2015 New Faculty

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minimally invasive and robotic surgery for treatment of gallbladder, hernia, gastroesophageal reflux disease and colon disease, and she has a special interest in esophageal disease. Dr. White is passionate and enthusiastic about providing accessible, state of the art quality care. "I strive to provide an unsurpassed level of care and make each patient's experience as comfortable and pleasant as possible. I spend a great deal of time with each patient prior to a procedure, at bedside during recovery and for any follow-up care they may need." In her spare time, Dr. White enjoys travel, art, skiing and spending time with friends and family.

Robert Yates, MD

Dr. Yates is a Clinical Assistant Professor in the Division of General Surgery and a surgeon with the Surgical Services & Hernia Center at Northwest Hospital & Medical Center. He joined faculty after completing advanced fellowship training in minimally invasive surgery here at the University of Washington in the Center for Videoendoscopic Surgery. Dr. Yates' clinical interests include the management of hernias, including inguinal/groin, ventral, incisional and hiatal hernias, and the surgical management of diseases of the gastrointestinal tract with a particular focus on disorders of the esophagus and stomach. Dr. Yates received his medical degree from the Ohio State University College of Medicine and completed general surgery residency at Vanderbilt University Medical Center. He finds the opportunity to provide surgical care to patients a true privilege. Dr. Yates believes that each patient has a unique set of clinical and social factors that define their personal goals and expectations for their surgical care. "I encourage patients to ask questions and be active participants in the clinical decision-making process. It is particularly important that each patient fully understands, and has confidence in, the treatment plan that we have developed." Ultimately, it is his goal to ensure that each patient receives with the safest, most effective, and least invasive treatment possible.

Researcher Profile: Anne Hocking, PhD

Chronic non-healing wounds are a common and debilitating complication of diabetes mellitus. It is estimated that up to 25% of the diabetic population will develop a non-healing foot ulcer and approximately 12% of these individuals will require a lower extremity amputation. The World Health Organization estimates that 347 million people worldwide have diabetes mellitus, making the prevalence and incidence of non-healing foot ulcers a global healthcare crisis. Contributing significantly to this crisis is the lack of reliable therapies for treatment of wounds that are slow to heal. Consequently, there is an urgent need for basic research into fundamental mechanisms of wound repair.

Dr. Anne Hocking

Anne Hocking, PhD, Research Associate Professor in the Division of Trauma, Burn and Critical Care Surgery, has spent the past 12 years investigating the molecular and cellular responses to injury during wound repair in skin. Her long-term goal is to develop new therapies to accelerate and improve wound healing in diabetic wounds. Dr. Hocking uses innovative approaches including in vitro and in vivo wound models combined with cutting edge molecular and cellular biology.

Recent work in Dr. Hocking's laboratory has focused on generating a comprehensive map of cellular metabolism in cutaneous wounds. While cellular metabolism is now recognized as playing a central role in regulating cell survival and proliferation in cancer, less is known about its role in wound healing. A major barrier for advancing research on wound metabolism is our limited understanding of the wound metabolic profile. With funding from the Department of Surgery Research Reinvestment Fund, Dr. Hocking and her team, in collaboration with Dr. Daniel Raftery and the UW Northwest Metabolomics Research Center, used a targeted metabolomics approach to generate metabolic profiles of uninjured skin and wounds at day 7 post injury in non-diabetic and diabetic mice. This pilot study demonstrated that diabetes mellitus alters the metabolic profile of both uninjured skin and wounds. It also highlighted the potential for metabolomics to identify novel biomarkers and therapeutic targets for improved wound healing outcomes. This work was recently published in the journal Wound Repair and Regeneration with first author Dr. Ravi Sood, a former research fellow in the NIGMS-funded T32 Postdoctoral Fellowship Program in Trauma and Burns.

Using this pilot study as preliminary data, Dr. Hocking was recently awarded funding from the UW Royalty Research Fund. In this new project, Dr. Hocking and colleagues will measure metabolites in diabetic and non-diabetic wounds at four different time points post injury. They will also determine when and where metabolic enzymes are expressed during wound repair. Collectively these studies will determine whether distinct metabolic programs

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Researcher Profile: Anne Hocking, PhD

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are associated with different phases of wound repair. They will also determine whether wounds with impaired healing are associated with different metabolic programs than wounds with normal healing.

Dr. Hocking is also working with Dr. Brooke Russell at ECM Technologies, LLC and Dr. Elizabeth Cosgriff-Hernandez at Texas A&M University to develop a novel wound dressing that will accelerate healing of chronic wounds. This dressing incorporates an engineered bacterial collagen-mimetic protein into a biodegradable hydrogel. The bacterial collagen-mimetic protein has the triple helical structure characteristic of native mammalian collagens but lacks collagen's arrays of cell adhesion, cytokine binding, and enzyme cleavage sites, which allows directed engineering to specify functional activity. For the wound dressing, the bacterial collagen-mimetic protein has been engineered to recruit specific cell types that promote wound healing. The wound dressing is also novel because of the use of hydrogel microspheres instead of hydrogel sheets, which are difficult to fit to deep or irregularly shaped wounds. In contrast, hydrogel microspheres provide a gel-like dressing that can conform to wound shape. Dr. Hocking and her colleagues recently received funding from the US National Institutes of Health to evaluate their wound dressing in a diabetic mouse model of impaired wound healing. They will determine whether the wound dressing accelerates wound closure and increases wound vascularity. They will also assess the effect of the dressing on both the inflammatory response to injury and scar formation.

Dr. Hocking also has ongoing collaborations with Drs. Nicole Gibran and Saman Arbabi, Professors in the Division of Trauma, Burn and Critical Care Surgery, investigating hypertrophic scar formation after burn injury. To date, there is no therapeutic intervention known to prevent these disfiguring scars, which are red, raised, itchy and contracted. This lack of preventative therapies has devastating consequences for a patient's quality of life. Dr. Gibran's team is determining whether there is a genetic predisposition to hypertrophic scarring whereas Dr. Arbabi's team is studying whether controlling local inflammation in the wound prevents hypertrophic scarring.

Taken together, these projects represent an exciting opportunity to translate findings in the laboratory into novel therapeutic interventions that will greatly improve medical and surgical care of patients with chronic wounds or burns.

Unfamiliar Territory
by Shane Morrison, MD

Plastic Surgery resident Shane Morrison recounts his trip to procure a liver with Transplant Surgery Fellow, Amir Azar.

Alaska was our destination. It would be my first visit to the great icy wilderness that I envisioned lies north of the Puget Sound and the intervening evergreen islands too innumerable to name. Summer was turning to fall, and the clear night sky speckled with ever-morphing clouds separated the violet and marigold hue of the setting sun from the vast darkness above. It was rumored that the Northern Lights may greet us – their twirling and glittering green appendages spread wide to embrace our oncoming plane. I smiled with anticipation.

Adrenaline supplemented with a late-night drip coffee helped my eyelids open back up after a lingering blink as they sought to make up for the sleep debt compiled in surgical residency. I felt a growing excitement at the idea of arriving in unfamiliar territory on a mission to help free our patient from a life-threatening illness, and was reminded of Thoreau's own excitement at leaving the troughs of society behind to sustain himself off of the wilderness of Walden's land. Our taxi arrived, and, dressed uniformly in baby blue scrubs we stepped in, leaving behind a family anxiously awaiting our return and the gift we would bring that was only realized through death.

The sound of the accelerating plane on the tarmac had its usual effect on me, and I was asleep before cruising altitude. I awoke shortly before landing, noting how miniscule the fluorescence of our destination city was compared to Seattle's. The streets were

Drs. Shane Morrison (left) and Amir Azar boarding flight to Alaska

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