



Outstanding Young Alumnus

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I fondly recall my meeting with Jennifer Welch, Upstate director of admissions, on the day before Thanksgiving in 2003. I was a foreign citizen, ineligible for federal loans, and was missing pre-requisite courses—not the type of applicant who typically fares well in front of the Admissions Committee. Nonetheless, I immediately felt at home and knew Upstate was where I wanted to train as a physician.

I had arrived in the United States from Scotland five years earlier on a one-way ticket, with \$2,000 and two suitcases, to begin a PhD in pharmacology at the University of Rochester. During my doctoral studies, I discovered that an intracellular protein called Big Map Kinase phosphorylates cardiac gap junction proteins and impairs systolic function in the ischemic

myocardium. I never would have predicted that a series of clinical encounters 15 years later would lead me back to the same protein and shape my career.

After completing my PhD, I enrolled in a dual postdoctoral fellowship program at the Johns Hopkins Hospital to gain a qualification in chemical pathology with a formal board certification pathway as well as intense exposure to biomarker discovery and evaluation, which would also become instrumental in a disease I would dedicate my early career to. I applied for and was offered a faculty position in the Department of Pathology at Stanford University. My wife, Sarah, visited California with me and asked me why I ended up doing so much clinical research instead of applying to medical school. Sarah

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told me she thought I was making a mistake by moving us to Palo Alto, and I should apply to medical school. In what was unequivocally the most poorly prepared application of my life, I did just that, with an undergraduate GPA reading 0.00 since AMCAS would not verify ‘foreign undergraduate grades’ earned at the University of Edinburgh. I applied to the nine medical schools in North America willing to accept such an application and received just three interviews (Toronto, Rochester, and SUNY Upstate). Sarah forbade me to move to Canada and, by the grace of God, I enrolled at Upstate in 2005. I felt like I had won the lottery.

I bonded with my classmates—some almost a decade younger than me—and have had the privilege of sharing patient-care responsibilities with several over the years. A few basic science faculty members were especially encouraging for the dozen or so “non-traditional students” in the class, including

N. Barry Berg, PhD, Robert Zajdel, PhD, and Paul Shanley, MD. I found the first two years of medical school rigorous, but really enjoyed pathology and pathophysiology. It was therefore not surprising that solving puzzles drew me to internal medicine.

During the clinical years at Upstate, Vinny Frechette MD '91, was easily the most impressive physician I worked with and this solidified my plan to become an internist. I matched as a categorical medicine resident at the New York Presbyterian Hospital (Weil-Cornell) where it was immediately obvious to me that Upstate’s focus on rolling up your sleeves rather than writing an order was going to be a major feature in the first year of training at a busy New York City Hospital. Routine tasks such as phlebotomy, starting IVs, and performing ECGs were common for admitting interns, and I thanked my lucky stars that the PACU nurses at the Syracuse VA hospital took me seriously when I asked them to teach me for a few days on establishing vascular access. Along with the excitement of residency, Sarah also had the distinction of being admitted to the hospital and cared for by my co-residents while eight-months pregnant with a nasty case of myopericarditis. Then, in his first month of life, my son Ian was admitted to the PICU at Cornell with RSV bronchiolitis. Both thankfully recovered quickly.

After a year of residency, it was clear that 90 percent of the encounters in general medicine are routine, but the 10 percent of unusual cases always interested me more,



Dr. Cameron with the Rochester Coronary Care Unit team

and required deeper thought and reading. This urged me to consider integrating research back into clinical training. I eventually specialized in cardiology at the University of Rochester, although greatly missed the breadth of care offered by internal medicine. While completing an enfolded (five-year) clinical and research fellowship, I frequently worked as a per diem attending physician in three busy urgent care centers and two rural hospitals in the Finger Lakes region alongside a truly outstanding acute care internist, Jason Feinberg, MD '93, which provided fantastic practical experience. During this time, I found my niche in vascular medicine and took the sub-sub-specialty certification exam in this discipline and focused on thrombotic disorders.

For the first three years on the faculty at the University of

Rochester, I served as the assistant program director for cardiology, and was charged with integrating basic and translational research in cardiology with clinical work while mentoring residents and fellows. After several spectacular rejections, I finally won a grant from the National Institute of Health to study new anti-platelet targets. One of our early targets was Big Map Kinase—a protein I coincidentally studied 10 years earlier during my PhD, which gave me a head start. Three other international groups made the same observation but we were fortunate to publish first in a high impact journal.

We learned that the type of platelet you make in health is not the same as in disease states, and so I started to study dysregulated platelet function in other diseases including peripheral artery disease,



Dr. Cameron in his research lab



Dr. Cameron in the catheterization lab

aneurysmal disease, and venous thromboembolism. We also discovered that the behavior of platelets in men and women at the time of myocardial infarction is quite different which satisfied a personal irritation of mine that women presenting with angina are often overlooked by clinicians. For part of the year, I attended in the CCU and cardiac ICU, on the general medicine service, I initiated a vascular medicine service, and taught basic pharmacology in the medical school. Several Upstate alumni came through the CCU as residents. It always brought me joy to see them apply the same “grit in the trenches” and clinical reasoning that I remember Upstate so fondly for.

One area of concern for me was that patients with high-risk pulmonary embolism (PE) were somewhat conservatively managed in our region. With a 90-day mortality of around 40 percent, I knew we could do better. Utilizing some of my contacts through the Society of Vascular Medicine, we launched a Pulmonary Embolism Response Team (PERT) that brought together

pulmonologists, cardiologists, cardiac surgeons, and emergency medicine physicians at the bedside to perform procedures or use aggressive medical care to stabilize the right heart. When we started our PERT, I began to mentor an Upstate alumnus, Colin Wright, MD '14, who was completing his medicine residency before a cardiology fellowship. Dr. Wright was instrumental in recording various clinical variables in patients with high risk PE as a QA requirement for residency. This informed us of several lesions in our treatment of patients with PE, and quickly morphed into a very involved research program with multiple publications over three years.

I also mentored another Upstate graduate, Yu-Lin Chen, MD '16, who developed our biomarker data used for decision-making in high risk PE, and she secured a first-author manuscript in her last week of residency. The Rochester PERT is co-directed and was refined by another Upstate alumnus, Anthony Pietropaoli, MD '90, who is a senior faculty member and an expert in

pulmonology and critical care. I attribute a natural kinship and a hazy distinction in the hierarchical tree common to Upstate-trained physicians for the success of our team. Over a period of two years, in-hospital mortality for high risk PE decreased by 30 percent. So, effectively, SUNY Upstate is largely responsible for the marked decline in patient mortality from PE in Rochester. No amount of financial compensation or publication could ever surpass the joy I feel in seeing someone with a lethal disease in cardiogenic shock whisked from the jaws of death and back home with their family.

These days, I split my time between the basic research laboratory, clinical care, and teaching. My work has taken me all over the world. To better align my clinical service with research and to enjoy a better balance between work and home life, I recently relocated to the Cleveland Clinic Foundation for a leadership position in the section of vascular medicine, a subspecialty of cardiology, and one of the most active vascular groups in the United States. Vascular medicine is the perfect place for me to retain and express my interest in general medicine. I couldn't perform the type of research that I do without being informed by clinical medicine, and each new venture in the lab makes me want to find the answers for those 10 percent of patients with rare and unusual diseases. I feel fortunate that the foundation that my Upstate mentors gave me allowed me to effectively write my own job description. ■

Bio submitted by Dr. Cameron