

Dev Dash, M.D., M.P.H.

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Professional Experience

- Assistant Professor of Emergency Medicine – Stanford School of Medicine** July 2022 — Present
Physician providing emergency medicine at a Level 1 Trauma center along with engaging with operational projects, clinical ML model evaluation & deployment, and EM digital health
- Atropos Front End Clinician – Atropos Health** Apr 2021 — Present
Performing data science and clinical phenotyping and patient timeline consults through an enterprise data warehouse for research and QA consults for various clinical departments at Stanford, as well as working on internal projects for an early-stage startup.
- Consulting Physician – Caire Health** Oct 2021 – Present
Assisting a computer vision start up understand clinical workflows in emergency medicine
- AI Fellow – Longitude Capital** Oct 2021 — Mar 2022
Assisting in evaluation of health-tech companies while obtaining exposure to a broad array of industry partners, investor strategy and evaluating trends in a rapidly changing marketplace, while being guided by a local venture capital firm.
- Consulting Physician – Anthem AI** Jan 2021 — Sept 2021
Assisting their data science teams, providing strategic insights to build clinician facing apps that provide personalized medication recommendations.
- Attending Physician in Emergency Medicine – Adventist Health St. Helena** Jan 2021 — July 2022
Physician providing single coverage emergency medicine care for 7 bed ED, approximately 5,000 visit / year facility.
- Attending Physician in Emergency Medicine – Palo Alto VA** Jan 2021 — July 2022
Physician providing emergency medicine care adult veteran patients for a 20 bed ED, approximately 30,000 visit / year facility.
- Attending Physician in Emergency Medicine — Cal EMSA** Jan 2021 — Mar 2021
Physician providing emergency medicine and inpatient care to COVID-19 patients at a state funded temporary field hospital, helping decompress regional hospitals, COVID-19 treatments, nursing education, helping build informatics workflows for patient tracking and management.
- Instructor in Emergency Medicine (Adjunct Faculty) —** July 2018 — July 2022
Washington University School of Medicine
Attending Physician – Barnes Jewish Hospital, St. Louis, MO
Attending Physician – Barnes Jewish West County Hospital, Creve Coeur, MO
Attending Physician – Missouri Baptist Medical Center, Town and Country, MO
- Chief Resident in Emergency Medicine — Cleveland Medical Center** July 2017 — June 2018
Curriculum development for weekly conferences, ED scheduling, wellness.

Education & Training

Stanford Health Care & Stanford University — Stanford, CA Fellowship Training Program in Clinical Informatics Research Interests – Computer Vision, Natural Language Processing Operational Interests – QA / QI in Digital Health Initiatives (ED Video Visits, eConsults) AMIA Clinical Informatics Fellows (ACIF) Vice-President AIMI Post-Doctoral Research Fellow	July 2020 — July 2022
Harvard University School of Public Health — Boston, MA Master's in Public Health (M.P.H.) Research Concentration in Epidemiology & Health Policy Vice President of MPH-Epidemiology Student Society	July 2016 — June 2018
University Hospitals, Cleveland Medical Center — Cleveland, OH Residency Training Program in Emergency Medicine Research Concentration in Stroke Imaging & Cardiac Resuscitation	July 2015 — June 2018
University of Illinois Hospital — Chicago, IL Residency Training Program in Neurosurgery	July 2013 — Feb 2015
Baylor College of Medicine — Houston, TX Doctor of Medicine (M.D.) MSRT & Ethics track	July 2008 — June 2013
University of Texas at Austin — Austin, TX Bachelor of Science (B.S.) Radiation Physics (Honors) Research Concentration in Evolutionary Biology Minor in Japanese Language	July 2004 — June 2008

Quality & Operational Experience

eConsult QA – Stanford Healthcare Clinical lead for designing and implementing QA processes and EMR interventions to help with streamlining eConsults, improving integrity of data collection methods and designing an NLP model to provide real time feedback to PCPs.	Apr 2021 – Present
EM Dashboarding — Stanford School of Medicine, Department of Emergency Medicine Creating provider specific dashboards that show personal, departmental and clinical goals regarding imaging utilization, prescription and patient flow metrics through a Tableau interface. Mentor – Ian Brown MD MS	Dec 2020 – Present
Gyant Intern – San Francisco, CA Intern experience at a virtual assistant startup, assisting their clinical team on QA initiatives while learning about the culture and processes of early-stage companies.	Mar 2021 – March 2022
Rapid Process Improvement – Stanford University School of Medicine Co-Lead for “Improving Interpreter Services” at Lucile Packard Children’s Hospital – Performing observations, interviews and constructing interventions to improve interpreter services for limited English proficiency patients. Mentor – Nita Srinivas MD	Oct 2020 – Jan 2021

Resident Safety Council QI Co-Lead — Stanford University School of Medicine

Sept 2020 — Mar 2021

Co-Lead for “Reducing Radiology Imaging Utilization” - Identified multiple radiology imaging orders (CT/MRI/US) that incurred high cost but yielded low value across the healthcare system and created utilization reduction proposals that involved multiple stakeholders across different training environment.

Mentor – Lisa Shieh MD PhD

Research & Teaching Experience

VIVA Self-Triage Algorithm

Mar 2020 – Present

Developing a machine learning video triage system (with CI fellow Wui Ip MD) with ED patients using structured phrases for non-healthcare environment mobile app deployment and self-triage. Worked on training undergraduates and interfacing with computer vision team to generate a novel at home video triage mechanism. Funded by Stanford Catalyst.

Mentors – Rusty Hofmann, Nigam Shah, Serena Young

Renal Image Segmentation

Aug 2020 – Present

Developing a real-time image segmentation algorithm to grade renal hydronephrosis (with EM ultrasound fellow Ting Tan MD) and integrate into a clinical workflow.

Mentors – Ian Brown, Youyou Duanmu

AI PULL – COVID-19

Sept 2020 – Present

Developing an image classification algorithm that aids in predicting hypoxic outcomes, funded by Fujifilm EMF grant.

Co-collaborator with Dan Theodoro MD @ Washington University in St. Louis

Real-Time Transthoracic Echo Analytics

Aug 2020 – Present

Developing a hardware + software system that uses a labeled echocardiogram dataset and a deep learning algorithm along with intermixed emergency medicine bedside echocardiograms to predict categorical ejection fraction and provide real time feedback about cardiac function at the bedside.

Mentors – Ian Brown, Nigam Shah, James Zou

Emergency Medicine Teaching at Stanford

July 2018 — Present

Perform bedside educational rounds, improve resident procedural competency, mentor research projects and residents, assist residents in attaining residency milestones

Mentees – Nathanael Smith MD, Monique Kosco MD, Valerie Lew MD

Emergency Medicine Curriculum Development

June 2017 — July 2018

Developed an improved curriculum allowing for multi-modality weekly conference lectures for emergency medicine residents, intern procedural skills orientation, EHR / research IT skills, structured M&M case selection & discussion.

<p>Stroke Imaging & Airway Compromise Research Examining relationships between DWI volume & mechanical ventilation to assess airway compromise risks in ischemic stroke patients. Publication pending. Mentors – Dr. Johnathan Sheele, Dr. Jennifer Li (University Hospitals – Case Western) Dr. Deborah Blacker, Dr. Anand Viswanathan (Massachusetts General Hospital – Harvard)</p>	<p>June 2016 — July 2018</p>
<p>Quality Improvement Projects in Emergency Medicine Residency Cardiac Resuscitation QI – Leading simulations – “mock codes” – with residents to implement high fidelity cardiac resuscitation through evidence-based practices, emphasizing clear role designation, closed loop communication, procedural competency with vascular access, point of care cardiac ultrasound, and data-driven resuscitation prognostication. Mentors – Vicki Noble MD, Matthew Stull MD (University Hospitals - Case Western)</p> <p>Consent QI – Revamping the consent process through template consent forms to improve doctor to patient communication regarding risks and benefits of various procedures and interventions in the ED. Mentor – Michael May MD (University Hospitals - Case Western)</p> <p>Shared Decision-Making QI – Improving communication to patients through a visual manner to for patient centered health care to balance risks, benefits, and expected outcomes. Mentor – Sean Abraham DO (University Hospitals – Case Western)</p>	<p>June 2016 — July 2018</p>
<p>Case Western Medical Student Instructor Guided junior and senior medical students through splinting, suturing, vascular access, use of point of care ultrasound, basic management of chest pain & trauma protocols</p>	<p>Dec 2016 — July 2018</p>
<p>Case Western Physician Assistant Program Visiting Lecturer Provided emergency Medicine neurology & neurosurgery lectures on patient presentations, physical exam findings, imaging findings and improving consultant interactions.</p>	<p>June 2017 — July 2018</p>
<p>Neurosurgery Medical Student Mentor Mentored medical students from various years to expose them to neurosurgery & neurosurgical research.</p>	<p>Sept 2013 — Feb 2015</p>
<p>Medical Student Research Track (Bryan Lab at Baylor College of Medicine) Analyzed rat laser Doppler measurements to elucidate the role of erythrocytes in cerebral vessel dilation.</p>	<p>June 2010 — July 2011</p>
<p>Baylor College of Medicine Anatomy Teaching Assistant Taught a weekly anatomy lab class for 1st year medical students.</p>	<p>June 2007 — Mar 2008</p>
<p>MCAT Teacher Managed classes of 30 students, teaching General Chemistry and holding office hours.</p>	<p>June 2005 — June 2008</p>
<p>Undergraduate Researcher (Mueller Labs at University of Texas) Genomic sequencing of ant & fungus species under Christian Rabeling and Ulrich Mueller to elucidate a co-evolution relationship between ants and fungi. Results published in <i>Evolution</i>.</p>	<p>Feb 2005 — June 2008</p>
<p>Undergraduate Tutor (University of Texas) Tutored Physics, General & Organic Chemistry, Calculus.</p>	<p>Feb 2006 — June 2008</p>

Oral Presentations

- "Real-Time Computer Vision TTE Analytics using Existing Ultrasound Workflows" – ACEP 2021 (*upcoming*)
- "Automated Assessment of Video Quality and Ejection Fraction in Emergency Department Point-Of-Care Echocardiograms" AHA Scientific Sessions 2021 (*upcoming*)
- "Machine Learning in Emergency Medicine" — WashU EM Grand Rounds 2019
- "Risk Factors for Prolonged Hospitalization in Stroke Patients Presenting From the Emergency Department" – SAEM 2018 Abstract Presentation
- "Push-dose Pressors & Use in Crashing Atrial Fibrillation Patients" — UH EM Residency 2018
- "Management of Early Pregnancy with Indeterminate Pelvic Ultrasounds" — UH EM Residency 2017
- "Sepsis & Modern Antibiotic Stewardship" — UH Trauma Update 2016
- "Stroke Imaging in the ED" — UH EM Residency 2016
- "End Tidal Capnography" – Shaker Heights Fire / EMS in Cleveland OH 2018
- "Maternal Age and Autism – A Lesson in EHR Data Mining" — Harvard School of Public Health 2016
- "Update on Cerebral Trauma Management" — UIC Neurosurgery Residency

Publications

Warman R, Warman A, Warman P, **Dash D.** et al. (October 13, 2022) Deep Learning System Boosts Radiologist Detection of Intracranial Hemorrhage. *Cureus* 14(10): e30264. doi:10.7759/cureus.30264

Dash D., Gokhale A., Patel B., Callahan A., Posada J., Krishnan G., Collins W., Schulman K., Ren L., Shah N., Building A Learning Health System: Creating an Analytical Workflow For Evidence Generation to Inform Institutional Care Guidelines. *Applied Clinical Informatics*. Provisionally Accepted

Lu J.H., Callahan A., Patel B.S., **Dash D.**, Shah N., Low adherence to existing model reporting guidelines by commonly used clinical prediction models. medRxiv; 2021. DOI: 10.1101/2021.07.21.21260282. (preprint)

Dash D., Bryan Robert RMM. Analysis of LDF Flow in a Rat Model yielding results of EDHF Contribution in Medium Vessel Cerebrovasculature. *Journal of Stroke and Cerebrovascular Diseases*. Submitted

Sheele J.M., Barrett E., **Dash D.**, Ridge G.E. An analysis of the life stages of *Cimex lectularius* captured within a medical center suggests the true numbers of bed bug introductions are underreported. *J Hosp Infect*. 2017 Jul 28. pii: S0195-6701(17)30407-3. PMID 28760637

Dash, D., Jalali, A., Harsh, V., & Omeis, I. Transpedicular surgical approach for the management of thoracic osteophyte-induced intracranial hypotension refractory to non-operative modalities: case report and review of literature. *European Spine Journal*, 2016. 25(1), 209-215. PMID 26831535

Dash D., Viswanathan V., Amin-Hanjani S., Typhoon haiyan: Any role for neurosurgery in natural disasters?. *World Neurosurgery*. 2014 May; 81(5-6): 660–661; PMID: 24657560.

Mitchell B., **Dash D.**, Humphries W., Mawad M., De novo intracranial aneurysm formation following endovascular treatment of giant aneurysm in an infant: case report. *Child's Nervous System*. 2012 Apr; 28(4): 645-648. PMID 22167265

Zafar, S., **Dash, D.**, Chachere, M., Cowart, J., Kass, J. West Nile Virus Infection Associated with Central Nervous System Vasculitis and Strokes (P03.264). *Neurology*. 2012 Apr; 78 (1 Supplement): P03.264

Mueller U., **Dash D.**, Rabeling C., Rodriguez A. Coevolution Between Attine Ants And Actinomycete Bacteria: A Reevaluation. *Evolution*. 2008 Nov; 61(11): 2894-2912. PMID 18752608

Awards

UIC Neurosurgery Medical Student Mentorship Award	2014
Texas Children's GCRC (General Clinical Research Center) Fellowship	2010
Department of Anesthesia (BCM) Research Fellowship	2010
Melvin J. Rieger Scholarship for Academic Excellence	2007 — 2008
Robert E. Boyer Endowed Presidential Scholarship	2007 — 2008
S. Leroy Brown Scholarship for Academic Excellence	2007
Distinguished College Scholar	2007 — 2008
University Honors	2005 — 2008
Undergraduate Research Fellowship	2005 — 2006
Physics Departmental Scholarship (Center for Relativity)	2004
Trustee Award for Excellence	2003 — 2004

Certifications and Professional Memberships

Certifications / Licensure

- State of Missouri – Active License # 2018013280 – 2018 to 2021
- State of California – Active License # A168558 – 2020 to Present
- ACS — Advanced Trauma Life Support
- AHA — Advanced Cardiovascular Life Support
- AHA — Pediatrics Advanced Life Support
- AHA — Basic Life Support
- USMLE Step 1, Step 2CS, Step 2CK, Step 3

Professional Memberships

- American Academy of Emergency Medicine
- American College of Emergency Physicians
- Missouri College of Emergency Physicians
- American Medical Association
- Sigma Pi Sigma — Physics Honors Society

Skills and Interests

Technology and EMR Systems

- Proficiency with computer programming — Python (including Pytorch, Tensorflow, and various data analytics packages), R, MATLAB
- Proficiency with statistical packages — STATA, JMP Pro, Minitab, Tableau
- Proficiency with EHRs — Epic Hyperspace, Cerner Powerchart, Allscripts, CPRS (VA)
- Epic Builder and Analytics Certified

Languages

- English and Oriya — native speaker fluency
- Japanese and Spanish — speak, read, and write with intermediate competence

Hobbies

- Piano
- Computer programming
- Sustainable energy projects
- Cooking multi-course East Asian meals