



Creating the Future of Emergency Care

EMERGENCY MEDICINE  
Annual Report

2017

AND BEYOND

The mission of the **Department of Emergency Medicine** at the University of Michigan is to create the future of emergency care. Our vision is an emergency care system that engages our patients and the entire health care system to provide solutions to the growing need and complexity of emergency medical care. We pursue this mission through advanced clinical practice, cutting-edge research, innovative education, and service to the health system, community, and our global partners. **M**



## Grants

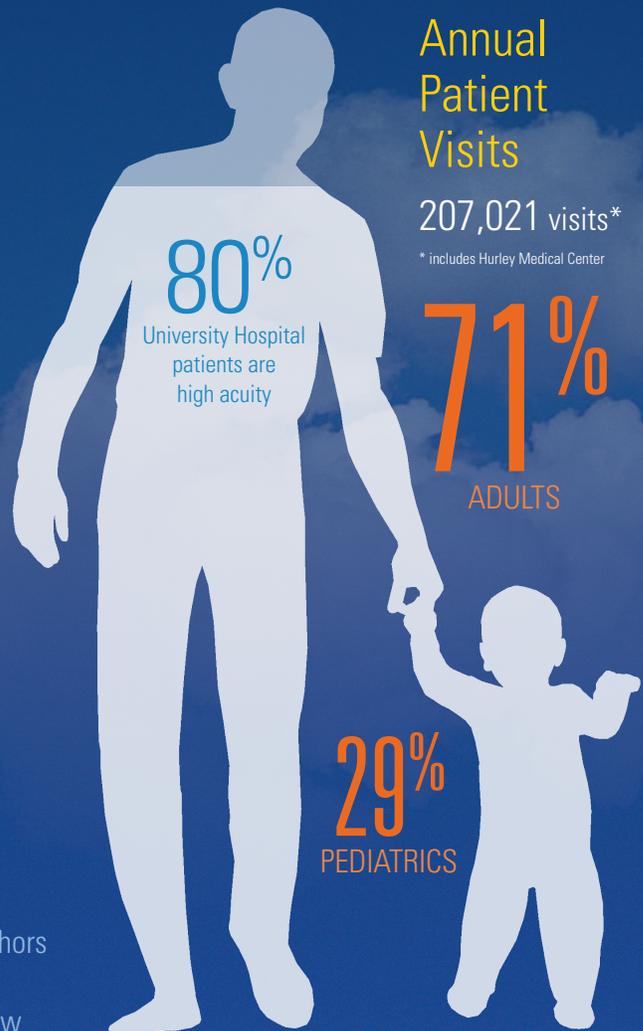
230 Completed  
94 Active



## Annual Patient Visits

207,021 visits\*

\* includes Hurley Medical Center



**#1** IN NIH FUNDING

most highly NIH funded  
Emergency Medicine  
Department in the US

Blue Ridge Institute for Medical Research

Individual EM Faculty listed as authors  
221 TIMES  
in peer-review publications

**\*HURLEY MEDICAL CENTER**  
99,014 total 32,207 peds

1,255

PATIENTS  
TRANSPORTED  
IN 2017

\$9.4M

RECIPIENT OF NIH  
FUNDING IN FY 2017

Blue Ridge Institute for Medical Research

Last year, Michigan EM expanded Survival Flight, our premier critical care transport program, by adding a Lear 75 fixed wing aircraft jet to our fleet of three twin-engine Eurocopter 155 rotor wing aircraft.

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## Michigan Service Network



### MICHIGAN MEDICINE FACILITIES

University Hospital  
C.S. Mott Children's Hospital  
St. Joseph Mercy Health System  
Hurley Hospital



### PRE-HOSPITAL NETWORK

Survival Flight  
Washtenaw/Livingston Medical  
Control Authority  
HEMS (Western Wayne County  
Medical Control Authority)



### MASSEY EMERGENCY CRITICAL CARE CENTER (EC3)

7,800 square foot critical care unit  
5 resuscitation/trauma bays  
9 patient rooms  
Intensive physician & nursing  
staffing levels



# Creating the Future of Emergency Medicine



**In 2017**, the University of Michigan Department of Emergency Medicine once again demonstrated its leadership in the multifaceted realm of emergency care. Our team succeeded in delivering the highest levels of patient care on a consistent basis, made innovative strides in educating tomorrow's providers and investigators, leveraged the multidisciplinary expertise of colleagues across campus to generate high-impact discoveries, and forged international partnerships with the potential to transform healthcare delivery on a global scale.

Here, in our 2017 annual report, we highlight some of the many projects and programs that are driving this excellence.

In the following pages, we offer examples of how the department has continued to address major challenges—and make major advances—by amplifying inherent strengths, expanding research frontiers, and enhancing emergency care delivery in significant and creative ways. Looking ahead to the next five years, we assess current and future challenges. We identify key areas of opportunity. And we set forth the strategies that will serve as our guide star as we pursue Michigan EM's ongoing mission to create the future of emergency medicine.



## The Year in Review

In 2017, Michigan EM made notable progress in each of its three primary domains of service.

### WORKING TO ASSURE OPTIMAL EMERGENCY CARE FOR EVERY PATIENT

Delivering maximally effective care is—and will remain—our first priority. In 2017, we continued to focus on improving outcomes and enhancing the patient experience while simultaneously reducing costs. With demand for ER services escalating to record levels, we focused our innovative powers on improving through-put while assuring the highest levels of patient satisfaction. Successful solutions were developed across our settings.

Hurley has been the site of the Flint Youth Injury study led by Michigan EM Professor Rebecca Cunningham. This two-year, NIH-funded research project has resulted in a new clinical risk index tool, known as SaFETY, that will enable emergency department physicians to gauge firearm injury risk among youth and provide access to violence prevention services.

### PURSUING TEAM SCIENCE FOR HIGH-IMPACT RESEARCH

Diversity is the hallmark of our highly sophisticated research portfolio. We are proud of the depth and breadth of our research impact.

In 2017 we extended our partnerships with industry, philanthropists like the Joyce and Don Massey Family Foundation and a wide range of federal and DOD funding sources to further extend the reach and impact of our robust research platform.

We continue to build diverse research teams from across U-M. Collaborations with disciplines such as computer science, public health, engineering, law, business and data science speed the impact of our

medical research. These collaborative teams cover the entire spectrum of research – from basic bench work and molecular biology through translational proof of concept testing to actual bedside clinical trials and health policy research.

We bring our research focus to a diverse range of problems – from understanding and impacting the deep root causes of injury to the highest level of battle field interventions. Knowledge from all cross fertilize our innovative solutions.

We deliver impact by building and directing research networks that touch patients in highly diverse settings. Our goal is to support diversity in patient backgrounds, socioeconomic circumstances, genetics and care settings.

Topping our long list of 2017 research achievements was SIREN (Strategies to Innovate Emergency Care Clinical Trials Network). Under the terms of this five-year cooperative award funded by NIH, the University of Michigan will serve as the nationwide clinical coordinating center for 11 universities and award hubs, with primary investigators at each. The overarching goal is to improve patient outcomes for emergency conditions such as traumatic brain injuries, seizures, spinal cord injuries, cardiac arrest and pulmonary embolisms.

SIREN, as well our other US research networks, set the stage for the development of a global network. By building a new global platform we can rapidly translate discoveries in diagnosis, monitoring and treatment to patients and caregivers worldwide.

With an eye toward this global network, in 2017, we strengthened our research ties with Peking University Health Service Center and, as part U-M Global REACH Program, continued our work with the Ghana Collaborative. With funding from Michigan Medicine's Global REACH program, the Michigan Center for

# Creating the Future of Emergency Medicine

Integrative Research in Critical Care (MCIRCC) welcomed physicians from the University of Sao Paulo to discuss future research collaborations on the topic of innovative sepsis treatment and care.

Our focus on team science allows us to build, study and test new discoveries far more rapidly than the current standard. The bridges we build today will allow us to exert a greater impact on patient care discoveries around the globe...our ultimate goal.

## EDUCATING THE EMERGENCY CARE LEADERS OF TOMORROW

As a preeminent leader in emergency care, we bear a special responsibility in preparing the next generation of providers and investigators. It was with this responsibility in mind that, in 2017, we implemented two new educational initiatives.

As our second major initiative, REACT (Research and Education in Acute Care Using Advanced Technologies) seeks to transform emergency medicine education, professional training and patient care through the use of augmented and virtual-reality training modules, educational simulations and new technology for long-distance critical care. Future initiatives are likely to incorporate home sensors, healthcare wearables, remote physical exams, self-directed online learning and other innovations.

## STRATEGIES FOR THE FUTURE: A FIVE-YEAR PLAN

Emergency care providers operate in a high-pressure, time-sensitive environment. This inherent complexity creates barriers to our ultimate objective: the seamless delivery of emergency critical care when, where and how it is most needed.

Our drive to create the future of emergency medicine demands that we be bold and disruptive in addressing all challenges. We have identified 5 main areas of opportunity and this report will illustrate how our current Michigan EM initiatives focus on delivering the future of targeted, high-impact innovations in emergency care delivery:

**1 Harnessing the power of evidence-based emergency medicine research to bring break through insights to our care systems.**

Among our numerous resources is the U-M Injury Center, one of 10 CDC-funded centers nationwide charged with advancing injury science and launching prevention initiatives related to opioid abuse, concussion, falls, youth violence, motor vehicle crashes, sexual violence and other injuries. Another area of great promise is the recently launched Acute Care Research Unit (ACRU), dedicated to studying, unifying and enhancing the delivery of acute care along its entire continuum.

Proudly, Michigan EM reclaimed its **#1 ranking in NIH-funded emergency research** in 2017 — and did so by a considerable margin.

Thanks to NIH funding, Michigan Medicine is one of just four sites nationwide now offering a multi-year, multidisciplinary program for advanced training in emergency critical care research. The intent of the K-12 Career Development Program is to prepare junior clinician-scientists for careers as independent NIH investigators by providing three years of mentored support. Research is focused on developing innovative approaches to severe, acute, life-threatening illness and injury in emergency settings.



**2 Harnessing the power of research tools, networks and collaborations to deliver rapid improvements in emergency care.**

Primary areas of focus will include the ongoing sepsis research collaboration between MCIRCC and the University of Sao Paulo, and the development of a global EM research network with partners in India, South America, China, Africa and northern Europe.

**3 Harnessing the power of technology to move us closer to providing the right care at the right time in the right place.**

The path to commercialization and rapidly delivering research ideas to the bedside is one of our major goals. MCIRCC leads our efforts with technologies like DRIVE and TBI ocular diagnostics.

**4 Harnessing the university's power to teach and mentor the next generation of leaders in academic emergency medicine.**

We will continue to build on our strong training programs through flagship initiatives such as the NIH-funded K12 Career Development Program and REACT.

**5 Harnessing the power of philanthropy by working with donors to change the face of emergency medicine.**

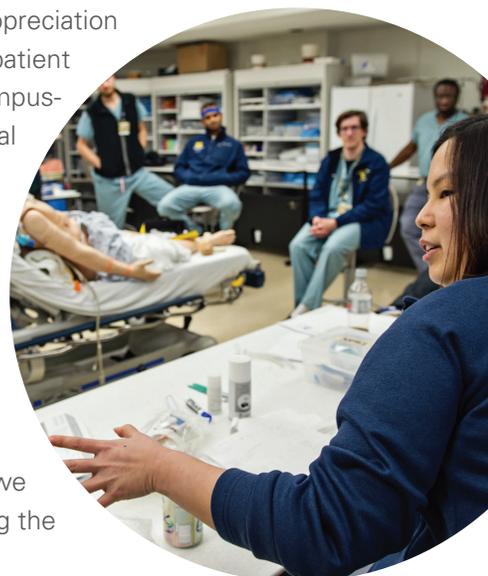
The Massey Foundation TBI Grand Challenge offers an excellent example of how philanthropy can provide the impetus for large and far-reaching endeavors. In 2017, this donor-funded competition—focused on improving the crucial early hours of care following a severe traumatic brain injury brought together researchers from across the globe and our campus and have potential solutions already in testing with the DOD.

## In 2018 and Beyond

Michigan EM will continue to bring the expertise, insights and skills of the entire University community to bear on the most pressing problems of emergency medicine. The goals we have laid out in this year's annual report are ambitious. They are also eminently realistic and achievable, based on our record of success and the array of resources we bring to the task before us.

Chief among those resources are the people of the university's Department of Emergency Medicine.

In closing, I extend sincere appreciation to the world-class clinicians, patient care teams, support staff, campus-wide collaborators and national and international partners in healthcare, industry and philanthropy who, each and every day, are making our progress possible. It is a privilege to lead this diverse and dedicated group. Together, we will continue to make landmark advances as we pursue our mission of creating the future of emergency care.



*Annual EM Resident  
Critical Care Boot Camp*

Sincerely,

**Robert W. Neumar, M.D., Ph.D.**

Professor and Chair

# We Are:

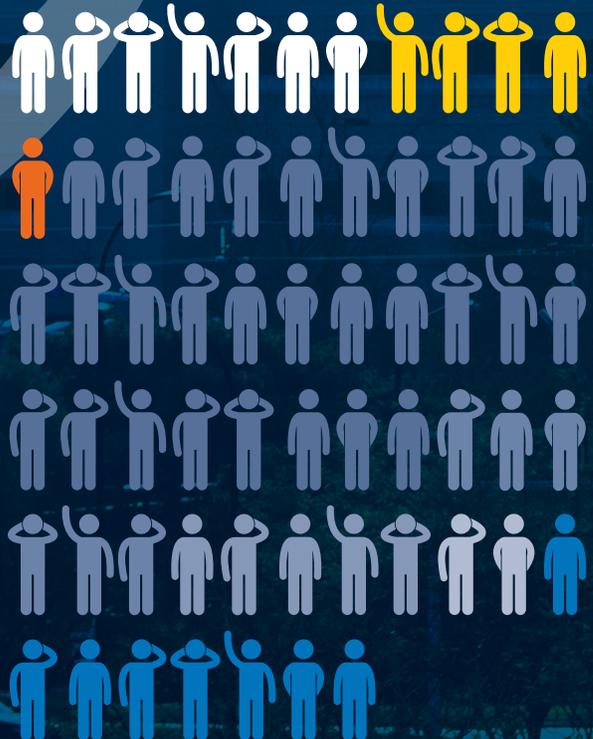


## A Team

Nearly 850 individuals make up Michigan's Emergency Medicine team. They are all part of a team — an interdependent, high performance network that spans clinical care, education, research and outreach. They are driven by a passion for improving the lives of our patients, returning them to health and home as rapidly as possible. Who are they? They are pilots, nurses, mechanics and dispatchers who make Survival Flight possible. They are gifted scientists pursuing new discoveries, from bench to bedside, from basic science through health services and policy work. They are prominent faculty and dedicated physicians. Outstanding PA's, nurses and care teams. Hard-working residents. Medical technicians. Receptionists, clerks, administrators and vital support personnel. Whatever their expertise, whatever their position, they all share the same mission of delivering exemplary care and achieving optimal outcomes for every patient. Together — we are changing the face of emergency medicine.

### Total Employees by job classification:

<b>Physicians</b>		
● Faculty	12%	
● Residents	7%	
● Fellows	2%	
<b>Patient Care</b>		
● RNs & Techs	45%	
● Hospital Support	10%	
● Survival Flight	8%	
● PAs	4%	
● <b>Education &amp; Research Support</b>	12%	



## Building Bridges — Working with Partners at Home and Around the World

Michigan Emergency Medicine forges partnerships within Michigan Medicine, across the state and across the world. Our mission, like all University of Michigan units, spans education, research, patient care and outreach. Our success in fulfilling that multifaceted mission depends on our ability to partner and collaborate. We work with our Michigan Medicine partners to more fully integrate acute care across the entire patient care spectrum. We've provided national leadership in accelerating impact in emergency medicine, and we're expanding that foundation to extend around the world. We're creating alliances with hospitals, payors, government funders, foundations, donors and academic institutions around the world to build and sustain a culture of future-forward innovation in emergency medicine.

### LOCAL AND NATIONAL

\*Our regional and national partnerships are wide-ranging and include:

- M** Joint residency programs with St. Joseph Mercy Hospital and our Michigan Medicine affiliate, Hurley Medical Center in Flint.
- M** MCIRCC is an entrepreneurial, multidisciplinary critical care research center that accelerates translational research impact at home, in hospital and on the battlefield. We work across multiple UM schools and colleges as well as industry and Department of Defense collaborators.
- M** MEDIC, in partnership with BC/BS of Michigan supports ED based quality improvements across Michigan.
- M** ACRU brings best practices to acute care delivery in Michigan and across US.
- M** U-M EM SIREN is the coordinating center for national network to improve Emergency Care Clinical Trials.
- M** Injury Prevention Center provides state and national solutions for battling the opioid epidemic and improving gun safety for children.
- M** REACT – working with high tech industry partners, bringing advanced technology to research and education in acute care.

### INTERNATIONAL

In conjunction with the U-M Global Reach program, we are building global partnerships to advance emergency care around the world. Our research efforts and collaborations touch every continent except for Antarctica.

\* We are working with our partners to create EMERGE – an international network for emergency medicine education and research by global experts. 8 sites across 6 countries are committed to this new international network.

## We Impact:

# Patient Care Research Education

# The Challenge Before Us:

- ⊕ Delivering the **right care** at the **right time** at the **right place**.
- ⊕ Maintaining the **best care** and **patient satisfaction**, in the face of increasing patient volume and high demand.
- ⊕ Creating the shortest path from **hospital** to **home** while optimizing **health**.

from home or  
injury site



to tr  
& tr  
EMERGEN  
+

PATIENT A  
of all care t



Our Emergency Medicine department is rich with innovative thinking, brilliant clinicians and care teams, world class research and access to cutting edge technology and design thinking embedded in our sophisticated academic health care system. Even with all these assets at our fingertips, we are still constantly challenged to deliver emergency care solutions that expand beyond our four walls and reach patients to provide the right care at the right time at the right place. Reaching patients and providing acute care within minutes of injury or illness onset, and helping them transition through the echelons of care that they need is amazingly complex. Our clinical teams are driven to break down barriers and use our strengths to provide our patients with personalized, effective care with a seamless approach to our care delivery... at the roadside, in the home, or at our bedside.

### WE'RE PUTTING OUR FOCUS ON THESE MAIN AREAS

- M** Bringing people, technology and clinical data into a more seamless workflow across the emergency care continuum.
- M** Using analytic and predictive tools on our data to gain greater insight into our current emergency care state. Use this insight to design and test new care models that deliver positive outcomes for our patients and care teams.
- M** Reduce barriers and build bridges across the boundaries that exist between our health-care settings and home. We believe that health should know no boundaries.

BRINGING  
NEW  
SOLUTIONS  
TO THE PATIENT –  
AT THE  
BEDSIDE &  
OUTSIDE  
OUR FOUR WALLS

transport  
treatment

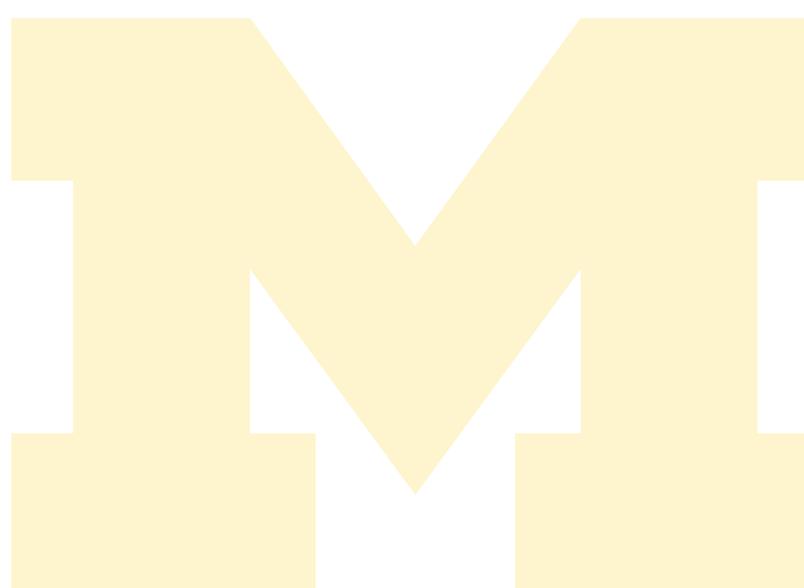
EMERGENCY DEPARTMENT

24

back to  
home



AT THE CENTER  
team decisions



# Adult Patient Care

Complex and challenging. Extending a compassionate hand. Intensive pursuit of delivering the best care, at the right time, in the right place, with the highest value. We take the challenge seriously.



The Michigan Medicine Adult Emergency Service provides world class trauma and emergency care to our region. We are the front door to the U-M Hospitals,

and we serve as the crucial starting point to our patients' return to health. Our clinical teams work to bring value to every step of our patient's journey. Our research excellence brings innovative solutions to the bedside. Our flourishing educational environment keeps care vibrant, patient-centric and compassionate.



Hurley Medical Center in Flint features the region's only Level 1 Trauma Center and Level II Pediatric

Trauma Center. UM EM faculty and the highly skilled Hurley team work together to meet the specialized needs of Genesee, Lapeer and Shiawassee counties.

The University of Michigan Emergency Medicine group at Hurley Medical Center participates in numerous local, state and national quality initiatives. We have a dedicated group of ED Physicians that leverage the strength of our electronic health record (Epic) to create quality and patient safety reports. The ED Quality and Patient Safety Committee has been very active creating reports that are real-time, actionable and of high value.

Over the past year, we have integrated the ED Quality process into the Hospital wide reporting system. The ED reports are now part of the FPPE/OPPE process and made available to the medical staff office for credentialing and re-credentialing.





# Emergency Critical Care Center (EC3)



**The Joyce and Don Massey Family Foundation Emergency Critical**

**Care Center (EC3)** opened its doors on February 16, 2015. The EC3 unit was the first and largest Emergency Department based ICU in the country and was created to improve access to timely, high-quality critical care and multidisciplinary protocols to ensure seamless transitions from the emergency department to inpatient ICUs. 92% of EC3 patients are enrolled in one of thirteen evidenced-based pathways in collaboration with our inpatient ICU units, to provide seamless continuity of care for patients who are crossing out of our unit and into the Inpatient environment.

## 2017 Major Initiatives

### TRAUMATIC BRAIN INJURY

Research, fueled by a generous gift from the Massey Family Foundation, and in conjunction with the U.S. Department of Defense, is bringing together collaborative expertise and innovation focused on the early diagnosis and treatment of TBI during the first 48 “golden” hours post injury. The EC3 provides a highly specialized bed-side environment to support our TBI research initiative.

### CLINICAL RESEARCH

The EC3 provides the environment and culture to accelerate efforts to improve the lives of patients through multidisciplinary research that ensures the skilled delivery of acute care at every stage. We develop our own investigator-initiated trials as well as participate and lead large multi-center trial networks such as NETT (acute neurologic problems) and PETAL (early diagnosis and treatment of acute lung injury).

### EDUCATION

The EC3 facility, our six EM-Critical Care dual boarded faculty members and our highly trained integrative care teams serve as the cornerstone of acute critical care education.

## Highlights

- M** We have two Emergency Critical Care training fellowships in partnership with both Internal Medicine and Anesthesiology.
- M** The annual EM Resident Critical Care Boot Camp – During this intense 5-hour session, residents from the intern level up through 4th year senior residents rotate through multiple simulation stations and hands-on didactic sessions covering a wide range of skills and knowledge required to care for the most severely sick and injured patients they will see in the ED and EC3.
- M** Extracorporeal Cardiopulmonary Resuscitation (ECPR) Simulations hosted in the EC3 – quarterly, we bring together faculty, nursing, respiratory therapy, social work, and the Michigan Medicine ECMO Office in the EC3 clinical setting for a large-scale team simulation.

### COLLABORATIONS

As the first ED based ICU in the US, we are actively sharing our experience and EC3 care model with institutions across the US and across the world. We are particularly proud of our partnership with the Joint Institute (comprised of the University of Michigan and Peking University Health Science Center) to provide a platform for visiting scholars to receive training that will improve critical care for patients on a global scale.



**6,651 patients treated since 2015**



**16% reduction in ICU admissions from the emergency department**



**37.3% reduction in emergency department to ICU admissions of less than 24 hours**

**92%**

**of EC3 patients are enrolled in an evidence-based care pathway**

# Pediatric Patient Care

## Major Initiatives

### 18-20 YEAR OLDS:

Children's Emergency Services extended emergency care services from a prior age cut off of under 18 years to 20 years of age from fall of 2017. This change in age to late adolescence is consistent with the American Academy of Pediatrics guidance and aligns CES at C.S. Mott with ~ 50% of all Children's Hospitals in the United States. This change did not impact those young adults who require subspecialty pediatric care; they continue to be managed in CES till age 25 years, at which time they transition to Adult Emergency Services.

**Children's Emergency Services (CES)**, located within Michigan Medicine's C.S. Mott Children's and Women's hospital, is a 33-bed Level 1 Regional Pediatric Trauma and Burn Center. We provide complex critical and acute care to children and families from our region as well as around the world.

In preparation for the transition of care of an anticipated 5,000+ young adult patient visits, CES's operational leadership proactively engaged key stakeholders from within the health system (Departments of Pediatrics, Internal Medicine, Surgery, & Obstetrics and Gynecology), across central campus (University Health Services & Sexual Assault Prevention and Awareness Center) and the community (Huron Valley Ambulance and other local agencies) to build relationships and develop comprehensive care plans. ~ 90% of patients in this age cohort are likely to need outpatient emergency services only and CES providers and staff have substantial experience in their emergency care as we care for young adults during mass events on campus, including football Saturdays.

The advantages of such a transition are numerous including: provision of age and developmentally appropriate comprehensive care, access to services such as child life specialists, age-appropriate health

literacy counseling at disposition, operational efficiency gains at AES (due to reduction of their patient volumes) and enhanced patient experience in CES. Indeed, operationally, we anticipate fewer young adult patients leaving prior to receiving care, thus improving access and safety in emergency care delivery.

## 2017 Quality Improvements

### QUALITY AND SAFETY/PATIENT CARE INITIATIVES:

In recognition of operational excellence, in June 2017, Children's Emergency Services received the Emergency Nurse's Association Lantern Award for 2017-2020, a national award *"given to emergency departments that exemplify exceptional practice and innovative performance in the core areas of leadership, practice, education, advocacy, and research... visible symbol of an emergency department's commitment to quality, presence of a healthy work environment and accomplishment in incorporating evidence-based practice and innovation into emergency care."* This was the second Lantern award awarded to CES (previously awarded 2014-2017).

In 2017 we led several initiatives focusing on quality, safety, patient satisfaction and health outcomes. Multidisciplinary teams worked to reduce variation in care amongst providers with implementation of new evidence-based clinical practice guidelines and antimicrobial stewardship guidelines for many conditions including fever in neonates, suspected bone and joint infections as well as community acquired pneumonia and urinary tract infections.

Additionally, we partnered with our colleagues in the department of surgery to develop a 6 hour ED observation protocol for patients with successful reduction of uncomplicated intussusception, sparing inpatient bed capacity and eliminating unnecessary prophylactic antibiotic administration. Hospitalization

was reduced by 85% and we achieved a 92% reduction in antibiotic administration.

CES partnered with the School of Engineering (Industrial and Operations Engineering) to critically evaluate our clinical operations and identify opportunities for enhanced value and efficiency.

Our multidisciplinary team worked closely with our Patient Family Advisory Council to prioritize projects to evaluate and improve processes, enhance quality of care, and optimize patient outcomes.

#### OPERATIONAL EFFICIENCY AND ACCESS:

In 2017, 27,861 patient/families visited CES, a 5% increase over the prior year, and nearly 50% growth over the past 6.

Our continued commitment to rapid assessment and care places us within the top 25th percentile of all U.S. children's hospitals for getting our patients into a room and seen by a provider. On an average, children are placed in a room within four minutes of arrival to the emergency department and evaluated by a medical provider team member within 19 minutes of their arrival!

#### KEY INDICATORS/PATIENT SATISFACTION:

High patient and family satisfaction scores: Despite continued increase in patient volumes and caring for children with severe illness, CES patients and families remain highly satisfied with the care they receive. Patient satisfaction scores for physicians and nurses are



consistently in the 90th percentile or above. The overall emergency room experience is rated as very satisfying (>90th percentile) with consistently high scores (>90th percentile) for likelihood to recommend CES for emergency care services to a family member or relative.



*Children's Emergency Services won the Lantern Award from the Emergency Nurses Association for the second time in a row.*

**27,861**  
ANNUAL VISITS

**5% ↑**  
OVER PRIOR  
FISCAL YEAR

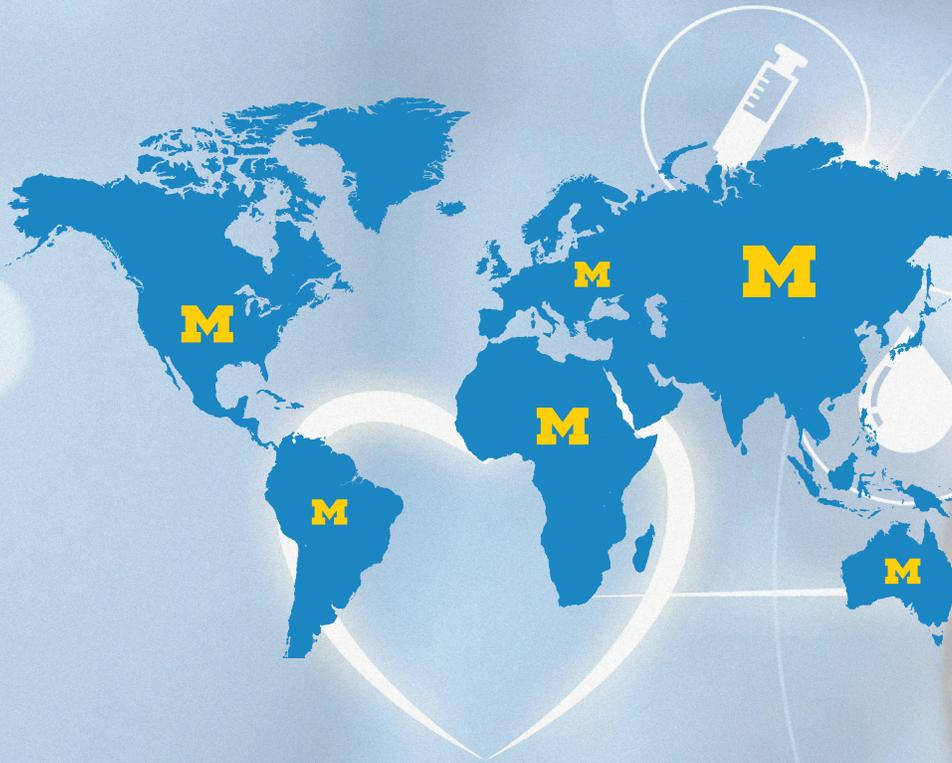
**47% ↑**  
OVER PAST 6  
FISCAL YEARS

**50%**  
OR GREATER  
ACUITY RATE

**17%**  
HOSPITALIZATION  
RATE

**7%**  
OF ALL ED ARRIVALS  
STAY <24 HOURS

# Research and Innovation Impact



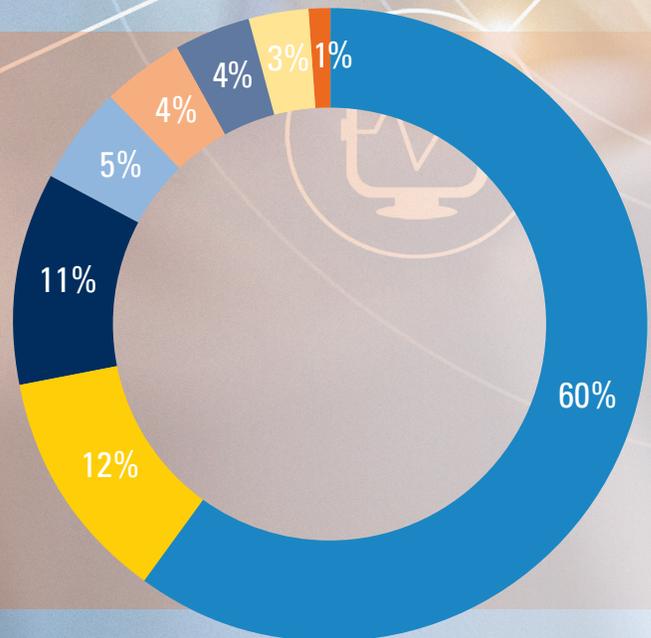
## MULTI-NATIONAL RESEARCH EXECUTION

We provide major leadership in US based clinical research networks.

Our research efforts and collaborations touch every continent except Antarctica. We touch emergency healthcare delivery in Africa, EMS in Australia, and have major research collaborations in South America, Asia, Europe and North America.

DISTRIBUTION OF FUNDING SOURCES, BASED ON 2017 GRANT EXPENDITURES

- NIH – Other
- NIH – R
- NIH – K
- Other
- Foundations
- CDC
- Federal
- Industry





The University of Michigan Department of Emergency Medicine Research Enterprise is a true global research conglomerate. Our local, national and global research networks deliver **rapid, sustainable, globally resonant impact**, changing the face of emergency medicine for the sake of patients and providers around the world.

**#1**  
RANKED RECIPIENT  
OF NIH FUNDING

**\$9.2M+** in FY 2017 and on track to exceed in FY 2018 • **230** grants completed • **94** active grants • of the top 10 NIH-funded EM principal investigators **5** are from U-M and **14** of the top 90 overall are from U-M • individual EM faculty listed as authors **221** times in peer-reviewed publications • over **100** publications a year

Full Spectrum of  
Research Capabilities:



Basic Labs & Animal Testing



Clinical Trials & Clinical Practice



Health Services & Knowledge Dissemination

FROM ROADSIDE TO BATTLE FIELD, FROM BENCH TO BEDSIDE, WORKING IN LABS AND CLASSROOMS AROUND THE WORLD.

Our Research Foci:

**Clinical**  
**Sepsis** Critical Care **Trial Design** Neurologic Emergencies  
 Health Care Medical Device-related Infection Medical Education  
 Finance and Reform **Resuscitation** Traumatic Brain Injury  
**Pediatric Emergencies** Global injury prevention **Stroke**  
 Health Services, Knowledge Health Translational research —  
 Dissemination and Policy diagnostics, devices and therapeutics

# Impact Through Research

## SIREN NETWORK SEEKS TO IMPROVE EMERGENCY CARE CLINICAL TRIALS

Creating and performing clinical trials in the acute care setting is difficult – it’s a very challenging, chaotic and busy environment. EM clinical leaders Dr. William Barsan and Dr. Robert Silbergleit, spent the last decade building an emergency care clinical trial network that collaborates with academic medical centers. They believe that the network approach allows clinical trials to be done in a more efficient way, and that the network gains value by accumulating expertise, knowledge and experience across the ED community.

Changing the way critical care is delivered. Preventing injuries. Advancing the science of emergency patient care. And so much more.

The U-M ED groups’ network was recognized by NIH in 2017, when the University of Michigan became the Clinical Coordinating

Center (CCC) for the NIH funded SIREN network in 2017. Beyond U-M, the network includes a data coordinating center at the Medical University of South Carolina and 11 award hubs with primary investigators at each.

SIREN seeks to improve the outcomes of patients with neurologic, cardiac, respiratory, hematologic and trauma emergencies by identifying effective treatments administered in the earliest stages of critical care.

The SIREN network will perform trials that focus in early treatment and may enroll patients across the entire spectrum of care – from pre-hospital all the way through home. SIREN trials will use innovative and adaptive trial design with patient centric outcomes, primarily in the adult setting.

It is anticipated that SIREN will initiate at least 4 multicenter clinical trials in the first 5 years. Currently, two clinical trials have been successfully funded by NIH. Both are focusing on the evaluation of specific treatment options for Severe Traumatic Brain Injury.

## U-M EMERGENCY MEDICINE LEADS URGENT NATION-WIDE EFFORT TO IMPROVE FIREARM SAFETY WITH CHILDREN AND TEENS

Firearm-related fatalities are the second-leading cause of death for children in the United States, from toddlers who accidentally discharge a gun to teenagers who use a firearm to die by suicide. Research on firearm injuries has lagged — and is needed now more than ever.

The University of Michigan Department of Emergency Medicine is leading a new nationwide effort to take on this issue, by engaging top minds on firearm injury from across the country. With support from the National Institute of Child Health and Human Development, U-M recently launched the **F**irearm-safety **A**mong **C**hildren & **T**eens Consortium. (FACT) The program’s funding will enable construction of the critical infrastructure required to launch large-scale research studies and deliver high impact prevention efforts. This work will be the genesis for training a new generation of firearm prevention scientists.

Investigators from many disciplines — including medicine, public health, psychiatry and economics — are partners in defining how to study the nature and prevention of firearm injuries among children and adolescents.

Early research outputs are already delivering high value insight to the prevention and policy arena. For example: African-American children are disproportionately impacted by intended and unintended firearm injury; and rural youth are disproportionately dying by suicide by firearm. Our growing national dialog about guns will best serve our country if it is informed by evidence and facts. This research consortium will hopefully lead data-driven discussions and will bring a special emphasis on data about children.



## ACRU BRINGS BEST PRACTICES TO ACUTE CARE DELIVERY

The Acute Care Research Unit (ACRU) was established in partnership with the Institute for Healthcare Policy and Innovation (IHPI) at the University of Michigan (U-M) in October 2016. The ACRU is a multidisciplinary research unit focused on studying the continuum of acute care delivery — including pre-hospital, emergency department, inpatient, and ambulatory care settings. The ACRU's work evaluates acute care access, cost, utilization, care transition, and effectiveness using mixed methods and community-based participatory research approaches.

In a multidisciplinary collaboration with U-M, RAND Corporation, and SaveMiHeart, the ACRU is conducting *Enhancing Pre-Hospital Outcomes for Cardiac Arrest (EPOC)*, a four-year study funded by the National Heart, Lung, and Blood Institute (NHLBI) on out-of-hospital cardiac arrest (OHCA), a common life-threatening event associated with poor survival outcomes. EPOC uses an integrative systems and sequential mixed methods approach to understand emergency medical service (EMS) system best practices across the continuum of OHCA care. EPOC will develop a toolkit of best practices to increase OHCA survival in the pre-hospital setting. This toolkit will be disseminated through EMS agencies, first-responders, and key state and national partners to improve OHCA survival in communities throughout the US.

## MEDIC SUPPORTS ED QUALITY IMPROVEMENTS ACROSS MICHIGAN

The US health care system continues to advance in prioritizing and incentivizing value in health service delivery. The specialty of emergency medicine must identify where opportunities exist for quality improvement and intervene to reduce low value care.

One key strategy for aligning emergency physicians with quality improvement efforts around reducing low value care is through partnership with other stakeholders, including hospitals and payers, within learning collaboratives. The Department of Emergency Medicine at Michigan Medicine houses the coordinating center of a ground-breaking quality improvement network called MEDIC (Michigan Emergency Department Improvement Collaborative) which is supported by Blue Cross Blue Shield of Michigan and Blue Care Network as part of their Value Partnerships program.

Established in 2015, MEDIC now has 17 diverse hospital EDs located across Michigan in the collaborative, representing over 1.2 million annual visits or about 30% of all ED visits in the state. MEDIC is committed to measuring, evaluating, and enhancing the quality and outcomes of adults and children seeking care in ED's. The project supports a dedicated clinical registry that currently contains nearly 2 million ED encounters, the basis for analysis of key emergency care quality indicators. MEDIC also hosts regular collaborative-wide meetings with its membership to review outcomes, develop strategies to change care delivery, and implement best practices for quality improvement. The collaborative leverages participants' shared knowledge and experience in combination with timely feedback on quality measure performance to improve the care of patients.



# Impact Through Education and Leadership

## Residency



**TYLER VANDYCK, MD**

The University of Michigan/ St Joseph Mercy Hospital residency program has provided outstanding training for a career as an emergency physician. Our faculty and resources here are on the cutting-edge of the latest

clinical science, and we are well-prepared to handle any clinical scenario. In addition to solid clinical training, we have ample opportunities to pursue scholarly work in research and education. As a fourth year nearing completion of this residency, I can confidently say I would choose this program again without hesitation.

# 1996

FOUR-YEAR RESIDENCY PROGRAM STARTED

# 64

SLOTS

# 10

SUBSPECIALTY TRACKS

# 3

HOSPITALS



IN HOSPITAL AND EXTERNAL SETTINGS



## Medical School



**SARAH BANKS**

**University of Michigan  
Medical School**

**M.D. Candidate Class of 2019**

The EM department at Michigan has afforded me really incredible opportunities since starting medical school. From the outset

there have been various experiences to allow younger medical students the chance to gain exposure to EM. From career exploration lectures, to the annual "EM Day," to the Clinical Reasoning Elective, the early exposure to EM was essential for me, particularly since the EM clinical elective is later than the other core electives. In addition to just learning about EM as a career choice, the EM department has held various workshops (splinting, suturing, etc) as well as coordinating events like rock climbing with the wilderness medicine group. Lastly, as I have decided to pursue EM as a specialty, the department has supported those interested in the specialty with advising, Q&As with the residents as well as the faculty, and has offered support in every aspect of navigating the residency application process.

# 180+

MEDICAL STUDENT ROTATORS

# 283

GRADUATES

# 54%

of residents graduating in 2018 entered academic faculty or fellowship positions

# 100%

PLACEMENT & BOARD PASS RATE

# 48%

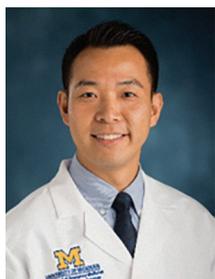
of residents graduating in the past 5 years are authors on peer-reviewed manuscripts within 1 year of graduation



Achieving excellence starts with a solid educational foundation, and that's exactly what you will find at Michigan. **Our vision is to be the premier training program for the development of future leaders in the field of Emergency Medicine.**

The Emergency Department training programs offer a wide range of experiences and follow a multi-disciplinary approach to teaching. The mentors are leaders in their areas of specialty, with an enthusiasm to share their knowledge.

## Fellowship



**TAICHI ITOH, MD**

The PEM Fellowship has shown itself to be outstanding since the day of my interview. Once I joined the program, it became quickly apparent I was training amongst some of the best and brightest medicine has to offer. I consistently

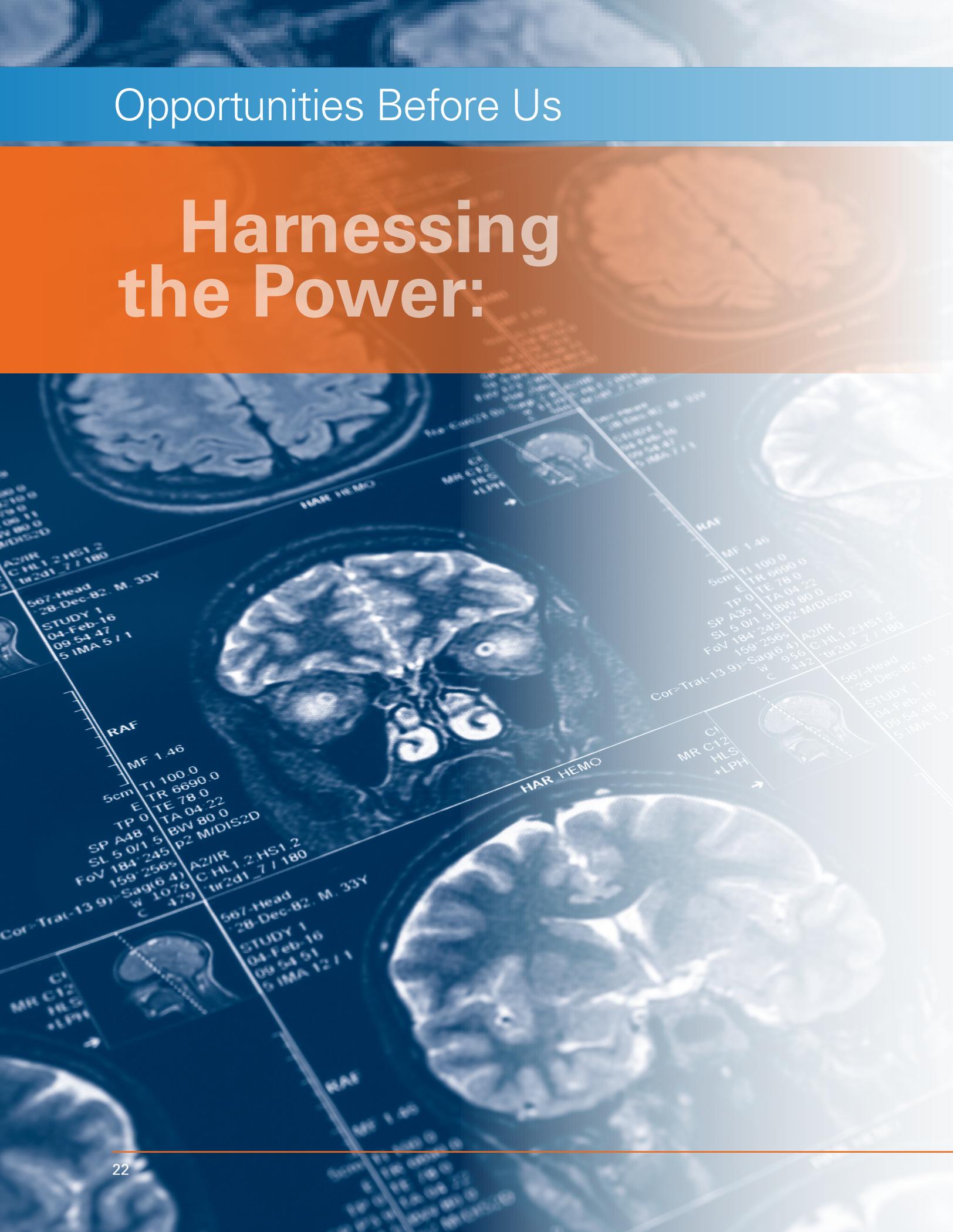
work with a purely amazing group of people who are

enthusiastic about fellows' clinical education and career development. The varying training sites allow a unique opportunity to care for both underserved and medically complex patient populations; preparing us for any environment after graduation. The program consistently provides strong support for scholarly activity opportunities and mentorship. I can say with confidence, that the PEM Fellowship provides exceptional opportunities in research, patient care and education.

# Clinical Ultrasound Pediatric Medical Education Critical Care

# Opportunities Before Us

# Harnessing the Power:



## Harnessing the Power of evidence-based emergency medicine research to bring breakthrough insights to our care systems.

The University of Michigan Injury Prevention Center is one of nine Injury Control Research Centers funded by the Centers for Disease Control and Prevention (CDC). The U-M Center focuses on injury prevention, education, and research, and brings evidence-based solutions to our ED for testing and dissemination. We are currently providing breakthrough solutions for the opioid crisis in our communities.

### CURRENT INITIATIVES:

- M** In collaboration with Michigan law enforcement, the Center created a system for Opioid Surveillance that will provide real time data statewide in the next 3-5 years.
- M** The Center has developed an ED intervention to identify patients at risk for potential overdose and provide patients and their support group with tools to prevent future overdose. This program has screened thousands of UMHS ED patients and demonstrated success in decreasing overdose risk. It is currently being disseminated to homeless shelters and primary care clinics across Michigan.
- M** The Center supports the Michigan Department of Health and LARA (Licensing and Regulatory Affairs) by developing health care provider training modules for identifying at-risk patients and guidelines for appropriately prescribing opioids in the ED.
- M** The Injury Prevention Center collaborated with U-M Office of Research, and the Institute for Healthcare Policy and Innovation to found and maintain The Opioid Solutions Network ([www.opioids.umich.edu](http://www.opioids.umich.edu)), a national repository of opioid research and education materials.



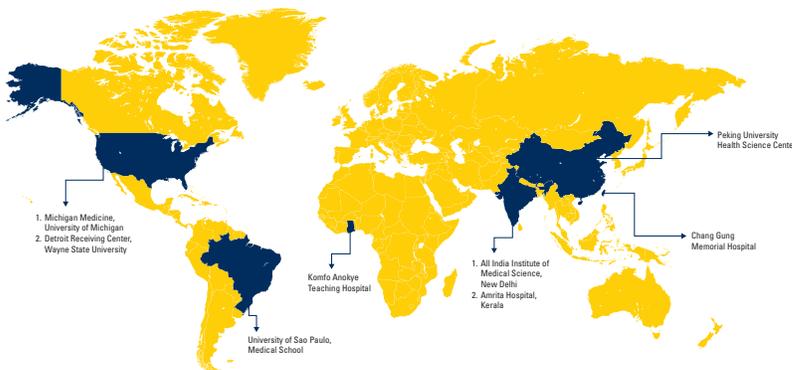
## Harnessing the power of research tools, networks and collaborations to deliver rapid improvements in emergency care.

Emergency medicine based research networks are an efficient platform to address many low-frequency, high-stakes events in an efficient and effective manner. The emergency department at the University of Michigan participates in many such networks but is particularly proud of its leadership role in two national networks – SIREN (Strategies to Innovate Emergency Care Clinical Trials Network) and PECARN (Pediatric Emergency Care Applied Research Network).

Given the success of these national research networks, we now expand our horizons to the global stage.

# Opportunities Before Us

Emergency care is global in nature, yet the epidemiology of emergency care across various nations, especially in the developing countries is largely unknown. Reasons for this gap in knowledge include a lack of common taxonomy, absence of robust reporting mechanisms and that emergency medicine itself is varyingly recognized as a subspecialty. The department of emergency medicine at the University of Michigan is addressing this important knowledge gap by creating EMERGE – a global network for Emergency Medicine Education and Research by Global Experts.



The overall goal of EMERGE is to reduce the global burden of disease and improve the health of all nations, with an ultimate goal to improve the care of acutely ill and injured patients. EMERGE will leverage the extensive experience of the Global REACH program at U-M. The EMERGE and Global Reach partnership will integrate the epidemiological perspective of medical and surgical emergencies to, build a body of knowledge by collecting the necessary data to guide population health efforts and nurture researchers in emergency care.

Only in its first year, nascent efforts in EMERGE have yielded some robust results. Currently, we have 8 sites across 6 countries. USA, China, Ghana, India, Brazil and Taiwan have committed to being a part of this network. Furthermore, interest from two other countries (Finland and Austria) has allowed EMERGE to have representation from 5 of 7 continents as we seek to build a truly global network. The international need to understand the global burden of emergency care is evidenced by the fact that each site is willing to support a first study without extramural funding while relying on “sweat-equity” with the investment in time and effort to lay the foundations of this exciting new network. As we build our network, we intend to collaborate with each participating institution to develop a robust set of educational materials to mentor and nurture the next generation of researchers in emergency medicine, thus strengthen and in many instances develop an infrastructure to grow and sustain our efforts.

**Harnessing the power of technology to move us closer to providing the right care at the right time in the right place.**

## **MCIRCC BRINGS TRANSFORMATIONAL RESEARCH TO THE BATTLEFIELD AND THE BEDSIDE.**

The Michigan Center for Integrative Research in Critical Care (MCIRCC) brings together physicians, engineers, data scientists and industry partners from around the world to transform Critical Care through innovation, integration and entrepreneurship. Breakthrough research and bedside solutions are accelerated to bedside testing, in a drive to change the face of critical care medicine.

## Pediatric Resuscitation MODULE



### CURRENT INITIATIVES:

**M** MCIRCC was awarded over 10 million dollars in grants by the Department of Defense to develop Prolonged Field Care strategies to improved combat casualty care and survival on the battlefield. Projects ranged from developing means to control massive hemorrhage, to improved brain monitoring after TBI, to performing goal directed therapy across multiple echelons of care.

**M** In partnership with the Massey Foundation, MCIRCC carried out a highly successful national TBI (Traumatic Brain Injury) summit gathering experts from around the country to exchange and discuss the latest advancements in TBI. In addition, MCIRCC held a TBI Grand Challenge funding 6 exciting projects to develop new diagnostics, devices, therapies and digital health technologies to improve the care and outcomes of victims of TBI.

### BEDSIDE DIAGNOSTICS FOR TIMELY DIAGNOSIS AND TREATMENT OF SEPSIS – WHEN MINUTES COUNT

Emergency medicine has been at the forefront of rapid diagnosis and treatment delivery for the most time sensitive conditions such as acute myocardial infarct and stroke. Providing the right care at the right time in the right place for these conditions has required fostering collaborations between pre-hospital providers, emergency physicians, nurses, radiologist, and organ specific specialists. We are continuing and expanding this grand tradition of collaboration and care coordination to discovering, developing and evaluating the next generation of bedside diagnostics for timely diagnosis and treatment of sepsis.

We have developed deep collaborations with faculty in chemistry, engineering, and material science to bring the time required to diagnosis bloodstream infection from a matter of days to mere hours. This

requires detection of a single bacterial cell in a milliliter of blood without waiting for culture to grow. Furthermore, these culture-free diagnostics provide ultrasensitive monitoring of bacterial growth in the presence of antibiotics. Ultimately, we intend to bring narrow, target-specific antibiotic decision making to the emergency department. No longer will emergency physicians provide one-size-fits-all broad-spectrum antibiotics, rather the right drug for the right bug at the time when the care team first suspects sepsis.

## Harnessing the university's power to teach and mentor the next generation of leaders in academic emergency medicine.

### MCIRCC TRAINS NEXT GEN PHYSICIAN INNOVATORS

MCIRCC was recently awarded the NIH K12 Career Development grant in Emergency Critical Care Research. As only one of 4 such programs in the country, this multidisciplinary training program is allowing for the creation of the next generation of emergency and critical care innovators. Chosen scholars may choose mentoring teams led by nationally known senior clinician-scientists in Emergency Medicine, Pulmonary and Critical Care, Neurology, General and Trauma Surgery, Cardiovascular Disease, Biomedical Engineering, and Biostatistics. This gives trainees an understanding of all phases of emergency critical care research with an emphasis on biotechnology and innovation.



*Extracorporeal Cardiopulmonary Resuscitation (ECPR) large scale team simulations take place in EC3 quarterly*

# Opportunities Before Us

## REACT – RESEARCH AND EDUCATION IN ACUTE CARE WITH ADVANCED TECHNOLOGY BRINGS HIGH TECH TO ED TEAMS

Emergency care is a fast paced, inter-professional team based specialty. Emergency departments (EDs) are vulnerable to errors due to time-pressured decision-making in an uncertain environment. Errors occur because cognitively-dense and operationally-complex decisions involves multiple providers with varying experiences interacting as part of a team who are expected to perform life-saving procedures and coordinate care with consultants. However, as this specialty evolves, the lack of adequate training and exposure to clinical diversity of low frequency, high stakes events such as cardiopulmonary resuscitation at community emergency departments has led to a significant disparity in access to high quality care.

Recent technological advances in the development of wearable Augmented Reality (AR) and Virtual Reality (VR) headsets have provided users with new tools to visualize and interact with the world around them. The University of Michigan's Department of Emergency Medicine's REACT initiative is focused on finding new and innovative ways of integrating such advanced technologies into education and acute care delivery.

In collaboration with industrial partners we have introduced an innovative and disruptive technology called augmented reality which superimposes information (such as images and sounds) on the world we see (adds to normal reality) to lay the groundwork for Augmented Reality Telemedicine (ART) at the

University of Michigan. The long-term goal of ART is to change the paradigm on acute care delivery and disparities in acute care delivery. We currently are studying how ART can assist the provider by integrating AR seamlessly in clinical care by access to expertise either embedded in the AR devices (i.e. the device is the expert) or using it as a platform to access geographically remote experts (human is the expert) in real time. We are currently testing applications for use in specific clinical situations.

Further, we are developing applications for the use of virtual reality for situational awareness training of teams of emergency providers, as well as for use in public health and to empowering patients in shared decision making in order to improve the emergency care at U-M. We are actively collaborating with industry partners including Microsoft, Oculus and Intel and have several proof-of-principle projects in development.

## Harnessing the power of philanthropy by working with donors to change the face of emergency medicine.

2.5 million children and adults sustain Traumatic Brain Injuries (TBI) in the U.S. each year, making it a major cause of death and disability that can have severe and lasting effects on individuals, families, and communities. Out of personal experience, the Joyce and Don Massey Family Foundation partnered with Michigan Medicine through a generous gift that is creating a brighter future for emergency and critical care through bold research, unparalleled education and exceptional patient care.

Over the past 3 years, this partnership is has started driving innovative TBI research to a new level at a blistering pace. Weaving research, education and patient care together into a sophisticated TBI focused tapestry, with results already progressing to the bedside and battlefield, improving patients' lives.



*Under the auspices of REACT and supported in part by a grant from Microsoft, a telemedicine project now underway in the College of Engineering is using Microsoft's HoloLens® devices to create new tools for streamlining hospital logistics, comforting patients and saving lives.*



The Massey TBI Grand Challenge Framework Delivers

# IMPACT



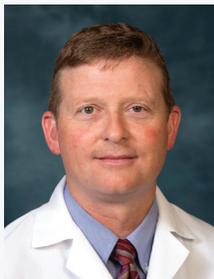
# Highlights & Future

We celebrate our impact – from the bedside to building bridges across the world. **We thank our patients, our clinical and research teams, our partners, and our donors** for working together to provide solutions to the growing need and complexity of emergency medical care.

## 2017 In Review

In 2017, our team succeeded in delivering the highest levels of patient care, made innovative strides in educating the providers of tomorrow, expanded the depth and breadth of our research enterprise and forged international partnerships with the potential to transform healthcare delivery on a global scale. We thank our patients, our clinical and research teams, our partners and our donors for joining us on this journey. We celebrate our successes and look forward to our future endeavors.

## New Leadership



**Phillip Scott,  
MD, MBA,  
FAAEM, FAHA**

Dr. Phillip Scott accepted the role of Associate Chair for

Research for the Department of Emergency Medicine in 2017. Dr. Scott served as principal lead for Michigan StrokeNet, the Regional Coordinating Center for the national NINDS StrokeNet network, and is stepping up to provide expanded leadership as we deepen and strengthen our departmental research impact.



**Brian Zink,  
MD**

Dr. Brian Zink accepted the position of Senior Associate Chair for Education

and Faculty Development in 2017. Dr. Zink's primary areas of focus are mentoring, faculty and leadership development, education, medical humanities, the history of emergency medicine, and current policy-making in health care. He was a founding faculty member in the Department and from 1992-2006 was a researcher in brain injury and alcohol effects in trauma and served as Associate Dean for Student Programs.



**Rebecca Cunningham,  
MD**

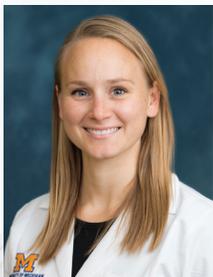
We congratulate Dr. Rebecca Cunningham on her new appointment

as Associate Vice President for Research-Health Sciences in the University of Michigan Office of Research. This is a tremendous opportunity for Dr. Cunningham to help lead the research efforts at the University of Michigan. We are incredibly proud that she has been chosen for this important leadership role. Dr. Cunningham will continue to work clinically in the ED and serve as Director of the Michigan Injury Center.

# New Faculty, Fellows & Residents



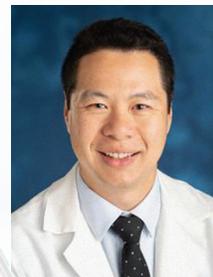
## New Faculty



**Christine Brent, MD**



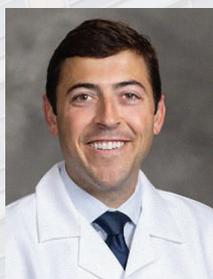
**Michael Cover, MD**



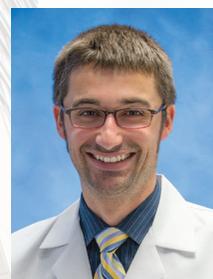
**Christopher Fung, MD**



**Colin F. Greineder, MD, PhD**



**Nate Haas, MD**



**Graham Smith, MD**

## Chief Residents

2018-2019 (FY19)



**Andrew Adan, MD**



**Christina Cutter, MD, MSC**



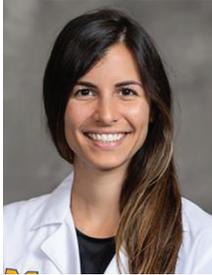
**Adam Nicholson, MD**



**Robert Turer, MD, MS**

# New Faculty, Fellows & Residents

## New Fellows EDUCATION



Mary Haas, MD



William Peterson, MD

## PEM



Nichole Klekowski, MD



Aditi Mitra, MD



Daphne Morrison Ponce, MD

## CRITICAL CARE



Reid Smith, MD



Crystal Ives Tallman, MD

## ULTRASOUND



Anee Khan, MD



## Awards & Accomplishments

University of Michigan's medical transport programs flight nursing staff, have mastered the basic skills necessary to provide point of service ultrasound for patients during transport. This initiative was directed by **Dr. Ross Kessler** who is the Co-Director of Clinical Ultrasound and the Associate Director of the Clinical Ultrasound Fellowship in the Department of Emergency Medicine at the University of Michigan.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201703/survival-flight-nursing-staff-now-ultrasound-trained>

We congratulate **Dr. Rebecca Cunningham** on her new appointment as Associate Vice President for Research-Health Sciences in the University of Michigan Office of Research.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201704/rebecca-cunningham-appointed-avp-research-health-sciences>

The Chief Concern Course (CCC) co-directed by **Michael Cole, M.D.**, assistant professor of emergency medicine, and **Sandro K. Cinti, M.D.**, professor of internal medicine. **Michelle M. Daniel, M.D.**, assistant dean for curriculum and assistant professor of emergency medicine and learning health science were one of five faculty projects to receive a Provost's Teaching Innovation Prize (TIP) for creative and inventive approaches to improving student learning.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201704/medical-school-course-wins-teaching-innovation-prize>

Children's Emergency Services won the **Lantern Award** from the Emergency Nurses Association for the second time in a row. The Lantern Award is a recognition given to emergency departments that exemplify exceptional practice and innovative performance in the core areas of leadership, practice, education, advocacy and research.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/childrens-emergency-services-again-honored-lantern-award>

Three multidisciplinary research teams from the **Michigan Center for Integrative Research in Critical Care** have received research awards from the U.S. Department of Defense's Combat Casualty Care Research Program.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/mcircc-wins-748m-prolonged-field-care-grants>

**Dr. Phillip Scott** has accepted the role of Associate Chair for Research for the Department of Emergency Medicine. His tenure begins September 1, 2017. We very much look forward to his leadership as the depth and breadth of our research programs continue to grow.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201709/phillip-scott-md-named-new-associate-chair-research>

**Drs. Marie Lozon** and **Kevin Ward** as one of the 23 Dean's Award Recipients for 2017.

**Dr. Lozon** is receiving the Outstanding Clinician Award. This is a well-deserved honor acknowledging Dr. Lozon's tremendous contributions to the Department and to Michigan Medicine.

**Dr. Kevin Ward** is receiving the Innovation and Commercialization Award. This is a well-deserved honor acknowledging Dr. Ward's outstanding contributions to Michigan Medicine as Executive Director of Fast Forward Medical Innovation (FFMI) and his leadership in developing new technologies to improve emergency medicine and critical care as founding Director of the Michigan Center for Integrative Research in Critical Care (MCIRCC).

The Dean's Awards Program recognizes Medical School faculty and staff who demonstrate exceptional accomplishment in the areas of teaching, research, clinical care, community service, innovation and administration.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201709/2017-deans-award-recipients>

## Awards, Accomplishments & Top News

**Professor Brad Uren, MD** Assistant Professor of emergency medicine was reappointed by Gov. Rick Snyder to the Michigan Pharmacy and Therapeutics Committee

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201710/dr-brad-uren-reappointed-governor-snyder>

The November issue of EMS World features a special cover report on a broad-based effort to improve sudden cardiac arrest survival in Michigan, where leaders of the local **"SaveMIHeart"** initiative have partnered with the HeartRescue Project to try to double SCA survival in three years.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201711/911-operators-should-provide-cpr-instructions-guidelines-say>

Oculus Education blog featured the work of **Dr. Mahajan** and **Michelle Aeberold** on PALS Simulation

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201711/dr-mahajan-featured-oculus-blog>

According to the National Institutes of Health project reporter, **U-M is leading the way** in NIH emergency medicine-funded research projects.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201711/emergency-medicine-leads-way-nih-funded-projects>

Dr. Rajesh Mangrulkar, Associate Dean for Medical Student Education announced that **Dr. Andrew Barnosky** has been selected to be the 2018 White Coat Ceremony Speaker.

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201712/andrew-barnosky-do-has-been-named-2018-white-coat-ceremony-speaker>

## Top News

### **New Michigan Law Could Save 400 Lives a Year**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201701/new-michigan-law-could-save-400-lives-year>

### **Rural America, already hurting, could be most harmed by Trump's promise to repeal Obamacare**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201701/rural-america-already-hurting-could-be-most-harmed-trump%E2%80%99s-promise-repeal-obamacare>

### **An Obamacare Repeal Would Hit Middle America Hardest**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201701/obamacare-repeal-would-hit-middle-america-hardest>

### **How a travel ban could worsen doctor shortages in US hospitals and threaten primary care**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201702/how-travel-ban-could-worsen-doctor-shortages-us-hospitals-threaten-primary-care>

### **Leverage 'Low-Hanging Analytics' to Make Patient Data More Powerful**

<http://www.medicineatmichigan.org/web-exclusives/2016/october/u-m-selected-nih-career-program>

### **What does a heart attack feel like?**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201702/what-does-heart-attack-feel>

### **Michigan Medicine launches study of life-saving resuscitation treatment for sudden cardiac arrest**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201703/michigan-medicine-launches-study-life-saving-resuscitation-treatment-sudden-cardiac-arrest>

### **After a Clinical Trial on Midazolam for Seizures, Emergency Use of the Drug Rises**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201703/after-clinical-trial-midazolam-seizures-emergency-use-drug-rises>

### **Congress and FDA nominee heap love on 'adaptive trials'**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201704/congress-fda-nominee-heap-love-%E2%80%99adaptive-trials%E2%80%99>

### **Syria Nerve Gas Attack Points to U.S. Need For New Antidote**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201704/syria-nerve-gas-attack-points-us-need-new-antidote>



### **Predicting a Patient's Future Firearm Violence Risk in the Emergency Department**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201704/predicting-patient%E2%80%99s-future-firearm-violence-risk-emergency-department>

### **New tool predicts patient's gun violence risk in ER**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201704/new-tool-predicts-patients-gun-violence-risk-er>

### **SAEM 2017: EM Physicians Should Stay Current on Studies to Up Their Critical Care Game**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201705/saem-2017-em-physicians-should-stay-current-studies-their-critical-care-game>

### **A SMARTer Way to Discover New Stroke Treatments**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201706/smarter-way-discover-new-stroke-treatments>

### **Lessons for first responders on the front lines of terrorism**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/lessons-first-responders-front-lines-terrorism>

### **Cardiac Arrest Research Losing NIH \$\$ Much more is being spent on stroke and heart disease**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/cardiac-arrest-research-losing-nih-much-more-being-spent-stroke-heart-disease>

### **NIH Investment in Cardiac-Arrest Research Sinking**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/nih-investment-cardiac-arrest-research-sinking>

### **Why Does Cardiac Arrest, a Leading Killer, Receive Only 0.2 Percent of NIH Funding?**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/why-does-cardiac-arrest-leading-killer-receive-only-02-percent-nih-funding>

### **MCIRCC Wins \$7.48M in Prolonged Field Care Grants**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201707/mcircc-wins-748m-prolonged-field-care-grants>

### **New CDC Funding for U-M Injury Center Probes Solutions to the Opioid Epidemic and Injuries Nationally**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201708/new-cdc-funding-u-m-injury-center-probes-solutions-opioid-epidemic-injuries-nationally>

### **New 'SIREN' Network Seeks to Improve Emergency Care Clinical Trials**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201708/new-%E2%80%99siren%E2%80%99-network-seeks-improve-emergency-care-clinical-trials>

### **Pediatric age limit extended across Michigan Medicine**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201709/pediatric-age-limit-extended-across-michigan-medicine>

### **Hands On CPR Training at Fan Fest this Saturday**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201709/hands-cpr-training-fan-fest-saturday>

### **Ripple Effect: How Hurricanes and Other Disasters Affect Hospital Care**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201709/ripple-effect-how-hurricanes-other-disasters-affect-hospital-care>

### **Urgent Care vs. the Emergency Room: What's the Difference?**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201709/urgent-care-vs-emergency-room-what%E2%80%99s-difference>

### **100,000 Points of Data**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201710/100000-points-data>

### **When Should I Take My Child to the Emergency Room?**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201710/when-should-i-take-my-child-emergency-room>

### **Still Going, Growing Strong: Joint Institute Celebrates 7 Years With Beijing Symposium**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201710/still-going-growing-strong-joint-institute-celebrates-7-years-beijing-symposium>

### **The power of three**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201711/power-three>

### **SaveMiHeart featured in EMS World Magazine**

<https://medicine.umich.edu/dept/emergency-medicine/news/archive/201711/savemiheart-featured-ems-world-magazine>

## A Continuing Commitment

In the years ahead, emergency medicine will change in fundamental ways. And the University of Michigan will lead many of those changes. We will create the future of emergency medicine through our focus on data-driven, patient-centered innovation... our forward-looking, research-based improvements in the treatment paradigm... our path-breaking collaborations with healthcare providers across the country and around the world... and our ongoing, unwavering commitment to provide every patient with the most advanced and compassionate care possible. **M**





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