WAYNE STATE
School of Medicine

THE RESUSCITATOR

JANUARY 2019

SPECIAL POINTS OF INTEREST:

- **9th Annual Critical Care Conference—March 21, 2019**
- **Edward S. Thomas Memorial Golf Outing—May 13, 2019**
- **Grand Rounds occur every Thursday at SGH and DRH.**

INSIDE THIS ISSUE:

Letter from the Chair

Brian J. O'Neil, MD, FACEP, FAHA
Munuswamy Dayanandan Endowed Chair
Specialist-In-Chief, Detroit Medical Center

The Wayne State Department of Emergency Medicine continues to remain in an excellent position regarding our four pillars of missions, education, research, clinical care and community engagement. As we look back in 2018, we should take pride in the plethora of awards and grant funding we received. Further, we should note is was also a rough year with many changes occurring within and between our associates with more change on the horizon.

Our biennial retreat was held in October where we reviewed our department's progress and created short and long-term plans for each of our sections. It was very productive as faculty had the chance to sit down and discuss face to face where they currently were, where they wanted to be and set goals to accomplish their vision.

Here are a few of their goals:

Education:

- Increase production of manuscripts and abstracts
- Collaboration with faculty members from other institutions
- Become more nationally recognized in medical education
- Expand diversity of residents
- Increase gender representation

EMS:

- Integrate fellowship with DMC EMS Coordinators
- Expand the EMS Research Group
- Coordinate EMS Resident education
- Create an opioid overdose registry

"Emergency Medicine continues to remain in an excellent position regarding our four pillars..."

Continued on page 2

Letter from the Chair

- Produce an assessment plan for CPR training in the community.

Ultrasound:

- All section members to become journal reviewers
- Define standardized US proficiency data for each level of education
- Become the epicenter for defining proficiency in POC US
- Achieve increased School of Medicine representation
- Promote section members to Associate Professors

Global Health:

- Receive grant funding for FIRST AID FIRST program
- Develop faculty for a GH Research Center and standardize the GH curriculum
- Create a scholarship for residents and faculty for GH projects
- Begin EM residency's in Guatemala (read more about this later!), Laos and Nepal

Research:

- Recruit junior faculty
- Increase productivity on grants and manuscripts
- Utilize Think Tank to vet grants and projects
- Identify source funding for administrative research
- Communicate and create transparency regarding departmental resources

The Department of Emergency Medicine also had its five-year review in late 2018. We are still awaiting the final report. Conversations with our external and internal reviewers and SOM leadership have been very positive. I will share these details as they become more available.

In 2019, we look forward to our continued success.

"I can't change the direction of the wind, but I can adjust my sails to always reach my destination."

~Jimmy Dean

WAYNE STATE UNIVERSITY

Red Shoe Diaries

Ch-ch-ch-changes
(Turn and face the strange)
Ch-ch-changes
Don't want to be a richer man
Ch-ch-ch-ch-changes
(Turn and face the strange)
Ch-ch-changes
Just gonna have to be a better man
Time may change me
But I can't trace time

As Jean-Baptiste Karr wrote more than a century and a half ago, "The more things change the more they stay the same." (except it was in French, so it sounded a lot cooler!) Last summer, M.C.E.S. was notified by Tenet that they were invoking a clause in Observation contract to terminate our services 'without cause'. This means that we didn't do anything wrong, but they wanted to move in another direction. In fact, the local DMC administration made it clear that this was not their idea and they loved the job we did and didn't want to change. Per our contract, they gave us a 6 month notice which led to a D-Day of November 15, 2017. Understandably, as the date approached most of the full time Observation physicians found other jobs—either full or part time. As the date approached, Tenet Administration (with less than a month's notice) indicated that they changed their mind and asked M.C.E.S. to continue running the Units. We were told that this would be for the foreseeable future.

Next came the really hard part! Trying to reconstitute our staff with such short notice would be formidable. One of the two full time midnight NPs had take a travel job in Hawaii with a commitment of at least 6 months and we were down to essentially one full time physician, a handful of half time attendings, a few weekend fellows and a couple of prospects. Those of you who have recently joined our group know how long it can take to credential new physicians and advanced practitioners. Hospital administration promised to help expedite the credentialing process and coupled with my begging, pleading and whining, we were able to get several new personnel on board. One problem, however, was that they were all part time people—either fellows or attendings looking for a little extra money (but on their terms regarding scheduling availability). As we entered 2018, I had one full time attending and 31 part timers! Those of you who have done scheduling realize how difficult it is to fill a schedule for 2 OBS units with these restrictions. Oh, and did I mention, my one full time person was placed on sick leave for a couple of months in the spring?

Starting in July, with a new crop of residents emerging, we were able to build up a much better ratio of full time personnel and moving into the fall, they were starting to get the hang of the 'CDU way'. We had a few credentialing bumps in the road, but with the help of the chief of staff and contacts in medical affairs, we completed the process. Meanwhile, our contract to provide Observation services to DRH and HUH had expired August 1st, but negotiations were ongoing in good faith to ink a new deal that would also extend coverage to HUH to a full 24 hours (which had been 16 hours previously). There is a mechanism to extend the previous contract month to month—to a point.

Unfortunately, we reaching that point and M.C.E.S. was informed that effective February 1st, 2019, the contract between Tenet and M.C.E.S. to provide Observation services would end. As with last year, the DMC Administration does not want to do this. We are constantly reminded that they are very pleased with the service we have provided over 7 years, but the home office in Dallas has other plans. The nationwide Tenet Physician Group (TPR—Dr. Saker's group here at the DMC) will be taking over observation services at HUH and DRH. You may see some of the same faces as the group is looking to hire our full time and many of the part time providers—maybe even me.

Philip A Lewalski, M.D.
Assistant Professor
Editor-in-Chief

I want to thank all of the people who have made the CDU a success. Drs. Bill Bahu and Marc-Anthony Velilla created the CDU almost 8 years ago. They did all of the heavy lifting and developed the protocols and many of the items on the Wiki. Arun Kumar, as assistant director, has been a huge help as well as all of the physicians and APPs with whom I have worked with. Dr. Sweeny, Matt Gilson, Carolyn Sabbagh and Barb Morris have kept me out of trouble and have been a huge help. Dr. Roy Elrod and some of the members of Medical Staff Affairs were God-sends when I needed people credentialed on short notice, which is no easy task. I have learned a tremendous amount during the past 5 years as the medical director of CDU and I look forward to using those skills moving forward.

"I want to thank all of the people who have made the CDU a success."

I watch the ripples change their size
But never leave the stream
Of warm impermanence and
So the days float through my eyes
But still the days seem the same
And these children that you spit on
As they try to change their worlds
Are immune to your consultations
They're quite aware of what they're going through

Ch-ch-ch-ch-changes

Driving Heart Health: Addressing Diabetes, Heart Disease and Stroke

Over 67.2 percent of adults in Michigan are currently diagnosed with diabetes, hypertension, heart disease and obesity. In 2016, nearly 60,000 adults in Michigan died due to these conditions and there is growing interest in finding novel ways to reduce such adverse impact.

In September 2018, the Centers for Disease Control and Prevention (CDC) awarded funds to 28 state and local health departments across the United States to design, test and evaluate new, innovative approaches to address these significant health problems. The Michigan Department of Health and Human Services (MDHHS) was one of 21 state health departments to receive this funding. As part of this, a new partnership has been forged with Wayne State University researchers who will directly work with MDHHS in their efforts to prevent and manage cardiovascular health and diabetes. Phillip Levy, MD, MPH, FACEP, FAHA, FACC, the Edward S. Thomas Endowed Professor and Associate Chair for Research in the Department of Emergency Medicine, and assistant vice president for Translational Science and Clinical Research Innovation, will lead the Wayne State team on five major objectives to address these growing health problems.

"Our goal is to leverage emergency departments as a location for comprehensive population health initiatives, starting with a focus on undiagnosed or poorly controlled hypertension and hyperlipidemia," said Levy. "To achieve this, we are piloting a program called Bring It Down, which will utilize community health workers as a conduit to link patients to accessible primary care providers."

Levy and his team also will explore and test innovative ways to promote the adoption of evidence-based quality measurements at the health care provider level. "This objective will incorporate dashboard measures to monitor health outcomes among high-burden populations, and ultimately create geocoded hypertension and cholesterol data maps," said Levy. "This will help residents, communities and health care providers become more aware of local information related to these health issues so that they can be better addressed, decreasing the likelihood of complications."

Phillip Levy, M.D., M.P.H.
Edward S. Thomas Endowed Professor
Assistant Vice President of
Translational Science and Clinical
Research Innovation

The team will also implement systems to facilitate bi-directional referrals to community programs and resources and health care systems, ultimately aiming to improve lives. The team will explore and test innovative ways to expand the use of telehealth smartphone applications to promote better management of hypertension and high blood cholesterol.

"The ultimate goal of this project is to improve the health of our local communities, particularly in areas where residents are at risk for developing complications such as heart disease," said Levy. "We are proud to be a part of this nationwide effort that is rigorously aiming to prevent and manage diseases that affect the lives of millions."

"This will help residents, community and health care providers become more aware..."

This research is supported by an award to the MDHHS from the CDC, totaling over $5 million. Wayne State University anticipated receiving over $1.5 million over the life of this five-year project. The grant number for this project is NU58DP006614.

Awards

School of Medicine

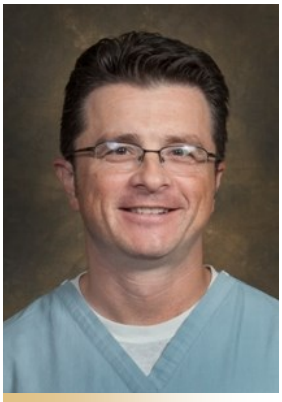
From left to right:
Dr. Claire Pearson, Dr. Virginia Delaney-Black and Dr. Anne Messman

Drs. Claire Pearson and Anne Messman were honored on November 15 at the Promotion, Tenure and Award Reception. Dr. Claire Pearson was promoted to Associate Professor and Dr. Anne Messman was awarded the College Teaching Award.

Congratulations!

Excellence in Teaching Award by the WSU School of Medicine.

These awards were based on student evaluation for the clerkship.



Dr. Trifun Dimitrijevski
Assistant Medical Student Coordinator

Dr. Elizabeth Dubey
Assistant Residency Director
DRH

Dr. Luda Khait
Assistant Residency Director
SGH

Dr. Anne Messman
Vice Chair of Education

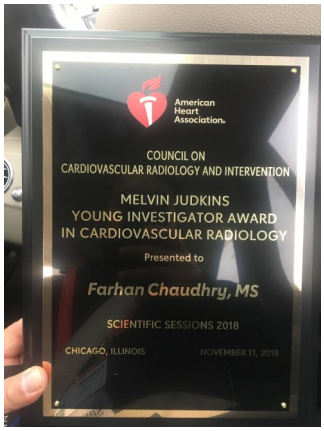
Dr. Erik Olsen
Residency Director
DRH

Dr. Marc Anthony Velilla
Residency Director
SGH

Second-year Student Awarded SAEMF/RAMS Grant and AHA Young Investigators Award

Farhan Chaudhry, a second-year Wayne State University School of Medicine medical student, for whom Dr. Phillip Levy has been serving as mentor, was recently awarded the Society of Academic Emergency Medicine Foundation Medical Student Research Grant in the amount of $2,500 for "Single-Cell Transcriptional Profiling of Circulation Lymphocytes Associated with Cardiac Fibrosis." Farhan was also recently awarded the American Heart Association Young Investigators Award for his study on "Nuclear Molecular Imaging of Apoptosis in Heart Transplant Rejection." Farhan presented at the AHA Scientific Session in Chicago, Illinois in November 2018. Farhan, originally from New York, plans to become a cardiologist or cardiothoracic surgeon.

Now in his second year of medical studies, he will begin work on his doctoral degree next year. He will conduct his studies in the Department of Physiology under the advisement of Phillip Levy, M.D., M.P.H., the Edward S. Thomas Endowed Professor and Assistant Vice President of Translational Science and Clinical Research Innovation for WSU.



"Less than a year ago, I lost my father unexpectedly. He was a world-renowned cardiologist and was very well know for his work in echocardiography," Chaudhry said. "He was my best friend and was always there when I needed him. I dedicate this honor to my late father, who unfortunately is no longer with use, but will forever be my main motivator throughout my career and my life. I am very excited for this chance to win his incredibly prestigious award in cardiovascular imaging, and I am extremely excited to continue working in cardiovascular research here at Wayne State with Dr. Levy."

Chaudhry used a novel nuclear imaging agent called technetium-99m duramycin to detect cell death in mice that had undergone heart transplantation. The mice develop an immune response against the transplanted heart and start to reject the transplant, causing cellular death. The rejection—via the imaging agent—could be detected through single photon computed tomography.

"Heart transplant rejection is the most significant concern after heart transplantation," he explained. "However, the only modalities we have in the clinic currently are invasive biopsy procedures that have risk of complication and the interpretation of the biopsy is prone to bias. Our novel noninvasive imaging modality may prove to be a useful tool in monitoring rejection in heart transplant patients."

Additionally, technetium-99m duramycin has demonstrated that is can detect cell death in atherosclerosis. This finding resulted in Chaudhry winning the 2016 Best Abstract Award from the American College of Nuclear Medicine and the Society of Nuclear Molecular Imaging.

"I would like to recognize Dr. Levy for this guidance in research during my time at Wayne State," said Chaudhry, who received his bachelor's degree in human physiology from Boston University and a master's degree in biomedical science from Icahn School of Medicine Graduate School at Mount Sinai, in New York City. "He is a brilliant researcher and has been a great mentor for me so far."

Chaudhry is the first author of a paper published this year in the Journal of American College of Cardiology: Cardiovascular Imaging edition. That paper demonstrated that the imaging agent can detect cell death after myocardial infarction.

Chaudhry also received the 2018 Skjaerlund Fellowship Grant in the amount of $2,000 for his project "Single-cell classification of fibroblast heterogeneity in chronic myocardial ischemia leading to heart failure." The John Skjaerlund, M.D. Endowed Medical Student Research Fellowship was established in memory to encourage medical students to pursue research work in the Department of Emergency Medicine.

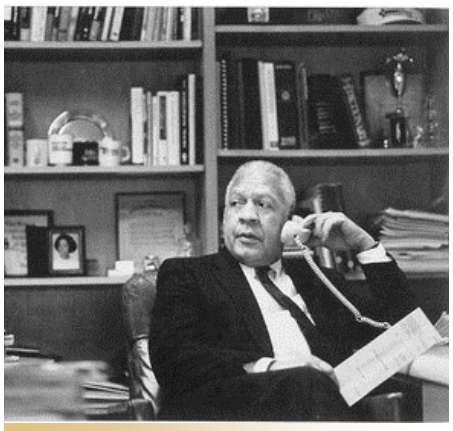
Farhan Chaudhry

Phillip Levy, M.D., M.P.H.
Edward S. Thomas Endowed Professor
Assistant Vice President of
Translational Science and Clinical
Research Innovation

Third Annual Edward S. Thomas Memorial Golf Outing

The Third Annual Edward S. Thomas Memorial Golf Outing was held on Monday, May 14, 2018 at the Detroit Golf Club. This event supports the Edward S. Thomas Section of Community and Public Health and the Endowed Professorship. The outing was co-hosted by Medical Center Emergency Services and the WSU Department of Emergency Medicine. Overall, more than $11,000 was raised in support. Rebecca Thomas, daughter of Ed and Jane Thomas, and Dr. Roy Elrod, served as co-chairs for the event. The committee would like to thank all of the sponsors and individuals who donated. We truly appreciate the support as it allows continued community health efforts.

The Fourth Annual Edward S. Thomas Memorial Golf Outing will be held on Monday, May 13 at the Detroit Golf Club. If you are interested in attending, sponsoring or joining the planning committee, please contact Bethany Foster, bfoste@med.wayne.edu. Hope to see you there!



Edward S. Thomas

Drs. Anne Messman, Claire Pearson, Kerin Jones and Laura Smylie

Rebecca Thomas and Dr. Roy Elrod
Co-Chairs

Henry Ford Team - 1st Place Winners
Drs. Jake Mantueffel, Justin Bright, Jason Folt and John Deledda

Save the Date - May 13, 2019

Lao Update

October in Lao PDR is one of the most beautiful times of the year. The rainy season has subsided to leave behind blue skies and green fields. The Lao people celebrate the end of Buddhist Lent with a candle lighting ceremony and Boat Racing festivals all across the country.

As the country celebrates new beginnings, the Lao Emergency Medicine development also starts anew. This autumn marked the inaugural Lao Conference of Emergency Medicine. The conference was put together largely by the Lao EM teachers at the University of Health Sciences and the Health Frontiers EM Coordinator, Dr. Celine Jacobs of Belgium. The aim of the conference was to bring together EM practitioners, including EMS personnel, nurses, and physicians, from across all 17 provinces in the country. The conference was taught mainly by Lao speakers, with two special foreign guests. Dr. Jim Holliman, the ex-president of the International Federation of Emergency Medicine, and Dr. Paul Kivela, the ex-president of the American College of Emergency Physicians, both gave short presentations on the history and importance of Emergency Medicine. Additional guests included Drs. John and Paul Allegra, Barney Eskin and Ike Go, RN, previously of DRH.

Dr. Kristiana Kaufmann
Co-Director
Global Health Fellowship

The conference included rapid fire lectures in addition to several skills workshops. Lecture topics focused on Trauma, Sepsis, Pediatrics, and EM systems. Special focus was also given to the 'Airway Checklist' which was created through the EM Residency and will be distributed nationwide. The workshops for airway were led by the Anesthesia Department, who predominate the Lao EM teachers. Ultrasound workshops were led by the Radiology Departments. A special 'thank you' to Dr. John Gallien for lending an ultrasound for these workshops. Additional workshops on Trauma were hosted by the EM Residents. The second-year resident spent the weeks before and after the conference teaching the Primary Trauma Care (PTC) course in neighboring Luang Prabang and Pakse provinces. The same skills of c-collar application, helmet removal, log roll, and pelvic binders were addressed at the conference. Due to the generous and diligent work of the DMC EM residents, each of the 17 provincial hospitals, 4 central hospitals, and 8 EMS crews received 5 c-collars as over 200 were collected over the past year!

The EM residency otherwise is going strong. An additional thank you to the DRH and SGH EM Residents who supported the Lao EM Residents by donating toward new scrubs, fanny packs, trauma sheers, and penlights for all of the new residents. The residents were THRILLED and took a picture right away! They continue to lead the way for the specialty and your support goes a long way! The Lao EM residency coordinator, Celine Jacobs, will be completing her two and half year role this December. Health Frontiers has two applications for this role to begin in July and we hope to have a person selected in the coming months. My next upcoming trip will be in May to facilitate the residency in her absence with a following trip again next autumn for the next conference.

Annual Holiday Meeting 2018



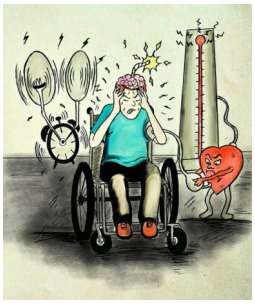









Autonomic Dysreflexia



Željka (Z) Minić, PhD
Assistant Professor
Basic Science Fellowship Director

Željka (Z) Minić, Assistant Professor in the Department of Emergency Medicine, and Basic Science Fellowship Director, is joining forces with a multidisciplinary research group from the Department of Physical Medicine and Rehabilitation (PM&R) at the Rehabilitation Institute of Michigan (RIM). The study, spearheaded by Dr. Nieshoff, a board-certified Physiatrist, will test the effects of an "old school" antihypertensive agent on attenuating autonomic dysreflexia in patients with spinal cord injury. *"As a basic scientist, my research efforts are to better understand neural mechanisms mediating autonomic reflexes, and the regulation of these reflexes independent of the brainstem. Autonomic dysreflexia is an example of such a reflex, which provides unique insight into the neural control of blood pressure."*

What is autonomic dysreflexia?

Most patients who have sustained spinal cord injuries at the upper thoracic or cervical level experience autonomic dysreflexia, a condition of exaggerated sympathetic nervous system activity which can be debilitating, and significantly impact the quality of their lives. Specifically, autonomic dysreflexia is a complex of signs and symptoms seen in affected patients as a result of sensory stimulation below the level of injury. Autonomic dysreflexia is defined primarily by episodic hypertension, and secondarily, by characteristic symptoms of headache, and sweating above the level of the spinal lesion. Other symptoms may include nausea, anxiety, and nasal congestion. It is most commonly provoked by distension of the bladder or colon, in the following way: the sensory tracts associated with the bladder and colon project, connecting collateral fibers to the intermediolateral cell column, the origin of the sympathetic outflow. As the fibers ascend the cord, a "mass reflex" of excitation is transmitted to the sympathetic ganglia causing a surge or neurotransmitter release and vasoconstriction. Normally, e.g., in able-bodied individuals, the sympathetic excitatory effect of such sensory input is buffered by descending inhibitory projections from the brain; however, spinal cord injury interrupts that descending component of the spinal sympathetic circuitry, and thus vasoconstriction, hypertension, and the symptoms noted above are elicited unopposed by any such damping effect.

What is the study about?

This is a pilot study, which will provide preliminary insight into the potential use of mecamylamine for prophylactic management of autonomic dysreflexia. We will elicit autonomic dysreflexia with a relatively novel, non-invasive technique, using inflation of a blood pressure cuff applied to the subjects' legs, in a standardized fashion. Hemodynamic responses to the stimulus will be assessed in the presence or absence of mecamylamine treatment. Our core hypothesis is that mecamylamine will reduce severity of hypertensive episodes.

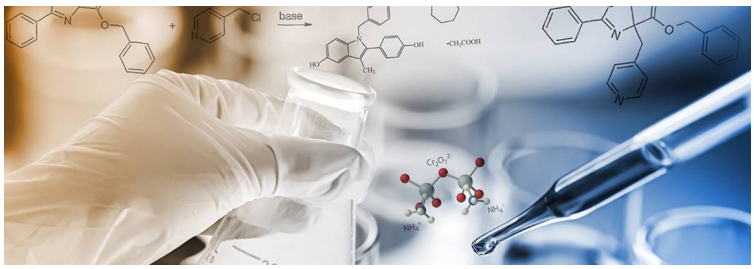
Mecamylamine was first used as an antihypertensive agent in the 1950s, and was widely prescribed for a number of years thereafter. Its mechanism of action is blockade of the sympathetic ganglia, by non-competitive antagonism at nicotinic receptors. This reduces vasoconstriction, and thereby lowers blood pressure. However, at the doses required for a therapeutic antihypertensive effect, mecamylamine causes considerable side effects, and other antihypertensive agents have supplanted its use for that reason. However, regardless of newer antihypertensives' generally superior side effect profiles, their usefulness for autonomic dysreflexia has shown limited efficacy in that specific circumstance, i.e., incomplete blood pressure control, and/or a tendency to cause hypotensive overshoot. Older literature suggests that mecamylamine may provide better control of paroxysmal hypertension in individuals with spinal cord injury, despite a reduced tendency to cause hypotensive overshoot relative to other agents. Finally, mecamylamine may have other advantages as well, in that it may help reduce the profuse sweating that often accompanies autonomic dysreflexia, and provide relief of symptoms of anxiety and nausea, due to the fact that it crosses the blood-brain barrier. Clinical practice guidelines currently provide little direction regarding a specific medication strategy for preventing autonomic dysreflexia, and clinical trials to better define an optimal therapeutic algorithm for autonomic dysreflexia are sorely needed.

About RIM:

RIM is a national leader in delivery of rehabilitation services, and offers the region's most comprehensive approach to spinal cord injury rehabilitation. The institute is home to many innovate spinal rehab programs in Southeastern Michigan and the Center for Spinal Cord Injury Recovery, a world-class spinal cord treatment facility designed to implement and study innovative treatments in spinal cord injury recovery. "RIM holds the largest regional database of individuals with spinal cord injury making this a great location for merging basic science and clinical research expertise."

The research group at PM&R is diverse, and consists of individuals with both clinical and research background which complement one another well, including Dr. Edward Nieshoff, Dr. Marcel Dijkers, Dr. Scott Millis, and Dr. Daniela Ristova-Trendov. *"I enjoy working with the research group at PM&R, as our varied backgrounds complement one another well. Dr. Nieshoff, is a mentor and a friend. He is a clinician with great interests in basic science and understanding of mechanisms mediating autonomic dysreflexia."*

Trial May Uncover New Diagnostic and Treatment Option for Cardiovascular Disease



Forty-two percent of all deaths in the United States are related to cardiovascular disease. According to the Global Cardiovascular Drugs Market Forecast, by 2030 the number of deaths from CVD will rise to 23.6 million per year in the U.S. Alone. Along with increased deaths, spending on drugs to treat the condition, as well as related hospital stays, home health care and lost productivity, will also rise.

A Wayne State University research team led by Phillip Levy, M.D., M.P.H., FACEP, FAHA, FACC, the Edward S. Thomas Professor and Associate Chair for Research In the Department of Emergency Medicine, and Assistant Vice President for Translational Science and Clinical Research Innovation, in collaboration with Arterez LLC, a Michigan-based biopharmaceutical compnay, has commenced a clinical study to identify the "fingerprint" and diagnostic accuracy of Arterez's seven patent-pending glycocalyx biomarkers in relation to arterial disease, specifically hypertension and heart failure, the first two of several diagnostic panels WSU and Arterez may collaborate on.

Atherosclerotic plaques that form in arteries lead to cornoary heart disease, myocardial infarction, stroke and peripheral arterial disease. Formation of these plaques includes accumulated inujury to the lining of the arteries themselves, known as the ednothelial glycocalyn. In research and clinical practice, tremendous emphasis has been placed on controlling cholesterol, with limited attention directed toward the repair and maintenance of the endothelial and related factors Arterez has identified as critical to acheiving prevention and possibly a cure.

Arterez, led by Dr. Joe Tunac, Ph.D., a medical scientist with more than 40 years of drug development experience across the spectrum of disease—including Avermectin, a 2015 Nobel prize-winning drug – has embarked on a journey to discover novel methods of prediciting, preventing and curing various cardiovascular diseases, including reparing injury to, and subsequently maintaining, the arterial lining by focusing on a set of proteins that make up the glycocalyx. These proteins can be quantified and formulate the basis of an entirely new biomarker pathway to identify individuals at risk for or already suffereing from arterial injury who may be amenable to targeted therapeutic intervention.

In addition to the biomarkers, Arterez has discovered a first-in-class, triple-compound oral therapy called Embotricin that proved nontoxic in 28-day studies. In preliminary studies, Embotricin successfully prevented and reversed arterial plaque. Arterez and Wayne State have also begun discussions toward development of an Institutional Review Board in-human research studies focued on the safety and efficacy of Embotricin, enabling commercialization of a completely novel therapeutic option for management of cardiovascular disease.

"We are delighted to partner with Arterez on this exciting line of research," Dr. Levy said. "The glycocalyx represents the next area of emphasis in the ongoing battle against CVD, and our collaboration with Arterez represents the leading edge of this effort."

"Dr. Levy and the Wayne State research team are an ideal partner for Arterez, given their knowledgeable team, first-class facilities, access to human bio-samples with known clinical histories as well as their hospital partners, and most importantly, their shared passion to identify and help to develop predictive, preventive and curative solutions for cardiovascular disease, our sole mission and focus. That WSU and their team is in our backyead is truly a blessing for us," added Arterez Chief Executive Officer Mike Brennan.

Thanks to assistance from Mary McCardwell, project manager of the Economic Growth Insititute at the University of Michigan, and the Michigan Corporate Relations Network, matching funds of $40,000 were provided for this project via the Small Company Innovation Program. An Addition $190,000 will be funded directly by Arterez.

Phillip Levy, M.D., M.P.H.
Edward S. Thomas Endowed Professor
Assistant Vice President of Translational Science and Clinical Research Innovation

"We are delighted to partner with Arterez on this exciting line of research."

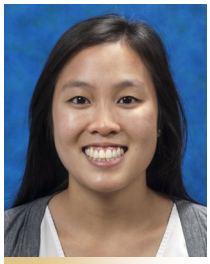
SGH Chief Chatter—Focus on Wellness

The academic year is well underway and as we approach mid-year, the common stresses experienced by each class become more intense. The first year residents are working hard to learn the system, gain exposure to the complexities of our patient population and improve their procedural skills. Second year residents are doing a great job running their own resuscitations and managing their teams directly with the attendings. Third year residents are trying to operate as independently as possible and become more efficient as we prepare for life after residency. So with all of the pressures of residency, how are Sinai-Grace Emergency medicine residents handling all of this pressure?

The answer for us is multifactorial. First and foremost, resident and physician wellness has become a priority here at Sinai-Grace. The word 'wellness' is a staple of vocabulary and is a subject that our attendings and program leadership place a significant emphasis on. This is demonstrated by our frequent practice of debriefing after codes and difficult shifts, identifying residents who are having a particularly difficult week or month and having open conversations about what we are going through, inside and outside of work. We promote a culture of openness and vulnerability to share our experiences with our fellow co-residents.

In a more formal sense, program leadership has also found wellness to be such an important topic to the extent that wellness initiatives and sessions have been incorporated into residency program. We have had discussion sessions during weekly conference as well as outside of the hospital to discuss how we find a way to balance work and our personal lives. Our faculty here have made it very easy for us to open up about both what is facilitating and prohibiting our wellness in order to identify good practices and what could be improved on.

We know how to work hard, but at Sinai-Grace, we also know how to play hard. In addition to the overall culture of wellness and formal wellness initiatives, for several years now, we have maintained the monthly tradition of putting on Wellness Events. These are graciously hosted by a PGY-3 resident and sponsored by one of our many amazing attendings at a local venue of interest. Such events have included fowling, curling, feather bowling, axe-throwing, biking Downtown Detroit, whirly ball, go-karting and many more. Residents come together to participate in something non-medical and let loose with one of our attendings who remembers what it's like to be in our shoes. This tradition has been tremendously beneficially for the wellness of our classes and hopefully for many future classes of SGH to come.



Dr. Samantha Chin
SGH Chief Resident

Dr. Ashley Dapra
SGH Chief Resident

Dr. Lauren Gandolfo
SGH Chief Resident

Dr. Jake Simpson
SGH Chief Resident

SGH Residents who matched into Fellowships…

- **Adrienne Malik**
  Ultrasound
  DMC
- **Elizabeth Jacobs**
  Toxicology
  DMC
- **Lauren Gandolfo**
  EMS
  DMC
- **Andrew Freeth**
  Ultrasound
  Spectrum Health, Grand Rapids
- **Samantha Chin**
  Ultrasound
  Maimonides, Brooklyn, NY
- **Jake Simpson**
  Critical Care
  Baystate, Springfield, MA

Congratulations!

Guatemala Update

While injuries and unanticipated illness have always been a condition of life, the idea of a medical speciality dedicated to the acute care of these conditions is only about 60 years old. The decision of a country or health system to undertake the development of Emergency Medicine as a speciality is not a light one. Although it may ultimately lead to savings, new efficiencies, and improved health outcomes, it involves costly investments in education and infrastructure. It also often causes aggravation to traditional specialists and distruption of establisehed patterns of healthcare delivery. Despite these challenges, an ever-increasing number of countries, currenlty over 100, have taken this step and are on the pathway to a fully operational emergency care system served and led by dedicated specialists in Emergency Medicine.

As many of you know, at the invitation of leading education institutions and healthcare services in Guatemala, I have been working for the last five years ona project to develop the speciality of Emergency Medicine in that country. It would never have been possible without the tireless work of my friend and colledgue Dr. Daniel Ridelman of the Department of Emergency Medicine at Wayne State University in Detroit. Last week we received the wonderful news that the University of San Carlos (USAC) and the Instituto Guatemalteco de Seguridad Social (IGSS) health system have jointly approved the first residency program in Emergency Medicine. The new program will matriculate its first class on January 1, 2019. While the hard work has only just begun, I would like to thank everyone in Guatemala whose support and vision have brought the project to this point. I congratulate them on their achievement and for pursuing this goal that will benefit countless Guatemalan patients in the future.

Anthony J. Dean
July 19, 2018

They say it's darkest before dawn. Just a few months ago, we gave up. Following serious frictions and irregularities, and after pulling out a couple knives from our backs, Anthony and I wrote three different letters of resignation. The first one detailed our grievances and frurstrations, the second one just said goodbye and thank you, and the third one was a vague "we're proud of having been a part of the project and please let us know if you need us in the future" in an attempt to not burn any bridges. We thought our time and effots would go to waste and we would have nothing to show for two years of work (five for Anthony, including one spent entirely in Guatemala). In the end, we decided not to send any of the letters, but to just wait for their next move first. And move they did. But first, let me recap.

In Guatemala, the process of developing a new speciality begins with the identification of a need within the health care system, which then petitions the USAC to develop a program to train physicians to fulfill such need. In our case, and for the first time ever, this process was inverted, and it was USAC with our help that initiated the process, petitioning the MOH to create and finance the residency positions. Unfortunately, were we able to sell the idea of EM to the minister of health, whose priorities were (appropiately) maternal mortality, childhood malnutrition and inclusivity of the diverse Mayan populations in rural Guatemala. Nonetheless, convinced that EM also has a role in socities with limited resources (perhaps even a bigger one), we decided to approach the Guatemalan Social Security Insititute (IGSS), a health care behemoth with a leading role in medical education in the county. We recruited new faculty, selected the best site for an EM program, and wrote a comprehensive report for their BOD. With the help of many Guatemalans that also believe EM will improve the quality of emergency care and help reduce costs (iin particular, Dr. Conrado Rivera, a Peds Genomicist who sits at the BOD of IGSS), the program was finally approved in July 2018. Unfortunately, only 4 spots were approved (of 12 requested and recommend).

To lessen our disappointment, and as most welcome surpise, a few days later we were informed that the new minister of health (formerly director of San Juan Hospital) had approved our originial program at San Juan de Dios Hospital! All 12 spots! And very importantly, USAC had confirmed and made official our leadership roles in the written version of the programs, so that we have at least some say in the critical decisions and plans. Happy that we hadn't sent any resignation letters, Anthony and I started working with the new faculty and planning the first year of the program. The programs were approved just days before the end of

Dr. Daniel Ridelman
Global Health
Assistant Program Director

"Following serious frictions and irregularities, and after pulling a couple of knives out of our back…"

Guatemala Update (continued)

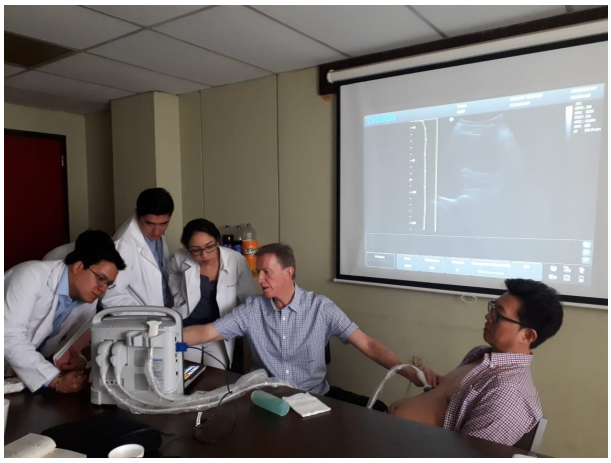
application season, so we had to aggressivley promote the program and recruit potential residents. In early November, we went to help with the interviews and selections of candidates, and we were very, very happy with the results. The importance of the group who will be the standard bearers for the new speciality cannot be overestimated. Also, we have been joined by Kai Hsiao. Kai is a truly international EP. Born in Taiwan, raised in New Zealand, trained in Australia and with an MPF from Harvard, Kai is now living in Guatemala. As the newest member of the coalition, we believe Kai will be able to contribute enormously to the project and are lucky to have him on board. So despite some significant singultus, the programs are finally taking off!

I am writing this from my hotel room in Guatemala. I am here this week to help with orientation and “bootcamp“ for the new class of residents. We have lectures on the nature of EM, its history, ethics, life as an EP, sources for EM study materials, alternate teaching formats, how oral boards work, the peer review process, a visual jeopardy, sepsis updates, trauma codes, an airway lab with a mannequin that Anthony brought, ultrasound rounds, EKG's, and an intro to intubation, among others. The new residents are extremely excited and enthusiastic.

In the last couple of years, we have met many people from programs all over the United States who wanted to be a part of EM development in Guatemala. These people inclue the teal at UCLA/ EMRAP:GO and Foundations of EM. We have also met several amazing EPs from Latin American and I am now working to create a sort of Latin-ACEP to encourage and facilitate regional academic collaboration. And finally, we are sharing our experiences and resources with others who are a couple years behind us, like El Salvador and Honduras. This September, Anthony and I were invited presenters at the Sepsis Day Symposium organized by the Salvadoran EM Association (ASAE). The conference was inaugurated by the MOH and the Dean of the SOM, both of whom promised support for the development of EM. We met a national hospital administrator who is interested in collaborating on projects in the country relating to clinical ultrasound and emergency care.

If you would like to contribute to the development of EM in Guatemala, there are many ways to do so. You could wirte a blog article for our Guatemalan EM Association website (agme.org.gt), come down to do some teaching and clinical shifts in the Eds, collaborate in research projects, sponsor a resident to attend a conference in the US or to come visit us at WSU/DMC, speak/lead a workshop at one of our conferences, or all of the above. Alternatively, you could go to Antigua, Lake Atitlan, Xela or another beautiful town to learn medical Spanish and visit the local Eds (I recently arraged a medical Spanish elective for a WSU student with 5 hour 1-on-1 lessons, food and lodging in Antigua for $275/week!), or we can help you make similar arrangements almost anywhere in Latin America.

Finally, I would like to give special thanks to Dr. O'Neil for material support and mentorship, as well as a shoulder to cry on at times.



Medical Education Corner

Welcome to the second installment of the Medical Education Corner! In the first installment, everyone was introduced to the Detroit Medical Education Research Group (DMERG). This group meets every other month, on odd months, on the second Thursday of the month from 3:30 p.m.—5:00 p.m. We usually meet at Traffic Jam in Midtown. Our next meeting is at Traffic Jam on Thursday, January 10 from 3:30 p.m.—5:00 p.m. The group has been very successful in getting members involved in medical education projects. We have had many members present abstracts across the country and are currently working on manuscript publications. Each session starts with a brief journal club component, where we discuss an interesting article in the medical education literature. All are welcome to join, no RSVP is necessary. Please contact me (amessman@med.wayne.edu) if you'd like to be added to our email list.

I would also like to take this time to briefly discuss our written evaluations that we complete for residents. We should be completing evaluations after every shift that we work with residents. This documentation is invaluable as formative feedback for the resident physician and also provides critical information to program leadership about the resident's performance. Articles were sent on this topic via the MCES listserv, please let me know if you would like them resent to you or would like any further information or coaching on this topic. Here are some take home points:

- Be focused in your evaluation of the resident. "Great job" or "good work" is not helpful to the program directors or to the residents. Please be specific, such as "you did an excellent job leading the team in the resuscitation room by using closed-loop communication" or "you need to work on your airway skills because you were not prepared with adjuncts when the need arose." Also, please try to avoid personality judgements (ex. "you were too bossy in resuscitation"); this is especially true for female residents, as some studies have indicated that they receive more personality comments than their male counterparts.
- Please provide specific recommendations if you would like. You can recommend something that you think the resident should read more about.
- Feedback is most beneficial if you give the resident something actionable to do or to improve upon. "You need to be a better leader is resuscitation" is a step in the right direction, but it would be more helpful to say "Make sure you are announcing your physical exam findings during resuscitation cases and are asking specific team members to complete tasks. You need to verify that the team member heard you and know what you asked for."
- For verbal feedback, it is often to label your words as "feedback". For example, say to the resident, "I want to give you some feedback about the case you just managed." Using the word "feedback" helps the resident to understand that what they are getting is feedback, and will have an impact on whether or not they perceived they received any feedback during their shift.

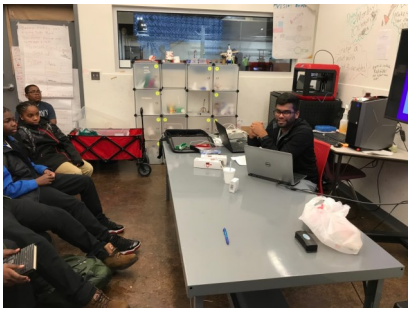
Anne Messman, MD, FACEP
Assistant Professor
Assistant Residency Director—
Siani-Grace Hospital

A Farmers Market, Fun-Filled Summer

For some, the Summer is a season for beach days and no classes. For others (a.k.a. The Department of Emergency Medicine Staff), it is the time for blood pressure (bp) screenings! In partnership with the City of Detroit and Wayne State University (WSU) Farmers Market, our team performed 495 screenings at five different farmers markets throughout the city. It was great being able to offer this service on a weekly and monthly basis. At the WSU Farmers Market, we had individuals return weekly to get their bp checked. They had their bp log in hand and would let us know about lifestyle changes they have made.

Each screening consisted of a quick medical/social history survey and 3 bp readings. Participants were educated about how to manage their bp and were provided information about health clinics in the area that they could follow-up at. The average bp was 128.3/83.9 and the average pulse was 80.2. Of those that participated, 173 had past medical history of hypertension and 139 of those were currently taking medication for it.

Basic Medical Science Student Launches Physiology Education Outreach for Detroit's Gym's Youth Program



Shobi Mathew, a graduate student in the Wayne State University School of Medicine's Basic Medical Science master's degree program, last month launched medical education outreach programming within the Downtown Boxing Gym Youth Program to teach Detroit children about physiology and specific organ function.

The gym's youth program is a free, after-school academic and athletic program serving 150 high potential, low opportunity children between ages 8 and 18 who are interested in science, technology, engineering, arts and mathematics, Mathew said.

Mathew has volunteered for the youth program since November 2017, tutoring and mentoring Detroit-area youth several times a week and leading a youth committee of older students to promote leadership skills.

The first session, held Nov. 20, highlighted the role of the heart. Mathew presented an interactive look at the heart's anatomy, defined and demonstrated blood pressure through a hands-on activity utilizing water blown through straw with different diameters, taught students how to understand automatic blood pressure cuff reading, helped them locate their pulse, explained how heart rate can change before and after exercise, and provided stethoscopes for student to listen to heartbeats.

"Feedback from the kids was amazing. They were sincerely engaged throughout the entirety of the session. The students participated in our demonstrations and asked questions during and after the session," Mathew said. "They were surprised when they learned the true structure of the heart rather than the animated version. We taught students how to check heir heart rate and they pondered how it could change from rest to exercise and back to rest. In addition, students wanted to know more about the human body, which is why we are conducting more sessions."

In addition to his WSU studies, Mathew is a clinical research coordinator for the Department of Emergency Medicine, where he manages a cardiac arrest database of Detroit. He hopes to pursue a medical degree at WSU, and is mentored by department Professor and Associate Chair of Research Philip Levy, M.D., M.P.H.

"I suggested the idea to Dr. Levy and he helped me to expand upon my idea. As my mentor, Dr. Levy has continually exemplified teaching expertise and provided the resources needed to successfully implement a program that exposes underserved Detroit students to the scientific and medical field," Mathew said.

New Industry Collaboration Helps to Advance WSU Biomarker Discovery

Earlier this year, Wayne State Universty executed a formal collaboration with SCIEX, a leading developer and manufacturer of workflows for liquid chromatography-mass spectrometry (LC-MS). This exciting collaboration was spearheaded by Drs. Phillip Levy, Rao Maddipati and Christian Reynolds and has resulted in the placement of a new CitrineTM LC-MS/MS system at WSU. During this extended evaluation period, our team will assess and evaluate the insturment's capabilites while advancing our ongoing biomaker discovery efforts.

Biomarker Discovery—The majority of clinical decisions are made based on the results of diagnostic laboratory testing. As an example, markers of cardiovascular disease (cardiac troponin and B-type natriuretic peptides) have become increasingly useful in recent decades, which have results in the development of extremely sensitive diagnostic assays to evaluate cardiovascular health. However, many of these existing diagnostic assays are not *perfect*, and the discovery and validation of better biomarkers is the focus of various stakeholders in the healthcare system. WSU is excited to be at the forefront of these efforts.

Analytical specificity of mass spectrometry—Most clinical laboratroy testing relies on non-MS based detection methods—prinicipally immunoassays. However, LC-MS methods are routinely being integrated into diagnosiclaboratories. In toxicology testing, for example, immunoassay screening of broad drug classes are frequently confirmed using mass spectrometry, which enables individual molecules withing a given class to be qaulified. Similarly, immuno-detection of vitamin D relies on a binding assay that cannot discriminate between vitamin D2 and vitamin D3, while more recently developmed MS-based methods can discriminate between the two forms. Noteably, in 2017 SCIEX released the first and only FDA-cleared LC-MS based vitamin D assay for use in diagnostic laboratories.

Christian Reynolds, Ph.D.
Basic Science
Department of Emergency Medicine

Pending and ongoing studies—Through our collaboration with SCIEX, our team has:

- Presented one SCIEX-sponsored webinar related to LC-MS/MS-based steriodomics analysis (Reynolds and Maddipati)
- Presented the results of a pilot study of the heart failure lipidome at the 15th International Bioactive Lipdis Conference (Reynolds, Levy, and Maddipati)
- Generated proof-of-concept/preliminary data for (i) an NIH RO1 application (Pis: Reynolds and Minic, (ii) an AHA Transformational Project Award application (PI: Ehrman), and (iii) an EMF Medical Student Research Grant application

Cardiovascular Journal Names WSU Professor Karin Przyklenk Editor in Chief

Karin Przyklenk, Ph.D., Director of the Wayne State University School of Medicine's Cardiovascular Research Institute, has been named editor in chief of the Journal of Cardiovascular Pharmacology and Therapeutics.

"This is truly an honor for me, for the Cardiovascular Research Institute and for the School of Medicine, and I believe this invitation reflects the national and international recognition that the institute and its members have achieved in the cardiovascular field," said Dr. Przyklenk, a professor of Physiology and of Emergency Medicine.

Published four times a year, the peer-reviewed journal published original basic human studies, animal studies and bench research with potential clinical application to cardiovascular pharmacology and therapeutics. Dr. Przyklenk described the publication as "a well-respected mid-tier journal focused on translational cardiovascular research."

She will serve as editor in chief for three years, with the possibility of two additional automatic two-year renewals.

Dr. Przyklenk said that three "outstanding colleagues" have agreed to join her and serve as associate editors: Peter Whittaker, Ph.D., professor of Emergency Medicine at the Wayne State School of Medicine and a member of the Cardiovascular Research Institute; Richard Vander Heide, M.D., Ph.D., professor and chair of Pathology at Louisiana State University and a former professor of Pathology at WSU; and Bruno Podesser, M.D., professor of Animal Research and Cardiac Surgery, and head of the Center for Biomedical Research at the Medical University of Vienna (Austria).

"All three associate editors are distinguished cardiovascular scientists and bring distinct areas of expertise to the journal," she said. "I believe we will make an outstanding editorial team."

Dr. Przyklenk's goals for the journal include expanding the scope and impact within its established niche of translational cardiovascular pharmacology and cardio-protection; increasing the number of citations of articles published in the journal to increase its impact factor; increasing the visibility and profile of the journal by establishing a presence at relevant cardiovascular conferences and meetings; offering annual awards for "best publication by a young investigator' in basic, translational and clinical categories, and creating "Outstanding Reviewer" awards; expanding awareness through social media; and broadening the publication's scope from its current emphasis on in-vivo preclinical and clinical studies to encompass high-quality cardiovascular epidemiologic studies, meta-analyses and cost-effectiveness studies.

Karin Przyklenk, Ph.D.
Director, CVRI
Professor
Physiology & Emergency Medicine

DRH Chief Chatter

Emergency Medicine residents continue to inspire us with their pursuit of interesting and impactful projects and research. After identifying medical resuscitations as an area that we can improve both our learning and medical care, several residents are investigating how video-recording codes can improve resident and medical student feedback and performance. We have sent residents to several national conferences, where they have presented on topics ranging from the flipped classroom teaching model to antihypertensive medication compliance. We find that cultural change in medicine often happens starting from students and residents. Topics that have taken forefront in our residency include gender bias in Emergency Medicine, and strategies to improve a field that is traditionally male-dominated, both in numbers and in cultural practice. We have also dedicated ourselves to increasing awareness of physician wellness. This has happened in part by improving the dialogue on difficult but essential topics such as physician guilt and shame, and debriefing after challenging patient outcomes. As doctors on the front lines of medical care for vulnerable and under-resourced population, we continue to grapple with the challenges that come with the innumerable social issues faced by our patients. We pride ourselves on the excellent training we receive in treating the most advanced and complex medical problems, but also have worked on educating residents on public health measures, such as trauma-informed care for victims of sexual assault and provision of effective resources for those that struggle with substance abuse.

We would like to congratulate our third year residents as they work on finding jobs and pursing fellowships. As always, we find that our graduates are prepared for any medical setting after the rigorous training at Detroit Receiving. We have residents who will be doing fellowships in ultrasound, medical education, and public health research. Our graduates will be spreading as far as Georgia to New York City to California.

As we interview residency candidates for the upcoming year, we can't help but reflect on perhaps the most special part of our residency. We tell applicants over and over that a defining characteristic of our program is the supportive, familial atmosphere between our residents. Residency is a time of immense growth, both personal and professional, and we are thankful that through all of this, we have a culture of caring, empathy, and closeness at Detroit Receiving.

~2018—2019 DRH Chief Residents

Congrats to Kelsey Vargas who matched in the Medical Education Fellowship at DMC/WSU!

Dr. David Burkholder
DRH Chief Resident

Dr. Lauren Kava
DRH Chief Resident

Dr. Claire Min-Venditti
DRH Chief Resident

Dr. Kelsey Vargas
DRH Chief Resident

Edward S. Thomas Section of Community and Public Health Updates

It has been quite a year for the EST Section. Under the leadership of Dr. Phillip Levy, the Section has grown extensively. This year the EST Section also became an integral part of the Wayne State University Office of Community Engaged Research.

Ongoing Programs

In February 2018, the Rapid HIV Testing Program expanded to Ascension St. John Hospital with the support of Dr. Claire Pearson. Now, every emergency department in the city of Detroit houses an HIV testing program which is a great accomplishment. Across the WSU testing sites, 10,692 rapid HIV tests were performed. There were 21 new positive infection identified (0.2% positivity rate) and 17 (81.0%) were linked to care. In the upcoming year, we plan to improve our pre-exposure prophylaxis (PrEP) referral system as it is a great prevention tool.

Under the leadership of Dr. Kristiana Kaufmann, the First Aid First program was fully implemented in the community this year. Dr. Kaufmann and her team of First Aid Trainers have completed over 10 community trainings at local organizations. One great accomplishment for the year was that they were able to train all Detroit Public School Bus Drivers on basic first aid techniques.

Introduction to the Office of Community Engaged Research (OCEnR)

"Key information comes from us. We are the tools of our community."

-Community Member

WSU has had great success with research and interventions; however, there is always room for improvement. One component that is often missing in a research proposal or program design is the community's voice. The Wayne State University (WSU) Office of Community Engagement Research (OCEnR) is a collaboration between the WSU Office of Vice President for Research and Karmanos Cancer Institute's Office of Cancer Health Equity and Community Engagement. OCEnR is focused on sustaining health and well-being of community members through citizen engagement, collaboration and partnerships. As a university and community-wide resource, OCEnR offers a variety of services and trainings to promote community engagement and recruitment in research. Our vision includes encouraging community involvement in all research design and development, promoting community outreach through peer-to-peer initiatives and empowering community members to address health disparities and improving health equity.

Above: Dr. Brian O'Neil teaches H-CAB members how to perform CPR as they screen bps at the 2018 WSU Heart Walk

The Department of Emergency Medicine and the EST Section have been heavily involved in the development of OCEnR. From identifying community advisory board participants to offering health screening at community health fairs, our team has helped bring our community's voice to the forefront. One such example is the community-wide blood pressure (bp) screening initiative. Research subjects from the Hypertension Intervention Project (HIP) volunteered to be part of the Hypertension Community Advisory Board (H-CAB) once the study was complete. The H-CAB has provided valuable feedback on how to improve research designs to make them more effective. The members have volunteered alongside our staff at the bp screening events. They have learned from our team how to measure bp and have taught our team how we can effectively educate community members.

For more information about the EST Section, please contact Bethany Foster at

Above Left: Dr. Kaufmann and medical student demonstrate how to perform CPR. Above Middle: Community members star in first aid video about heat stroke. Above Right: Dr. Kaufmann and medical student demonstrate how to make a sling out of a scarf at a community organization event.

School of Medicine

Wayne State University
School of Medicine
Department of Emergency Medicine
4201 St. Antoine
UHC - 6G
Detroit, MI 48201

Philip A. Lewalski, M.D.
Editor-in-Chief
plewalsk@dmc.org

Cari L. Williamson, M.B.A.
Managing Editor
cwilliamson@med.wayne.edu

We at the Resuscitator would like your input. We would love to hear from both our faculty and our graduates scattered throughout the country. If any of you have any gripes, concerns or comments, please submit them to me or Cari Williamson for publication in the "Ventilator" column. If you have any funny stories or anecdotes, we will try to include them in the "Doctor Aware" column. For the creative among you, please feel free to send me any artistic pursuits you would like to share. Finally, to our core faculty and researchers, please send me information about your on-going or future projects.