"In Their Own Words"—Department of Surgery's Division of Trauma, Burn & Critical Care Surgery

In this issue we cover the Division of Trauma, Burn & Critical Care Surgery, often referred to as "Harborview" or HMC: the location of the Trauma and Burn Center."

HMC is the only designated Level I adult and pediatric trauma and burn center in the state of Washington, and serves as the regional trauma and burn referral center for the five state region of Washington, Wyoming, Alaska, Montana and Idaho (WWAMI). Critical care medicine focuses on patients after the first trauma or burn measures have been taken, and on those critically ill patients that haven't suffered a trauma or burn but have life–threatening illnesses or conditions. Critical care medicine is defined by and involves close, constant attention by an integrated team of specially–trained health care providers (sometimes referred to as intensivists). Critical care medicine at HMC deals with a host of complications arising from the aftermath of trauma, burns or other life–threatening conditions.

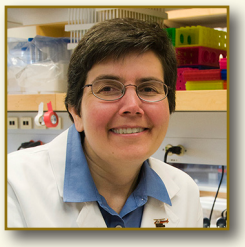
The Division of Trauma, Burn & Critical Care Surgery has 14 surgeon faculty – they include (in alpha order):

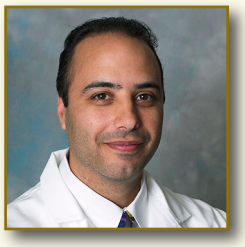
Saman Arbabi, MD, MPH, Professor. He specializes in trauma and burn surgery, general surgery, emergencies and surgical critical care

Eileen Bulger, MD, Professor & Chief of Trauma. She specializes in trauma, critical care and emergency general surgery. Her research focus involves advancements in pre–hospital care, the early resuscitation of injured patients, and the management of necrotizing soft tissue infections.

Joseph Cuschieri, MD, Professor, Director of Surgical Critical Care and Program Director of the Surgical Critical Care Fellowship. He specializes in trauma general surgery, emergency surgery, and critical care.


Arbabi


Bulger


Cuschieri

Heather Evans, MD, MS, Associate Professor. In addition to trauma surgery and critical care, Dr. Evans focuses on surgical treatment of diseases of the endocrine system and minimally invasive general surgery. Her research involves early detection and treatment of surgical site infections via patient generated mobile health data.

Hugh Foy, MD, Professor. He specializes in abdominal and soft tissue surgery, surgical critical care and trauma surgery. He is also the founding head of the Wind River College of UW School of Medicine since the "College" system was introduced in 2002.

Nicole Gibran, MD, Professor & Director of the Regional Burn Center. She specializes in burns, critical care and wound healing.


Evans


Foy


Gibran

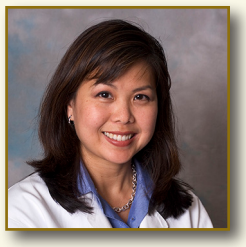
Ron Maier, MD, Professor, Division Chief & Surgeon–in–Chief. He specializes in trauma care, emergency general surgery and surgical critical care.

Samuel Mandell, MD, MPH, Assistant Professor. He specializes in care for critically injured trauma and burn patients as well as patients with emergency general surgery needs.

Lisa McIntyre, MD, Associate Professor, Associate Site Program Director, General Surgery Residency. She specializes in emergency general surgery with additional specialty focus in trauma and critical care.


Maier


Mandell


McIntyre

Charles Mock, MD, PhD, MPH, Professor, Regional Burn Center. He specializes in global healthcare and research.

Grant O'Keefe, MD, MPH, Professor. He specializes in surgical and intensive care services to patients with traumatic injuries, other emergency surgical problems and non–emergent GI surgical conditions.

Tam Pham, MD, Associate Professor. He specializes in on the care of patients with burns, trauma and general surgery problems.


Mock


O'Keefe


Pham

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Bryce Robinson, MD, MS, Associate Professor, Trauma. He specializes in the care of the critically ill and injured with an emphasis on surgical critical care, trauma surgery and emergency general surgery.

Erik Van Eaton, MD, MS, Associate Professor. He specializes in surgical critical care and trauma surgery as well as conducts research in biomedical informatics, information transfer and communication.

Robinson

Van Eaton

This is a highly distinguished group, with countless academic achievements, honors and awards. We asked the faculty of the Division to answer a few questions about the specialty and their own experiences. The following are the responses we received:

The People

What Made You Want to Become a Trauma or Burn Surgeon?

"My initial exposure to medicine was working as a paramedic. Through that experience I was exposed to a number of critically ill trauma patients and began to understand the importance of a system of care for optimal outcome of these patients. In medical school I did a trauma rotation in a hospital which was in a violent part of New York City and so I was exposed to the challenges of trauma care in an under–resourced environment. That's when I decided I wanted to devote my career to improving care for the injured patient." – Eileen Bulger

"My experience in the surgical ICU as a medical student was shocking. I sat in on family meetings in awe of the intensivist who seemed part internist, part priest, well before the specialty of palliative care was defined. I was totally hooked. But I didn't know if trauma was for me until the beginning of my R4 year when I opted to be the trauma chief for June, July and August. I will never forget those three months. I feel like I became a real doctor then." – Heather Evans

"After my med school rotation at USC, I swore that I would never be a burn surgeon! But, mid–residency I realized that I loved the physiology and the patients were eternally grateful. A career in burns would allow me to marry a career in research in wound repair and response to injury with a clinical practice." – Nicole Gibran

"There was no epiphany. I was going to be a cardiologist throughout medical school until a senior year rotation on Thoracic surgery at Duke University, a leading cardiac surgery training center. I fell in love with the technical component of medicine and switched to a Surgical Residency. But, I knew I did not want to be a Cardiac surgeon, so I left Duke to train at Southwestern/Parkland Hospital in Dallas, TX. My goal was to be the best trained general surgeon I could be. However, Parkland – the site of JFK's death – was the home of the leading trauma surgeons in the country. By the time they got done training me, I was also a Trauma Surgeon. And I have never regretted the choice for a moment." – Ron Maier

"I did not know I wanted to be a doctor until after I graduated from college and needed a career. I did not know I wanted to be a surgeon until my last year of medical school and needed to choose a specialty. I did not know I wanted to be a trauma surgeon until my last year of surgical residency and needed to plan my life. So you can say that I make my best decisions under pressure and when there is clear purpose; kind of like a trauma surgeon!" – Lisa McIntyre

"The person who became my mentor in residency was a burn surgeon. His fresh and honest outlook on his profession sparked something in me." – Tam Pham

"I knew that I didn't want to be a trauma surgeon! What I wanted to be was a surgical intensivist. It just happened that trauma training came with critical care training. And it just happened that I liked it." – Erik Van Eaton

> "The person who became my mentor in residency was a burn surgeon. His fresh and honest outlook on his profession sparked something in me."
> *– Tam Pham*

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The Profession

What are the characteristics of a successful Trauma, Burn and/or Critical Care Surgeon?

"I think a trauma surgeon must be willing to make rapid decisions with limited information, work well in a multidisciplinary team environment and remain calm under pressure." – Eileen Bulger

"I think you have to thrive on uncertainty, be willing to act on minimal information, and be able to change the plan at any time. But the most important thing is to be in a place with resources – other people with trauma experience, a shared set of agreed – upon guidelines and procedures, and an attitude that everyone deserves the very best care possible. The team is everything." – Heather Evans

"Characteristics leading to Success: Flexible, Decisive, Creative, Compassionate, and Assertive." – Nicole Gibran

"You must be well trained and able to operate and creatively adapt approaches to unique injuries and disease. You must be able to "think clearly and cleanly" on your feet and derive a rational plan. You do not have time to survey friends and experts or read a book. You must decide and act. Plus, you must enjoy and not fear the rush of adrenaline as a life threatening injury challenges your skills. Similar to high level sports, the greater the challenge, the slower things seem to move and the calmer you become." – Ron Maier

> "The team is everything."
> *– Heather Evans*

"A successful trauma surgeon needs to be calm during chaos and resourceful during uncertainty." – Lisa McIntyre

"Be on your toes, be ready for feedback from the patient when they deteriorate. Come to this field with enthusiasm and self–belief. There is a lot more to be learned." – Tam Pham

"One must be willing to start operating before knowing what operation needs to be done." – Erik Van Eaton

Left to right: Drs. Hugh Foy, Saman Arbabi, Joseph Cuschieri, Grant O'Keefe, Aaron Cheng, Samuel Mandell, Lisa McIntyre, Ronald Maier, Eileen Bulger, Bryce Robinson, Heather Evans, Erik Van Eaton, Nicole Gibran, Tam Pham and Pablo Sanchez.
Photo credit: Pat McGiffert/UW Medicine

Past, Current and Future State of the Specialty

What do you believe to be the most significant changes or "paradigm shifts" in Trauma, Burn & Critical Care Surgery over the course of your career?

The most important change is that we have used research to define improved resuscitation strategies for our patients which has completely changed our approach and resulted in better survival and fewer complications." – Eileen Bulger

"War – as it always does – changed early management of trauma and burn patients." – Nicole Gibran

Our ability to resuscitate and the abilities of our non–invasive technology have largely made trauma, from a general surgical viewpoint, a non–operative disease. We can mostly treat torso trauma with exquisite non–invasive radiologic diagnosis, eliminating the need for invasive "exploration" for a diagnosis. Many injures can now be treated with observation, resuscitation, medication and interventional radiology, including endovascular embolization and stenting. We have become intensivists treating surgical pathophysiology and supporting organ dysfunction without the need for open operative care." – Ron Maier

"There is more scrutiny and expectation to be critical of suboptimal outcomes, i.e., continuous quality improvement, which I think is great." – Lisa McIntyre

"Early excision, damage control surgery." – Tam Pham

"The rise of non–operative management of bleeding solid organs, and the fall of salt–water volume overloading as a treatment for hypotension. The acceptance of ultrasound as a useful tool in trauma, and the acceptance of pulmonary arterial catheters as a useless one." – Erik Van Eaton

Look into your crystal ball and describe the changes you see coming to the specialty?

"I believe as technology continues to improve we will have more rapid, bedside diagnostic studies which will streamline patient triage and the process of care. I also think we will continue to develop adjuncts to resuscitation to combat coagulopathy and reduce hemorrhage. I think we will continue to advance our understanding of the host

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Aerial view of Harborview Medical Center in Seattle, WA
Photo credit: Clare McLean/UW Medicine

response to injury and develop strategies to mitigate the subsequent complications." – Eileen Bulger

"My vision is for a wound healing center complete with a built environment that includes a healing garden, a gym, and combination of colors and music therapy. The other piece of that vision is an endowed research center that allows collaborative clinical, quality improvement, outcomes and translational research in the area of responses to injury. My experience with focus groups and listening to the voice of the patient indicates that trauma and burn survivors struggle with functional – physical and psychological – recovery 10 years after injury and that they cannot get expert help in their communities. These observations indicate that we have a need for a post–injury medical home complete with the ability to offer telehealth options." – Nicole Gibran

> "The most rewarding thing is working with the patients and their families."
> *– Eileen Bulger*

"Trauma surgery, dealing with the most critically ill patients with life–threatening, time–sensitive processes will continue to evolve into a broader form of surgery, requiring emergency general surgery from non–trauma causes. Disease processes such as necrotizing tissue infection, overwhelming intestinal damage and rapidly progressing septic conditions, among others, fit well into the thought processes, rapidity of decision making and logical creative approaches technically required to save the life of the patient and are analogous to the severely injured patient. The need for a broader experienced and competent surgeon in multiple disease conditions will continue to increase. The future is bright but the diseases have changed dramatically." – Ron Maier

"There is an unclear future, but we have a lot of trainees interested in our field, which is encouraging." – Tam Pham

"In the future, we still won't have a gold standard method for measuring perfusion. But we will have fancier methods for seeing and stopping hemorrhage, and shortening length of stay." – Erik Van Eaton

> "The care provided is across the entire diverse domain of our community—blind, to all categorizations. HMC is open and available to all who need our help."
> *– Ron Maier*

The Place—HMC

What is the most rewarding aspect of working in Trauma, Burn, and Critical Care Surgery? What does it mean to you to work at HMC?

"The most rewarding thing is working with the patients and their families. Trauma patients do not plan to be in the HMC emergency department that day and so these sudden life changing events have a dramatic impact on the patients and their families. We don't always win the battle, but when we do it is wonderful to be able to help our patients on the road to recovery. HMC is also a very rewarding place to work because of the people who choose to work there. The nurses and nurse practitioners are outstanding partners with us in advancing the care of injured patients. It is an honor to work with such a dedicated group of individuals." – Eileen Bulger

"The team is everything. Working with other people who want to save a life? Coming to work every day knowing that you can make a difference and feel part of something? Priceless. I'm really proud of the fact that no matter who the patient is, no matter what they did to get into the situation that led to their injury, none of that matters. We deliver the same high quality care every day to everyone." – Heather Evans

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Harborview's strength derives from the people who work there because they want to be there. We share a passion for the mission: for the underserved and critically ill and injured patients. This common attitude creates a collaborative positive environment where people do whatever it takes, whether it is their job or not." – Nicole Gibran

> I'm really proud of the fact that no matter who the patient is, no matter what they did to get into the situation that led to their injury, none of that matters. We deliver the same high quality care every day to everyone.
> *– Heather Evans*

"The most rewarding aspect is to accept the challenge of the most critically injured and to pull them out of the "jaws of death" and return them to their families and community. There is not greater contentment. The care provided is across the entire diverse domain of our community – blind, to all categorizations. HMC is open and available to all who need our help. We have a truly expert team, with arguably the best outcomes in the entire country. We know why we are here and we all work to achieve the same goal." – Ron Maier

"Seeing someone in clinic who is grateful for the care they or their loved have received while on our service is the most rewarding aspect of working here." – Lisa McIntyre

"Collegiality. HMC is a special place." – Tam Pham

Dr. Samuel Mandell and a team member of the UW Medicine Regional Burn Center at Harborview Medical Center.
Photo credit: Clare McLean/UW Medicine

Describe An Especially Memorable Experience at HMC

"A few years ago I saw a patient in clinic who was a couple of years out from her injury; she was one of the rare patients who survived an ED thoracotomy. I remembered her case vividly. She was left blind as a result of her injuries and I wondered how our interaction would be when I saw her in follow-up. I introduced myself as soon as I opened the clinic door–she recognized me by my name and voice and gave me a huge hug; she was grateful to be alive. That moment validated my entire training and career choice." – Lisa McIntyre

"Some of the injury circumstances are really unbelievable. I must say I might be skeptical about whether something like that really happened unless I took care of that patient myself." – Tam Pham

"I have countless patients I think of every day but my most memorable is an 8 year old girl who was shot accidentally in school. She is a success story for the entire trauma system. We received 15 minutes notice of her arrival by airlift. In that time we were able to have an OR prepared and standing by and mobilized the pediatric trauma team. She spent less than 5 minutes in the Emergency Department and was rapidly transitioned to the OR. She had severe, life threatening injuries to the liver, duodenum, and inferior vena cava. She required a massive transfusion and a prolonged ICU stay, but walked out of the hospital with her parents four weeks later! Whenever I am having a bad day I think of this little girl." – Eileen Bulger

"We cannot save everyone. Even the ones we save may not ever be as well as they were. Yet, even in the death of patients, I am proud of the way Harborview cares for patients and families. I recall a large and divided family gathered at the bedside of their gravely injured grandfather. They were deeply religious and we prepared for the possibility that they might ask us to keep Grandfather on life support despite irrecoverable multi–organ failure. The skill of his Critical Care team, and the multidisciplinary approach brought the family together and helped them see that even in death, miracles can occur – for the giant crowd of family in the Harborview waiting room was the first family reunion for them in decades where many old rifts were patched. Grandfather died peacefully that night, in the loving arms of his reunited family." – Erik Van Eaton

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> Perhaps I am biased, but I believe that HMC is among the best trauma centers in the country. We are one of the highest volume centers and practice does make perfect.
> *– Eileen Bulger*

Compared to other Trauma and Burn Centers, how does HMC stack up?

"We provide exceptional care, without exception, to a larger area of the United States than any other trauma center. Nobody else comes close to the reach exerted by Harborview Medical Center." – Erik Van Eaton

"Perhaps I am biased, but I believe that HMC is among the best trauma centers in the country. We are one of the highest volume centers and practice does make perfect. We are also unique in that we have a combined adult and pediatric Level 1 center. This allows us to leverage the resources to serve all age groups well. We participate in the Trauma Quality Improvement Program of the American College of Surgeons, which provides us with data that benchmarks our performance against other Level 1 adult and pediatric centers across the country. These data suggest that our risk adjusted mortality and major complications are in the top 10% of trauma centers nationally." – Eileen Bulger

"We are viewed locally, regionally, nationally and internationally as a leader in trauma burn and critical care. Our academic acumen is our strength. The culture cultivates research projects. And one project begets another. As a division we continuously push the envelope to improve outcomes for our patients." – Nicole Gibran

"The teamwork and infrastructure is particularly outstanding." – Lisa McIntyre

"Collegiality, resources available, academic caliber of the faculty, great fellows and residents." – Tam Pham

Pride in the Profession

What are you the most proud of in your career as a Trauma Burn, or Critical Care Surgeon?

"I am proud of the way that I helped Harborview create a process for agreeing on protocols and care pathways, and developed a mobile app that allows residents instant access to those "how we do it here" advisories. I often show that to other trauma surgeons on trips and they are very envious of it and the process that it represents." – Erik Van Eaton

"Building a team dedicated to burns. When our multi–disciplinary team attends national and international meetings other attendees routinely stop to ask how we do things here. When they speak at the podium or ask questions their peers listen with respect." – Nicole Gibran

"The greatest reward is saving a dying patient and restoring them to the best function possible. Second, the privilege of working with some of the best caregivers in the world. Third, the honor of teaching and working with the next generation of caregivers. Their dedication and caring is exceptional and a legacy that is unmatched in any other field. Fourth, the ability to do research and to advance the field . Everything else – awards and recognition – is great and appreciated, but as we all know it is the team effort – the many not the one." – Ron Maier

"Trying to do my best, one patient at a time. Burn/Trauma has been a great choice for me; HMC has been a great opportunity for growth and leadership." – Tam Pham

"I am most proud when our residents choose trauma and critical care as their specialty because of their experiences at Harborview." – Lisa McIntyre

The Final Word

To those who may be contemplating a career in Trauma, Burn or Critical Care Surgery

"Take time to think about clinical questions and ponder ways to solve problems using research tools that are at your disposal. Listen to bedside colleagues who you trust to be critical thinkers – regardless of their professional background. Collaborate with colleagues who know cutting edge methodologies and technologies." – Nicole Gibran

"The training and work can be exhausting but is very rewarding." – Lisa McIntyre

"You should do what you are passionate about. Being a trauma surgeon is not easy, but if you love what you do there is no better career." – Eileen Bulger

"Make peace with uncertainty." – Erik Van Eaton

"Go for greatness. There is no field of medicine more challenging and thus rewarding than surgery. And as a surgeon the challenges of the severely injured and life threatened crucially ill make trauma and acute care surgery unmatchable. If you are enlivened by the challenge and strengthened by the fight for a life, go for it. There is nothing more rewarding." – Ron Maier