

### WE TRANSFORMED CARE IN A CRISIS

MCIRCC teams rapidly adapted research and lessons learned from other critical illnesses to develop diagnostic, protective, and therapeutic solutions specific to COVID-19. Clinicians, engineers, data scientists, and more, all brought their combined expertise together to bear on the greatest health crisis in over a century.



#### MCIRCC COVID-19 SOLUTIONS PROFILED WORLDWIDE

Science Magazine, The London Telegraph, Al Jazeera, News Ghana—media outlets around the world covered the MCIRCC member-developed AeroSolve Helmet & Tent, poised to revolutionize patient care by providing both negative pressure and personal protective equipment in one.



#### DATA ANALYTIC PREDICTS DETERIORATION IN COVID PATIENTS

The MCIRCC Data Science Team developed a specialized version of its PICTURE predictive analytic tuned to COVID-19. The analytic quantifies a patient's risk of deterioration and alerts clinicians, allowing them to intervene hours in advance and save lives.



#### MCIRCC MEMBER'S STUDY EXPANDS KNOWLEDGE OF COVID TRANSMISSION

Study led by MCIRCC member Cindy Hsu, MD, PhD, is among the first to suggest that defibrillation followed by chest compression during cardiac arrest is an aerosol generating procedure. For this research, Dr. Hsu was presented with a Young Investigator's Award at the American Heart Association's Resuscitation Science Symposium.

By April of 2020  
MCIRCC members had

# 20+

COVID research projects  
actively in development

TOGETHER, WE ARE...

# 219 STRONG

FROM

# 43

 U-M DEPTS.

# 7

 SCHOOLS & COLLEGES

### WE WENT ABOVE AND BEYOND—NO MATTER WHAT

The COVID pandemic changed the way we worked. Fortunately, one of MCIRCC's greatest strengths is our ability to pivot. Whether at home or in the lab, by phone or screen, in scrubs or sweatpants—nothing could stop us from carrying out our mission of **transforming critical care through innovation, integration, and entrepreneurship.**

#### INNOVATION & DEVELOPMENT

# 5

 new licensed products

- AeroSolve Tent
- AeroSolve Helmet
- "Stop the Bleed" Tourniquet
- "GROA" Balloon
- "TBI Companion" Smartphone App

# 2

 new spin-off companies

- InspireRx, LLC. Spin off
- Precision Trauma, LLC. Spin off
- Elm Park Labs

#### TRAUMATIC BRAIN INJURY GRAND CHALLENGE

Over **\$650k** in funding available  
+ **\$40k** accelerator award  
TO **4** teams

**Accelerator Award Winning Team:**  
Alyse Krausz, MS; Mark Burns, PhD;  
Frederick Korley, MD, PhD

#### MASSEY TBI VIRTUAL CONFERENCE

Featuring keynote speaker **Daniel Spaite, MD, FACEP.**

The new virtual format opened up the event to a global audience. Viewers tuned in from:



- UK
- EGYPT
- VENEZUELA
- PERU

#### DATA SCIENCE TEAM

Successfully completed **\$90k** MIDAS PODS grant and integrated PICTURE into the **EPIC** cloud platform



PICTURE saw major developments in 2020. Three versions are approved for CIC use in the hospital: Rehabilitation, All-Cause-Deterioration, and Pediatric All-Cause-Deterioration.

#### PROPOSAL DEVELOPMENT

Submitted **42** grants for a total of over **\$79M**

One such grant was for a T32 Training Program in collaboration with the College of Engineering. The program would train researchers in the design, implementation, & commercialization of engineering solutions for critical care.

#### PRE-CLINICAL CRITICAL CARE LAB

Published **9** studies and engaged in over **\$9M** in awarded projects

#### CLINICAL RESEARCH UNIT

Published **2** studies and received funding from



# DEPARTMENT OF DEFENSE

to continue researching ARDS in patients with COVID-19