Wound Healing Foundation
Funding Research for Tomorrow's Innovations



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***Project Title:*** KDM3A epigenetic control of endothelial metabolism limits angiogenesis in diabetic wounds
***Year Awarded:*** *2026*
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**What do you hope to/did you learn through this research?**
The goal of this project is to gain a deeper understanding of microvascular-mediated defects in wound healing. By doing so, I hope to unearth targetable mechanisms that can be leveraged to develop novel therapeutics to improve cutaneous angiogenesis and ultimately accelerate wound healing in T2D patients. On a personal level, I hope to gain further expertise in molecular-based benchtop approaches, broaden my research design, and refine my ability to disseminate new knowledge through symposia and scientific writing.

**What can you tell us about the progress made in this area since you first began your research?**
Our team has made tremendous strides in projects focused on understanding endothelial-dependent alterations in epigenetic regulation of gene programs in the diabetic wound microenvironment. Although these projects are still in their infancy, we look forward to their publication and their impact on clinical outcomes in the near future.

**How can this research help patients, clinicians and/or scientists?**
As a clinical community, we have been subpar in providing care to patients with diabetic foot ulcers, often resulting in poor outcomes and recurrence, largely due to limitations in the standard-of-care and the therapeutic tools available to us. By taking a cell-specific epigenetic approach, which has a large evidence base for therapies in diseases such as cancer, we can break away from the current standard-of-care paradigm and develop therapies that flip the switch on the behavior of cells known to drive the pathogenesis of chronic wounds.

**Has/Did your work thus far yield/ed any surprises?**
Everyday can be a surprise, things that I thought I knew can be completely turned on its head. However, understating the context of each experiment or design has been crucial in making every result meaningful and guiding our next step towards therapeutic delivery.

**How did this award help your career?**
The stature of this award has brought notoriety and attention to our work from the wound healing research community. On a personal level, the emphasis on exposure, mentorship, and community engagement, as well as the Foundation's continued opportunities for involvement, I believe, will foster lasting collaboration and career development for me.

**How did you get interested in wound healing and this area in particular?**
To date, my scientific background and experience primarily focused on endothelial dysfunction and vascular disease. Because most diabetic complications, including chronic wounds, are heavily driven by microvascular disease, research into endothelial epigenetic alterations and how novel therapies can be used to accelerate angiogenesis and thus wound healing has happened fairly organically within my training.

**Tell us about some of the outcomes of your research you are most proud of and what it means for patients, clinicians and/or scientists.**
I think my greatest accomplishments are still ahead of me. Unfortunately, but rightfully so, I think the clinic/bedside is about ten years delayed from pre-clinical/benchtop discoveries, so even when work becomes available to the clinical community, it might be a decade before any production of knowledge comes to fruition in terms of benefits to patient care, quality of life, and health span. But I think the work I complete during my fellowship under Dr. Katherine Gallagher will be my most important work to date.

**Approximately how many publications have you published since becoming a Fellow? Of these, how many relate to your Fellow research?**
Since beginning my time in Dr. Gallagher's lab, I've co-authored eight papers, six of which are from her lab. My dissertation work is still undergoing minor revisions, and my first project with Dr. Gallagher is currently undergoing major revisions.

**What are your future plans for your work in wound healing?**
I hope to become an authority in the field of diabetic vascular disease and wound healing, with a focus on epigenetic mechanisms that orchestrate endothelial function and angiogenesis. This would ideally take the form of a professor and lab director position at a prominent research institution with rich resources and a wide range of collaborative opportunities. This type of environment enables obtaining large-scale grant funding to conduct impactful research.

**Who do you consider your mentors and your close associates in this project? How did you start working with them?**

My primary mentor is Dr. Katherine Gallagher. I did my lab rotation with Kathy during my doctoral work here at Michigan, and she offered me a postdoctoral position upon completion of my PhD…I guess I didn't screw up as much as I thought I did in her lab during that time. Kathy also served on my dissertation committee, so I have a longstanding mentorship under her that, in my opinion, has advanced my abilities far beyond where they once were. Kathy has been very influential in my understanding of all things research, which is an incredibly dynamic and multifaceted field in which to have a career. Success as a faculty member starts with scientific expertise, from understanding the existing knowledge base to conducting advanced cellular and molecular assays, which has allowed me to continue developing my skill set at my own pace. My biggest improvement while learning from her has been in storytelling. We work in an incredibly complicated arena, and being able to deliver just the right amount of information to objectively present a tested hypothesis and its implications without making a piece of writing or an oral presentation indigestible is truly an art. Kathy is a tremendous scientific and grant writer, and that is exemplified by her track record of publications in high-profile journals and securing prestigious grant funding that almost always delivers substantial knowledge to the scientific community. I'm very fortunate to be part of her lab and learn from her, and she will likely be the most influential person in my professional development.

**Tell us about your life away from the lab and/or clinic?**

I'm pretty boring. I played sports growing up, so health and exercise remain pillars for me. In my spare time, I enjoy working out, pick-up basketball, and golfing. I was an NCAA DII student-athlete playing football, so I take every opportunity to attend University of Michigan football games and enjoy the tradition. I enjoy watching most of the Michigan college sports teams. I feel every team is usually in contention for a national title here. I also like food; Ann Arbor is a rich melting pot of cultures, and that's evident with our food and drink scene, which I try to get to with friends when I can. I have an English bulldog named Obie, who really pulls his weight around the house. Obie enjoys spending most of his time napping, begging for food, and trying to wrestle my guests. Outside of that, I am a slight movie buff, but I will not spend time watching a new movie unless it's higher than ~70% on Rotten Tomatoes.