



Pediatric Emergency Medicine Fellowship Overview 2022

Kim Little-Wienert, MD, MEd

Marideth Rus, MD, MEd

Elizabeth (Liz) Moran, MD, MEd



**Texas Children's
Hospital®**

Baylor
College of
Medicine

Welcome to Texas!



PEM Fellows 2022-2023



Pediatric Emergency Medicine Fellowship Program



Kim Little-Wienert, MD, MEd
Program Director



Marideth Rus, MD, MEd
**PEM- GH Combined Fellowship
Director**
Associate Program Director



Elizabeth Moran, MD, MEd
Assistant Program Director

PEM at Baylor and Texas Children's

Fellowship began in 1992

51 PEM faculty, 6 POCUS faculty, GEMS, APPS

120 fellowship graduates across the country

Currently 18 fellows

EM and pediatrics trained

2021-Received 174 applications for 6 positions

Texas Children's Hospital

Main Campus

- 750-bed children's hospital
- 25,966 admissions in the most recent year
- 9,053 annual inpatient and 16,216 outpatient surgeries

Pavilion for Women

- Comprehensive obstetrics/gynecology facility focusing on high-risk births, fetal surgery

West Campus

- Community hospital in suburban West Houston

The Woodlands

- Community hospital in suburban North Houston

Legacy Tower

- Critical care and surgical tower constructed in 2018

Feigin Center for Pediatric Research





Texas Children's - Main Campus

Main Fellowship Training Site

Emergency Center

- **Level 1 pediatric trauma center**
- **Largest pediatric emergency center in the region**
- **50+ beds (North, South)**

Legacy Tower

- **High Acuity Operating Rooms**
 - 6 ORs for neurosurgery, orthopedics, plastic, transplant, general surgery
 - Integrated MRI scanner
- **Pediatric Intensive Care Units**
 - 4 Pediatric ICU floors
 - Subspecialty PICUs including dedicated neuro-ICU and Surgical ICU
 - **84** large private PICU rooms
- **Heart Center**
 - 8 floors
 - 4 cardiac catheterization labs including integrated MRI scanner
 - 4 cardiovascular ORs
 - 3 cardiovascular ICU floors with **48** private rooms
 - 2 cardiac acute care floors with **42** private patient rooms
- **Helistop**
 - Enables transport of critically ill patients

Texas Children's – West Campus

Community Training Site

Emergency Center

- 24 beds

Pediatric Intensive Care Unit

- 22 beds

Inpatient

- 46 beds



Texas Children's – Woodlands

Community Site

Emergency Center

- 20 beds

Pediatric Intensive Care Unit

- 14 beds

Inpatient

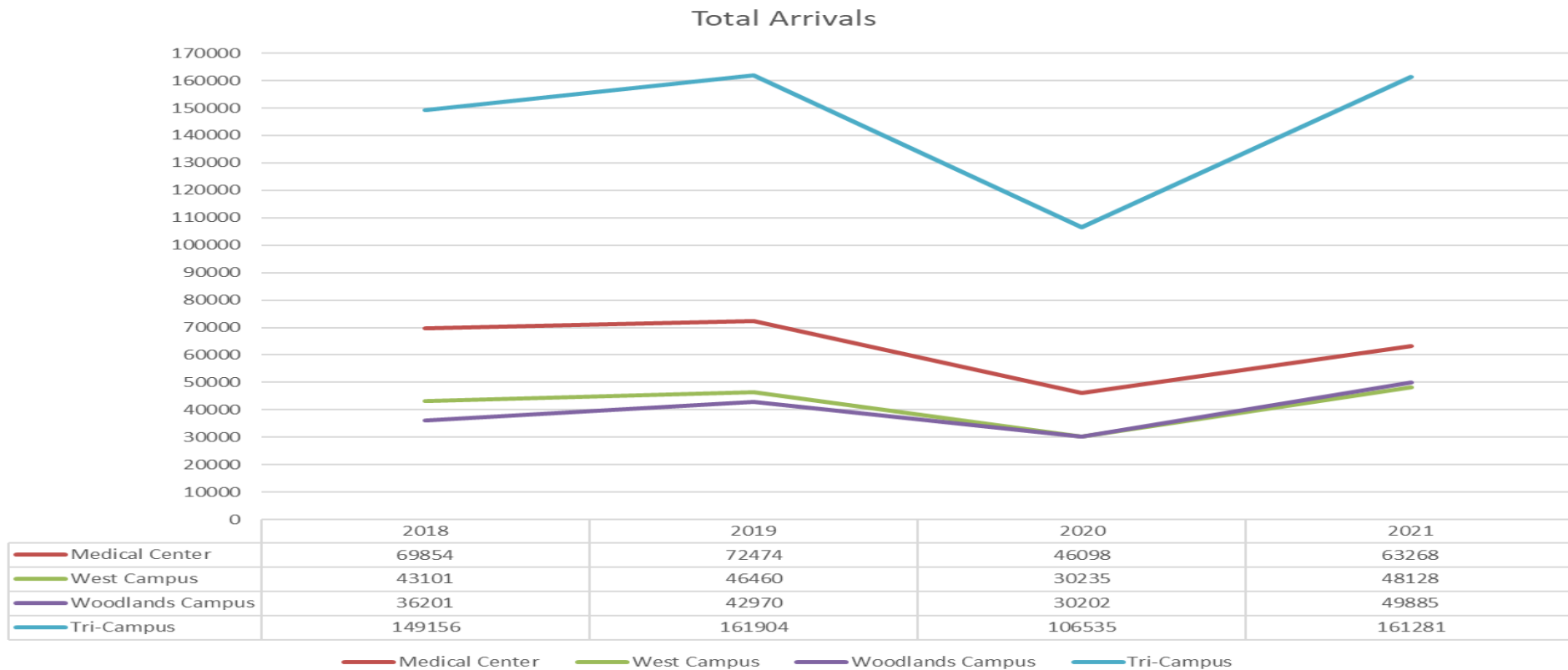
- 32 beds

NICU Level 3

- 14

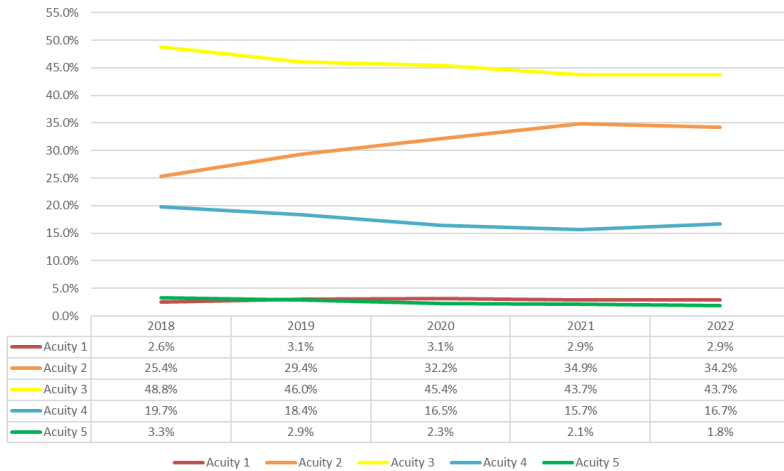


Tri-Campus TCH Arrivals 2018-2021

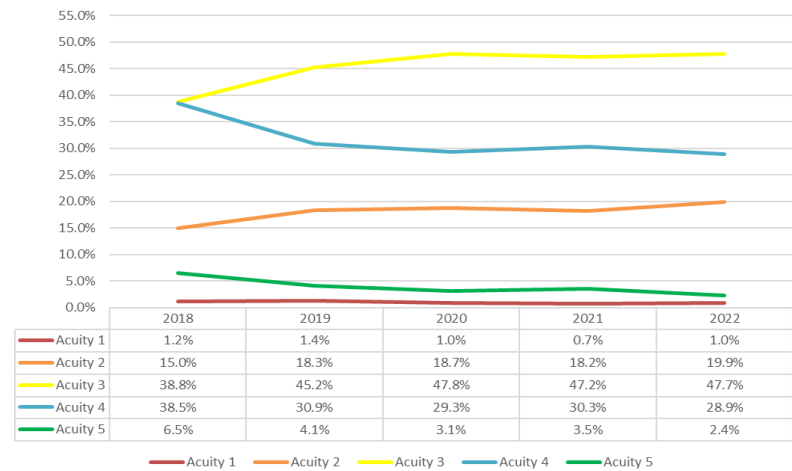


Patient Acuity

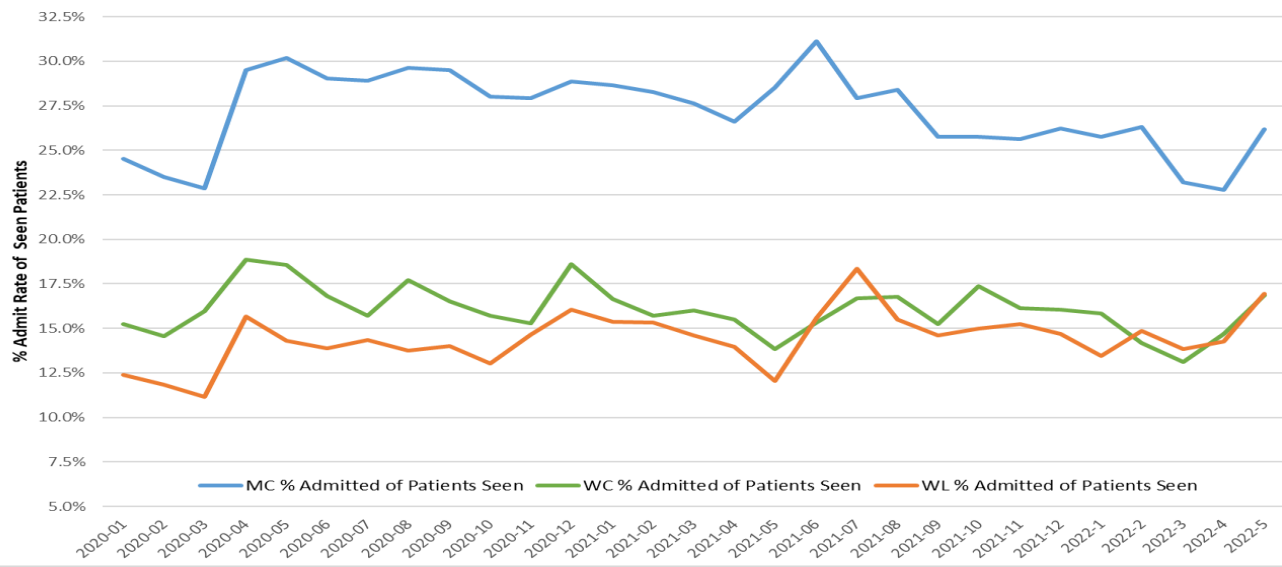
MC Acuity of Patients Seen



WC Acuity of Patients Seen



Admission Rate of Patients Seen



Goals & Objectives

Gain	proficiency in the clinical practice of pediatric emergency medicine (PEM)
Achieve	competency in educating other health care providers and families
Approach	everyday work in a scholarly way
Develop	familiarity with administrative issues
Prepare	for a career in PEM



PEM Fellowship Curriculum

Clinical practice



Teaching and consulting



Administrative training



Quality and performance improvement



Career development



Academics & Scholarship



Clinical practice



Provide ED evaluation and management of acutely ill or injured pediatric patients

- Perform patient evaluations quickly with stabilization of life threatening processes
- Develop competency in technical/procedural and resuscitation skills necessary to practice PEM
- Academic and community experience

Prioritize and simultaneously manage the emergency care of multiple patients

Use evidence based reasoning to guide clinical practice

Teaching and consulting

Achieve proficiency in teaching to different types of learners and in a variety of clinical settings

Teach at the bedside

- TCH main and WC (resident and med student supervision)
- Core medical student teaching shifts (1 p-6p Tues)

EC rounds

Lead small and large group discussions

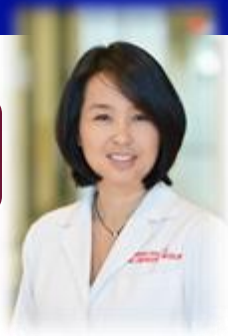
Prepare and present lectures

Become PALS instructors and/or simulation instructors

Administrative training

Acquire skills necessary for ED management

- Supervise physician trainees
- Manage personnel
- Serve as team lead during resuscitations
- Manage patient throughput



Dr. Deborah Hsu
Section Chief,
Pediatric Emergency Medicine

Practice appropriate medical record documentation

- Relay information regarding patient care delivered
- Document medical decision making processes
- Support billing for medical care provided

Gain exposure to financial management in health care

Develop leadership skills

Quality and Performance Improvement

Gain knowledge in quality improvement methods and data gathering

Conduct performance improvement review

Develop EBM guidelines

Identify patient safety or quality issues

Design and conduct a quality project



Dr. Binita Patel,
Medical Director
Chief Quality Officer



Career development



Create and revise individualized learning plan

Build on your CV

Receive & provide mentorship

Balance clinical and academic duties

Review principles of academic advancement

Create a 5 year plan

Gain awareness of job market demands

Get the job you want; choose the career path that's right for you

Fellowship Curriculum

Meets all requirements set forth by
the American Board of Pediatrics
and American Board of Emergency
Medicine



First year curriculum – Peds trained

8.25 months PEM*

2 weeks pediatric anesthesia

1 week pediatric sedation

1 month PICU (Main and West Campus)

1 month adult emergency medicine- Memorial Hermann

1 month ultrasound

***Total ED Time at Texas Children's Hospital Main and West Campus = 950 Hours
(approx 32 clinical hrs/week on PEM rotations)**

First year curriculum – EM trained

7.75 months PEM*

2 weeks pediatric anesthesia

1 week pediatric sedation

2 weeks child development (with child life)

1 month PICU (Main or West Campus)

1 month NICU

1 month pediatric cardiology

***Total ED Time at Texas Children's Hospital Main and West Campus= 950 Hours
(approx 32 clinical hrs/week on PEM rotations)**

Second year curriculum – Peds trained

9 months PEM*

2 weeks orthopedics

2 weeks toxicology

2 weeks child protection

1 month trauma– Memorial Hermann

*Total ED Time at Texas Children's Hospital Main and West Campus= 1150-1200 Hours
(approx 32 clinical hrs/week on PEM rotations)

Second year curriculum – EM trained

9.5 months PEM*

1 month pediatric infectious disease or neurology

1 month elective

2 weeks child protection

*Total ED Time at Texas Children's Hospital Main and West Campus= 1150 Hours (approx 32 clinical hrs/week on PEM rotations)

Third year curriculum – peds trained

8.25 months Research (Extra hours experience)*

2 weeks anesthesia

1 month elective

1 month EMS

1 month adult emergency medicine- Ben Taub General Hospital or Memorial Hermann

1 week radiology

Finish in July whatever required clinical hours not completed in years 1 and 2; otherwise no required ED shifts;
Extra hours experience available to maintain clinical skills (approximately 60 clinical hours/month)

Extra hours experience

Clinical opportunity offered only to fellows in their 3rd year of training

Successful completion of all PEM ED clinical requirements

Opt to take this opportunity to maintain clinical skills during a primarily research year of their fellowship

Placed as second attending in TCH North/South and West Campus

Moonlighting rates apply

All Fellows

Complete 2136 clinical hours in the PEM ED setting in first 2 years of fellowship

TCH
Main EC

- Weekdays: 6a-2p, 2p-10p, 6p-2a, 10p-6a
- Tues medical student teaching shifts: 1p-6p
- Weekends and holidays: 6a-4p, 4p-2a, 8p-6a

TCH
West Campus

- Weekdays: 3pm-11pm
- Weekends and holidays: 3pm-1am

PEM Rotations

Combined clinical and research time for fellows, based on a 50 hour work week

Pediatric trained fellows

- 1st year & 2nd year - 65% clinical and 35% research
- 3rd year - 25% clinical and 75% research if they choose to take the Extra Hours Experience; 100% research if approved not to take the Extra Hours Experience.

Emergency medicine trained fellows

- 65% clinical and 35% research both years.
- Given the time constraints modifications to the requirement of scholarly activity during fellowship are made based on individual fellows' needs and interests.

PEM-Global Health Combined Fellowship



Fully integrated four year fellowship with 36 months PEM and 12 months GH

Fellows graduate both programs at the end of 4 years

Rotation schedule is modified to include 2-4 months per year of global health time

Some rotations will be delayed to the following academic year

Scholarly project focused on global health

PEM-Global Health Fellowship



Dr. Marideth Rus,
Director, Global Health Fellowship

Traditional PEM Fellowship

ALL GH FELLOWS COMPLETE THE FOLLOWING:

International Fieldwork Rotation

Scholarly activity project or needs-based research abroad

Disaster Medicine Training (Health Emergencies in Large Populations (HELP) Course)

Foundations in Global Health didactic curricular series

Quarterly Global Health Journal Club

Diploma in Tropical
Medicine & Hygiene
(DTMH)
+
Public Health Certificate

DTMH
+
Master of Public Health
(MPH) Diploma
or
Other approved
advanced degree

MPH Diploma
or
Other approved
advanced degree

PEM-Global Health Combined Fellowship

<u>PEM/GH Year</u>	<u>Curriculum</u>
<u>PEM/GH Year 1</u>	<ul style="list-style-type: none"> • 6 months PEM * • 2 months GH • 2 week anesthesia • 1 week sedation • 1 month PICU • 1 month adult EM • 1 month POCUS
<u>PEM/GH Year 2</u>	<ul style="list-style-type: none"> • 6.5 months PEM/Research • 3 months GH • 2 weeks orthopedics • 2 weeks toxicology • 2 weeks child protection • 1 month trauma
<u>PEM/GH Year 3</u>	<ul style="list-style-type: none"> • 4.75 months PEM/Research • ~1.25 months Research (EHE) • 3 months GH • 2 weeks anesthesia • 1 month emergency medical systems • 1 month Adult EM • 2 weeks toxicology
<u>PEM/GH Year 4</u>	<ul style="list-style-type: none"> • 6.75 months Research (EHE) * • 4 months GH • 1 week radiology • 1 month elective

Electives

4 weeks of elective(s) required

- Administrative elective
- Adolescent medicine/gynecology
- Adolescent medicine/sports medicine
- Dermatology
- Global health- Malawi, Belize
- Neurosurgery
- Ophthalmology
- Otolaryngology
- Pediatric Dentistry
- Plastic/Hand Surgery
- Pediatric Injury
- Quality and Safety
- Simulation
- Create your own elective



Academics: Conferences and Lectures

PEM conference Thursday 9am-1 pm

- Clinical protection Wed overnight and Thurs morning

Conferences which you will present or require your preparation:

- Quality and Performance Improvement (M&M)
- Board Review
- Fellow lectures
- Fellow's follow-up rounds
- Radiology Rounds
- National conference presentations



Conferences Series- 24 month Curriculum

- July core clinical lectures/workshops
- Administrative
- Allergy/Immunology
- Cardiology
- Child Protection
- Endocrine
- EMS/Disaster medicine
- Ethics
- Hematology series



Conferences Series- 24 month Curriculum

- Gastroenterology
- Global Health
- Neurology
- Obstetrics and gynecology
- Orthopedics
- PEM Joint Conferences
 - ◆ Critical Care Medicine
 - ◆ Hospital Medicine
 - ◆ CVICU



- Plastic Surgery
- Psychiatry
- Quality
- Radiology
- Renal
- Sports medicine
- Surgical
- Trauma
- Toxicology



PEM Domains of Interests

- Information technology
- Disaster preparedness
- Observation medicine
- Sedation and pain management



Education



Simulation Director



PEM Chief

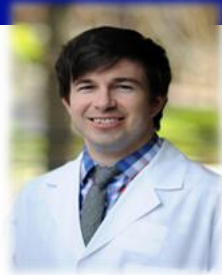


Peds Residency PD



PEM Domains of Interests

□ Airway



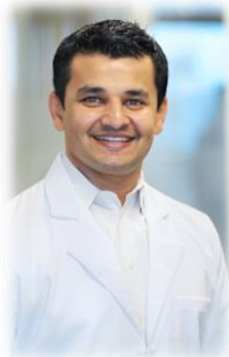
□ Customer Service and Communication



□ Advocacy



□ EMS



PEM Domains of Interest

□ Asthma



□ Diversity



□ Bronchiolitis



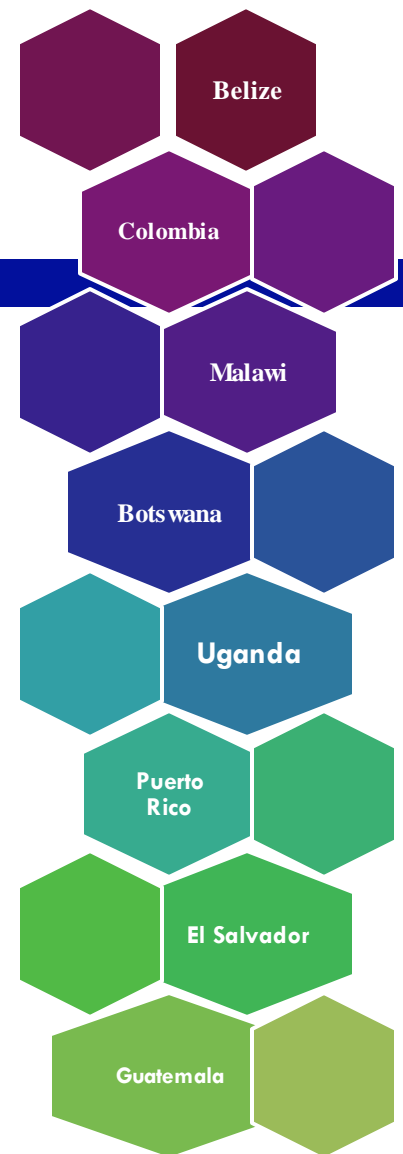
□ Ultrasound (Team Grayscale)



□ Handoffs, Technology



Global Health



PEM Point-of Care Ultrasound

One month Ultrasound rotation during first year

- PEM
- Adult EM
- Radiology
- Cardiology

Ultrasound during your core PEM shifts and adult EM shifts

Ultrasound research

Ultrasound fellowship



Dr. Kiyetta Alade,
Director PEM POCUS



Dr. Stephanie Leung
POCUS Fellowship Director

POCUS Training

- POCUS training required for PEM fellow graduation
 - 1) 150 scans by fellowship completion
 - 2) 10 proctored scans with ultrasound faculty

- POCUS training completion by March of 2nd year allows for ultrasound privileges as 3rd year “pretendings”



PEM simulation



Involving all fellows:

- PEM fellows simulation days
- RCDP for first years
- EC in-situ simulation
 - ◆ Full teams, 4/month, unannounced
- Procedural teaching
 - ◆ Central lines
 - ◆ Chest tubes
- SCOPE
 - ◆ July

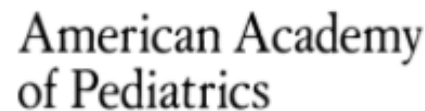


Good to know about:

- Resident and nursing resuscitation/ PALS training
 - ◆ Thursdays after conferences
- Trauma simulations for first years
- Medical students
 - ◆ During core rotation, sim for procedural training
- Pre hospital training
 - ◆ Pediatric resuscitation for HFD providers, twice monthly for 2 years, trained over 1200 providers
- Global Health
 - ◆ Pre-departure training for residents and BIPAI physicians



PEM outreach and service



DEDICATED TO THE HEALTH OF ALL CHILDREN®

PEM Research



Scholarship

Critically assess scientific merit of research protocols & publications

Gain knowledge in basic clinical epidemiologic principles & biostatistics

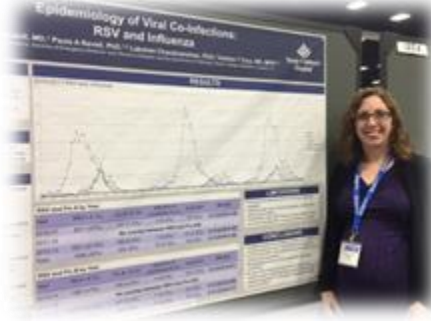
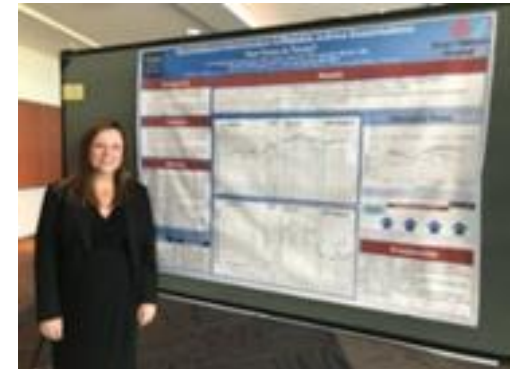
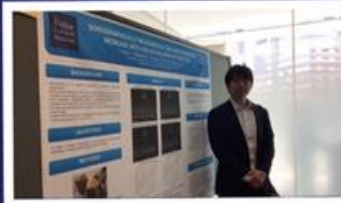
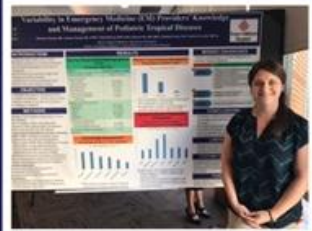
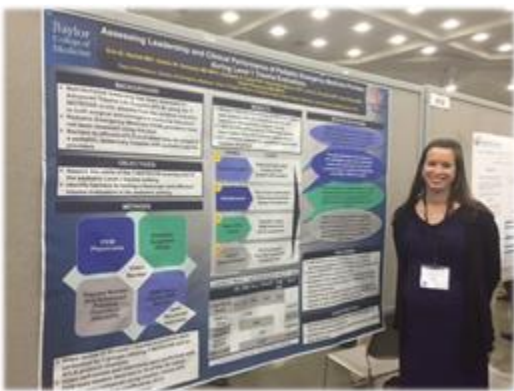
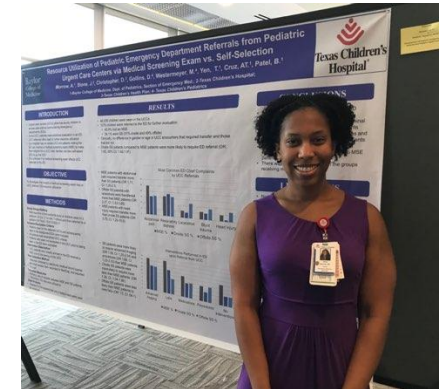
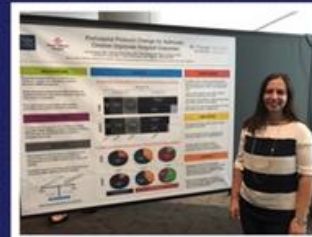
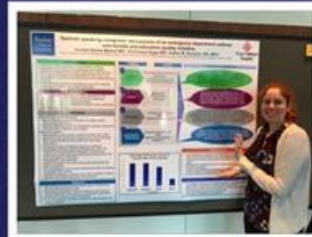
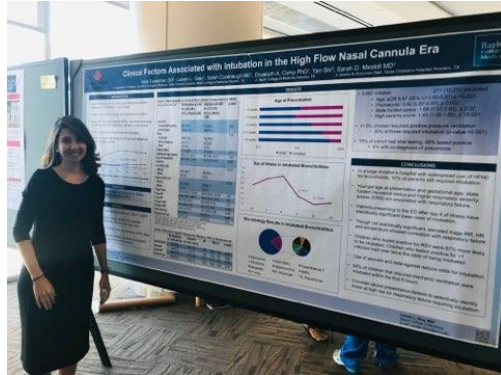
Explore non-traditional avenues for demonstrating scholarship

Design & conduct a hypothesis driven scholarly project

Analyze & interpret data

Acquire knowledge in grant funding mechanisms

Attain and hone writing skills



QI PROJECT IMPROVES PREHOSPITAL PROTOCOL COMPLIANCE



AAP 2018

**Fellows National
Conference 2018
Advocacy on Capitol Hill
EMS for children**



**2018 Harvard Humanitarian Response
Intensive Course**



**2017 American Academy of Pediatrics
First place PediSonoFest Competition**



Micheal Arroyo:
Best original research award and platform presentation at the Injury Free Coalition for Kids Conference, December, 2019, Ft. Lauderdale, Florida



Asha Morrow
2019 Best and Outstanding Center of Excellence Clinical Fellow Scholar Award



Texas Pediatric Society E-Poster Contest Winners
Bryan Greenfield and Abhay Kulkarni
FIRST PLACE for your poster in the Evidence Based Medicine/QI category:
#60minutes: Improving Timeliness of Antibiotic Delivery to Patients with Febrile Neutropenia



Justin Moher
Best Trainee Abstract SOICH AAP, 2019

How Are Academic Skills Developed in PEM Fellowship?

Meeting	Why	When
ACER	Project specific guidance from time of initiation	Thursdays year round
Journal club	In depth review of single recent article; fellow-led	1 st Thurs
Topics in Research	Rotating topics (q2-3 yrs) presented by faculty	1 st Thurs
Literature Review	Review of recent hot articles and historical PEM topics	Quarterly
Progress in Research	Updates on research progress, obstacles	Quarterly
Scholarly oversight committees (SOC)	Help fellow track progress, meet benchmarks	Semi-annually



Topics in Research Series: 2022-2023 Schedule

TOPICS IN RESEARCH SCHEDULE FOR 2022-2023 ACADEMIC YEAR

Date (Time:12p-1p)	Track 1	Track 1 Presenter	Track 2	Track 2 Presenter
August	Question Development Workshop	Ashby	Navigating Rocky Research Waters	Sampayo
September	Qualitative Research Pt. 1	Sampayo	Stats III	Meskill
October	Literature Search and Literature Appraisal Workshop (Homework: Complete 2 CITI training courses and turn in certificates)	Chumpitazi	Writing Workshop #2 Methods	Shah (Lead) and faculty*
November	IRB Navigation	Cruz/ Gonzalez	Conference Presentation Submissions	Singh
December	Stats I	TBD	Writing Workshop #3 Results/Abstract	Chumpitazi (Lead) and faculty*
January	Scientific Presentation Skills Workshop	Cruz	Educational Research	Doughty
February	Survey Methodology	Sampayo	Presenting at Conferences: Poster and Elevator Pitch Workshop	Ashby/ Bachim
March	Data Collection and Quality	Shenoi J Jones	Qualitative Research Pt. 2	Sampayo
April	Nuts and Bolts of Research and Writing	Portillo/ Shah	Writing Workshop #4 Discussion	Doughty and faculty*
May	Writing Workshop #1 Background	Shah (Lead) and faculty	Manuscript Submission Process	Cruz
June	Stats II	TBD and Camp	Case Report Workshop	Cruz (Lead) and faculty*

*Collaborative Institutional Training Initiative (CITI) courses (<https://www.citiprogram.org>) required by all 1st year fellows; turn in



Advisory Committee on Excellence in Research (ACER)

Small group setting where faculty focus on thorough development of research projects

Faculty with expertise in quantitative and qualitative research, education, quality improvement, and global health

Receive written and verbal feedback on:

- Study question
- Study design
- Analysis plan

1st year fellows required to attend 4 sessions



Journal Club & Literature Review

Journal Club

- Purpose: To learn critical appraisal skills
- Review recent paper from past 2 years

Literature Review

- To review classic PEM articles
- To review recent 'hot off the press' articles that have been published within the past 6 months



Faculty & Research Mentor Roles

Mentor

- Attend journal club, fellow lecture, follow-up rounds and QPI presentation for mentee
- Give quarterly feedback to mentee on clinical/academic performance

Research Mentor

- Participate in ACER sessions with fellow
- Review the fellow's proposal prior to submission to ACER
- Review the fellow's IRB prior to submission
- Review abstracts and manuscripts prior to submission

Both

- Review posters and slides prior to presentations
- Attend 2 SOC meetings per year



Other Scholarly Activities



Case submissions (PEMPix, EmergiQuiz, Case Reports)

Participation in National PEM Fellows' Conference

Feedback on presentations for conferences

Career workshop in July

Final year career planning at orientation

BCM Fellows' Day abstract presentations

Other Activities (Optional)

Career dinners

Advanced degrees (MPH, MBA, MEd, Master's Clinical Research)

Writing book chapters or review articles

Teaching residents, medical students, paramedics

Evidence-Based Medicine course

Serving on section or hospital-wide committees



PEM RESEARCH STRUCTURE

Research Chief



Directors of Research Education



Research Coordinators

Research Assistants

Academic Associates

PEM Section Support Staff

- Epidemiologist and database manager
- Biostatistician
- Accountant



PECARN



*Conducting High Priority,
High-Quality Research in
Pediatric Emergency Care*

National PEM research network, 18 sites

TCH is a member site

Enables multicenter studies:

- Decision rules for CTs after head injuries
- DKA
- Meningitis prediction rules
- Multiple publications



www.pecarn.org

Research: ongoing studies

PECARN

- ◆ C-spine prediction (Rubalcava)
- ◆ Arginine for sickle cell VOC (Chumpitazi – resubmission pending)
- ◆ Identification of pulmonary emboli (Chumpitazi – submission pending)
- ◆ Febrile baby study
- ◆ Screening for sexually transmitted infections in the ED
- ◆ Non-operative management of appendicitis (planning grant)
- ◆ Infections in solid organ transplant recipients (Cruz = study PI, nodal study)
- ◆ Interobserver agreement in historical and examination variables for headaches (Cruz = site PI)

PEM CRC

- ◆ Submersion (Shenoi = study PI)
- ◆ IBIs in acute otitis media (Cruz = senior PI)
- ◆ HUS (Cruz = site PI)
- ◆ HSV (Cruz = Study PI)
- ◆ Omphalitis/mastitis (Cruz = site PI)
- ◆ Short gut and CLABSI (Cruz = Co-I)
- ◆ Survey competition (quarterly)

PERN

- ◆ Medical errors (Lewis)
- ◆ Influenza (Meskill)

Industry

- ◆ New drug for sickle cell VOC (Chumpitazi)
- ◆ Smart cough (Sampayo)
- ◆ Bluetooth monitoring of vital signs
- ◆ New diagnostic platforms for rapid strep
- ◆ Salivary biomarkers for traumatic brain injury

Current Single-Center Studies (just a sampling)

Quality improvement projects: intubation, pain control in sickle cell patients, resuscitation/communication, appendicitis

Educational projects: ultrasound, simulation, rubrics, bad news delivery, e-learning

Global health: triage, resuscitation, simulation

Trauma: trampoline injuries, cognitive impact of mild traumatic brain injury, abuse in the NICU



Examples of Fellows' Studies 2016-current

Administration: Optimizing billing for **procedural sedation** in the ED

Asthma: Standing Delegation Orders and **Triage Steroids**, Evaluating the inter-rater reliability and validity of the CRS in asthma patients,

Bronchiolitis: **High Flow Nasal Cannula** and Intubation risk

Quality Improvement: Barriers to **Flu vaccination** Best practice advisory, MIXED METHODS, Sedation

Disparities: RETROSPECTIVE Pediatric **submersions** and safety violations in city swimming pools, Demographic Discordances Between Patient Reported and Electronic Medical Records

EMS: Prehospital administration of steroids, Mixed-methods study on adherence to **pediatric seizure protocols** QUALITATIVE, Weight Tools

POCUS: POCUS **inferior vena cava** (IVC) measurements to assess the severity of the patient's dehydration; "**Development and Implementation of a Novel Point-of-Care Ultrasound Training for Pediatric Providers in Malawi**" COVID and POCUS

Global Health: Pediatric tropical infectious diseases in emergency medicine utilizing the **MODIFIED DELPHI METHOD**, Healthcare Provider Attitudes Toward the **Emergency Triage System in Belize**

EDUCATION, SIMULATION- RCDP, Debriefing Tools, PEM Fellow Procedures; Essential components for debriefing pediatric residents returning from global health experiences

Infectious Disease: Neonatal FEVER, RRTs

Evaluations in PEM Fellowship

360 evaluations-peer, self, outside rotations, procedural, PEM

Progress monitored monthly, quarterly, and semi-annually

Evaluated on all core competencies for PEM

Moonlighting

1st years can start moonlighting after 2 quarterly evaluations cycles complete and competency ascertained

TX license, DEA and DPS numbers

Hospital credentialing papers and GME moonlighting approval must be obtained

Prior to completion of 2136 required clinical hours: moonlight only at non training sites

After completion of 2136 hours, moonlight anywhere

2022-23 PEM Chief Fellows



Katie Guess MD



Adrienne Smallwood MD

PEMFellowChiefs@BCM.edu



**Texas Children's
Hospital®**

CONTACT US

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Fellowship Program**

Texas Children's Hospital

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