing diagnostic uncertainty with patients in the emergency department: a randomized controlled trial. *BMC Medical Education*. 2020;20(1):49. [PMID: 32070353](#)
4. **Klein MR**, Schmitz ZP, Adler MD, Salzman DH. Development of a Rigorously-Designed Procedural Checklist for Assessment of Emergency Medicine Resident Performance of Temporary Transvenous Cardiac Pacing. *AEM Educ Train* 2021;5(3):e10566. [PMID: 34124512](#)
5. Leibowitz MK, Scudder MR, McCabe M, Chan JL, **Klein MR**, Trueger NS, McCarthy DM. Emergency medicine influencers Twitter use during the COVID-19 pandemic: a mixed methods analysis. *West J Emerg Med* 2021;22(3):710-718. [PMID: 34125051](#)
6. Papanagnou D, **Klein MR**, Zhang XC, Cameron KA, Doty A, McCarthy DM, Rising KL, Salzman DH. Developing Standardized Patient-Based Cases for Communication Training: Lessons Learned from Training Residents to Communicate Diagnostic Uncertainty. *Adv Simul* 2021;6(1):26. [PMID: 34294153](#)
7. Poluch M, Feingold-Link J, Ankam N, Kilpatrick J, Cameron K, Chandra S, Doty A, **Klein M**, McCarthy D, Rising K, Salzman D, Ziring D, Papanagnou D. I Don't Have A Diagnosis for You: Preparing Medical Student to Communicate Diagnostic Uncertainty in the Emergency Department. *MedEdPORTAL* 2022;18:11218. [PMID 35178469](#)
8. Rising KL, Cameron KA, Salzman DH, Papanagnou D, Doty AMB, Piserchia K, Leiby BE, Shimada A, McGaghie WC, Powell RE, **Klein MR**, Zhang XC, Vozenilek J, McCarthy DM. Communicating Diagnostic Uncertainty at Emergency Department Discharge: A Simulation-Based Mastery Learning Randomized Trial. *Acad Med* 2023;98(3):384-393. [PMID 36205492](#).
9. **Klein MR**, Schmitz ZP, Adler MD, Salzman DH. Simulation-based Mastery Learning Improves Emergency Medicine Residents' Ability to Perform Temporary Transvenous Cardiac Pacing. *West J Emerg Med* 2023;24(1):43-49. [PMID 36602498](#).
10. **Klein MR**, Loke DE, Barsuk JH, Adler MA, McGaghie WC, Salzman DH. Twelve Tips for Developing Simulation-Based Mastery Learning Clinical Skills Checklists. *Med Teach* (in revision)

OTHER PEER-REVIEWED PUBLICATIONS

1. **Klein M**, Levine M. High pressure injection injury. *Visual J Emerg Med* 2017;8:46-47.
2. **Klein MR**. Infections of the Oropharynx. *Emerg Med Clin N Am* 2019;37:69-80. [PMID: 30454781](#).

3. **Klein MR**, Sanguino SM, Salzman DH. A Challenge to Disrupt the Disruptive Process of Residency Interview Invitations. *J Grad Med Educ* 2019 ;11(4):375-77. [PMID: 31440328](#).
4. **Klein MR**. Maintaining Cerebral Perfusion. *AEM Educ Train* 2021;5(4):e10708. [PMID: 34859172](#)
5. **Klein MR**. All Good Things. *AEM Educ Train* 2023;7(2):e10859. [PMID 36970558](#)
6. **Klein MR**. Secondary Outcomes. *AEM Educ Train* 2023;7(6):e10923. [PMID 38046088](#)
7. **Klein MR**, Quarles AR, Fant AL. Help Me Help You: How to Request a Letter of Recommendation. *South Med J* 2024;117(2):106-107. [PMID: 38307508](#).
8. **Klein MR**, Leibowitz MK, Fant AL. Evidence-Informed Emergency Medicine Career Advising. *AEM Educ Train* 2024 (in production)

PUBLISHED ABSTRACTS

1. Safdar B, Ali A, Radulescu R, Himelfarb D, **Klein M**, McKee S, Mazure C, McGregor A. Scope of Gender Specific Research in Emergency Medicine. *J Womens Health* 2010;19(3):631.
2. **Klein M**, Fant A, Lank P. Does Standardized Video Interview Score Correlate with In-Person Interview Score in Emergency Medicine Residency Applicants? *Ann Emerg Med* 2018;72(4):S7-S8.
3. Mitchell M, **Klein M**, Salzman D, Fant A. Procedure Passports: The Journey to Procedural Competence. *West J Emerg Med* 2024;25(3.1):S60.

BOOKS AND BOOK CHAPTERS

1. **Klein M**, Stanton R, Gottlieb M. Social Media in Medicine. In: Strauss R, Mayer T, ed. *Emergency Medicine Management*, 2nd edition. 2021. Dallas, TX: American College of Emergency Physicians.

OTHER NON-PEER REVIEWED PUBLICATIONS

1. Miller D, **Klein M**. Applying cognitive load theory to emergency medicine handoffs. *EM Resident* 2018; 20-21.
2. Schnapp B, **Klein M**. Pelvic Inflammatory Disease. In: *The 2018 Lifelong Learning and Self-Assessment Study Guide*. 2017. Norcross, GA: EB Medicine.

ABSTRACTS (ORAL/POSTER)

1. **Klein M**, Ranney M, Choo E. Psychosocial correlates of early alcohol initiation among adolescents. Poster presentation at the American Public Health Association Annual Meeting 2012.
2. Reuter Q, **Klein M**, Grabow K, Schnapp B. A Near-Peer Educational Initiative to Equip Interns with Conceptual Frameworks for Emergency Medicine Chief Complaints. Poster presentation at the CORD Academic Assembly 2016.
3. **Klein M**, Fant A, Lank P. Does standardized video interview score correlate with in-person

interview score among emergency medicine residents? Oral presentation at ACEP Scientific Assembly 2018.

4. **Klein M**, Fant A. An Interventional Pulmonology Rotation Increases Emergency Medicine Resident Fiberoptic Intubations. Poster presentation at the Lewis Landsberg Research Day, Northwestern University Feinberg School of Medicine 2018.
5. Rising KL, Cameron KA, Salzman DH, Papanagnou D, Doty AMB, Piserchia K, Leiby BE, Shimada A, McGaghie WC, Powell RE, **Klein MR**, Zhang XC, McCarthy DM. Simulation Based Mastery Learning for Emergency Department Residents Discharging Patients with Diagnostic Uncertainty: Results from a Randomized Control Trial. Oral presentation at the 2021 Virtual International Conference on Communication in Healthcare.
6. Mitchell M, **Klein M**, Salzman D, Fant A. Procedure Passports: The Journey to Procedural Competency. Poster presentation at the CORD Academic Assembly 2024.

SCHOLARLY WORK PUBLISHED IN OTHER MEDIA

1. Miller D, **Klein M**. NUEM Blog: My Brain Hurts: Applying Cognitive Theory to Emergency Medicine Handoffs? 2017. <http://www.nuemblog.com/blog/cognitive-load>
2. **Klein M**, Burns B. NUEM Blog: Infestations. 2017. <http://www.nuemblog.com/blog/infestations>
3. **Klein M**. NUEM Blog: What You Didn't Know About The Holiday Season: A Brief On Holiday Morbidity & Mortality. 2016. <http://www.nuemblog.com/blog/holiday>
4. **Klein M**. NUEM Blog: Top 5 Papers: Being a Senior Resident. 2016. <http://www.nuemblog.com/blog/top-5-mk>

Klein M, Huebinger R. NUEM Blog: Influenza Like Mimics. 2016. <http://www.nuemblog.com/blog/ili-mimics/>
5. **Klein M**, Macias M. NUEM Blog: The Rockets' Red Glare: Tips For Firework Safety. 2016. <http://www.nuemblog.com/blog/firework-safety/>
6. **Klein M**, Macias M. NUEM Blog: The Achy Breaky Heart. 2016. <http://www.nuemblog.com/blog/achy-breaky-heart/>

INVITED PRESENTATIONS

Regional

Midwest Hospital Medicine Conference Ultrasound Course Instructor (2018)

National

Maintaining Engagement in Social Media, CORD Academic Assembly (2018)

Don't Drown! How to Transition Swimmngly from Resident to Faculty in Academic Emergency Medicine, SAEM Annual Meeting (2019)

Can't Miss Diagnoses in Homeless Patients, Rocky Mountain Winter Conference (2020)

Clinical Pathologic Case Competition Faculty Discussant, CORD Academic Assembly (2020)

Negotiating Beyond Salary, CORD Academic Assembly (2020)

Sore Throat: The Ultimate Sick or Not Sick, ACEP Virtual Grand Rounds (2021)

UNIVERSITY TEACHING ROLES

Northwestern University Feinberg School of Medicine

EM Clerkship Dysrhythmia Session (monthly, average class size: 20) (2018-2023)

EM Clerkship Approach to Undifferentiated Patients Session (monthly, average class size: 20) (2021-2023)

EM Clerkship Approach to Altered Mental Status Session (monthly, average class size: 20) (2018-2023)

EM Clerkship Ethics & Professionalism Session (monthly, average class size 20) (2021-2023)

Introduction to Phase 3 Communicating Diagnostic Uncertainty Session (annually, average class size: 150) (2021-2022)

Introduction to Phase 3 Teaching, Learning & Feedback Session (annually, average class size: 20) (2019-2020)

Introduction to Phase 3 Acute Care Pharmacology Cases (annually, average class size: 20) (2019-2020)

Synthesis & Application Module IV Simulation Session (annually, average class size: 10) (2017-2020)

Synthesis & Application Module II Simulation Session (annually, average class size: 10) (2016-2018)

Capstone Airway Boot Camp (annually, average class size: 15) (2016-2018)

Capstone First Night on Call Simulation (annually, average class size: 15) (2016-2017)

EM Clerkship Airway and Suturing Skills Lab (monthly, average class size: 20) (2015-2017)

Northwestern University Department of Emergency Medicine

EM Foundations PGY1 Curriculum (weekly, average class size: 15)	(2016-2018)
Residency Conference OB/GYN Module Leader	(2018, 2020, 2022)
Residency Conference General & Vascular Surgery Module Leader	(2019, 2022)
Residency Conference ENT Module Leader	(2019)
Residency Conference Toxicology & Environmental Module Leader	(2020, 2022)
Residency Simulation Curriculum Instructor	(2018-2023)
PGY1 Procedures Boot Camp (annually, average class size: 15)	(2018-2023)
PGY4 Procedures Simulation (annually, average class size: 15)	(2021-2022)

Brown University Warren Alpert Medical School

BIOL 5880 Medical Education Elective	(2014)
Doctoring III & IV Instructor	(2023-Present)

MENTORING ROLES

McGaw Medical Education Clinical Scholars Program

Faculty advisor for Zachary Schmitz, MD (2019-2021)

Scholarly Outputs:

1. Klein MR, **Schmitz ZP**, Adler MD, Salzman DH. Simulation-based Mastery Learning Improves Emergency Medicine Residents' Ability to Perform Temporary Transvenous Cardiac Pacing. *West J Emerg Med* 2023;24(1):43-49. [PMID 36602498](#).
2. Klein MR, **Schmitz ZP**, Adler MD, Salzman DH. Development of a Rigorously-Designed Procedural Checklist for Assessment of Emergency Medicine Resident Performance of Temporary Transvenous Cardiac Pacing. *AEM Educ Train* 2021;5(3):e10566. [PMID: 34124512](#)

Northwestern University Emergency Medicine Residency Faculty Coach

1. Shawn Luo, MD (2018-2022)
2. David Feiger, MD (2018-2022)
3. Cameron Jones, MD MPH (2019-2023)
4. John Li, MD (2020-2023)
5. David Cook, MD (2021-2023)
6. Jil Shimberg, MD (2022-2023)

Northwestern University Emergency Medicine Specialty Advisor

1. Sasha Becker, MD (matched to Northwestern University) (2022-2023)
2. Joshua Faber, MD (matched to NYP/Weil Cornell) (2022-2023)
3. Andrew Geiser, MD (matched to University of Chicago) (2022-2023)
4. Maxwell McMahon, MD (matched to Ichan / Mount Sinai) (2022-2023)
5. Victor Pinto, MD (matched to University of Washington) (2022-2023)

Brown University Warren Alpert Medical School Emergency Medicine Specialty Advisor

1. Makena Mette (2024-2025)
2. Ryan Cunningham (2024-2025)
3. Aakash Setty (2024-2025)

Brown University Warren Alpert Medical School Advanced Clinical Mentorship

1. Makena Mette (2023-2024)

Brown Emergency Medicine Residency Faculty Coach

1. Dylan Perez, DO (2023-Present)

COMMUNITY ENGAGEMENT

Bank of America Chicago Marathon Volunteer Physician (2014-2023)

Chicago Blackhawks Emergency Physician (2018-2023)