“Never be limited by other people’s limited imaginations.”

— Dr. Mae Jemison

first African-American female astronaut
Dear colleagues,

Welcome to a new year in the Radiology Department! We are looking forward to the arrival of new people, new ideas, new resources and new initiatives in 2019!

Our January newsletter is dedicated to ethnical and racial minorities in Radiology and Medicine. Black and Hispanic faculty represent about 2% and 6% of all Radiology faculty, respectively. Few minority trainees enter the field of Radiology, making it difficult to close a race disparity gap in our field. Among the 20 largest ACGME training programs, Radiology ranked 18th with regards to representation of trainees from underrepresented minority backgrounds (J Am Coll Radiol.11(7):673).

Our contributors show us how diversity can broaden our horizon, create new ideas and improve the care of our patients. The physician-patient relationship is strengthened when patients encounter physicians with similar personal beliefs, values, and communication styles to their own. Perceived personal similarity is associated with higher ratings of trust, satisfaction, and compliance with treatment recommendations. At Stanford Radiology, we want to create an environment, where every patient and team member feels valued and appreciated. Our newsletter will provide insights about how diversity of our clinical and research teams can positively impact our ability to create new imaging innovations and provide outstanding clinical care.

Thank you for supporting our diversity initiative!
I wish you a happy, healthy and successful New Year 2019!

Heike E. Daldrup-Link, M.D, Ph.D.
Associate Chair for Diversity
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https://www.youtube.com/watch?v=2wjh0N1EzPI

https://www.ted.com/talks/carla_harris_how_to_find_the_person_who_can_help_you_getAhead_at_work
Alida and Benedict were born in Cameroon, a bilingual French and English speaking Central African country nicknamed “Africa in miniature” because it is richly blessed with a vast variety of geographical landscape, agricultural products, minerals and natural resources that mimic and mirror the continent. Cameroonians come from very diverse cultural backgrounds. Alida and Benedict both hail from the English-speaking part of the country which comprises only about 20% of the population. Theirs is a story of 2 people born into a minority and marginalized population, driven by the lack of opportunity to travel abroad against all odds in search of better lives. Along the way, their emigration paths crossed. They met, fell in love and got married in the US. Their separate migration stories are characterized by uncertainty and a luck that is guided by stubborn faith, sound mentoring and hard work.

After graduating with a bachelor’s degree in Cameroon, Alida tried looking for a job for almost 3 years in vain. As the first daughter with 5 siblings, she wanted just to help support her family and never really thought of emigrating abroad because it was a pipe dream due to her poor background. She had to do business, buying and selling food stuff to help support her family. One fine May afternoon in 2008, she received a call from a very good childhood friend who had played the US Diversity Visa Lottery on her behalf using an old passport size photo without even informing her. She had won the lottery and with this her journey to becoming a US citizen though controlled by unforeseen circumstances became a reality. A minority-based program often criticized by many as being random turned out to provide opportunity and hope to a young graduate from a country currently in the pangs of serious political turmoil, resulting from the marginalization of one-fifth of its population in terms of opportunities and resources over time. Alida is currently studying to become a nurse in the US.

Benedict’s journey to Stanford was driven by a passion for maths and science. He lost his mum to recurrent breast cancer in high school and one of her last wishes was that “he should continue to be passionate about maths and science ...” After graduating with a BSc in maths and due to lack of opportunities for further studies back home, he travelled abroad. In Belgium, he was accepted into a MSc degree program in
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Biostatistics. As a foreign student, like in most countries, you are only allowed to work a limited number of hours per year. While this condition is meant to help foreign students focus on their studies, it is oblivious to the fact that many foreign minority students are expected to help support their families back home while studying. To raise more money to help his ailing dad and at the same time concentrate fully on his studies, he opted to pick fruits in farms on the outskirts of cities like Antwerpen during holidays in cold and harsh weather conditions. Some of his classmates were shocked at how much weight he had lost at the beginning of each academic year, a consequence of grueling and punishing schedules. Despite all he kept his grades up. The good news after graduating from Belgium was that he got a scholarship for his PhD studies in Germany. He was the only black in the program and his German was terrible. His scientific mentor was very supportive, and this support made it possible for him to get fellowship awards to travel to the US to present his research. During one of these visits he met Alida and the rest is history. He later graduated with a PhD, then applied and was accepted to an NIH funded postdoctoral program at Stanford. He travelled to the US as a postdoctoral scholar and is now an Instructor in the Department of Radiology. He is happily married to Alida with 2 kids and is passionately pursuing a dream that started about 20 years ago with the words of a dying mother who saw a vision and a father who inspired.

The life of an underrepresented minority (URM) especially in a foreign country is full of uncertainty and tough choices often have to be made, usually with limited resources. While the outcome of these decisions can be very diverse with some good and some bad, there is something common triggering minorities to emigrate: the lack of opportunities and the pursuit of an elusive happiness which is promised in the American Declaration of Independence.

Benedict Anchang, PhD
Instructor
Stanford Medicine | Radiology

“... continue to be passionate about maths and science ...”
Our summer student Kensley Villavasso is not only a gifted scientist, but also an accomplished artist. Kensley has been drawing for 15 years and her work was showcased in galleries, at plays in New Orleans, and at the New Orleans Museum of Arts. Kensley generously shared some of her pieces with us.

**Top - Double Vision**
I was motivated by the thought of every person having different sides to them that not everyone is able to see.

**Bottom Left - Clarity**
This a multimedia piece on canvas. This piece is a part of a collection I did in 2016 depicting different parts of the face and mind.

**Bottom Right - Expressions**
This is a color pencil piece about internal feelings. I was motivated by feelings that we are told to suppress and bottle in until we cannot hold them back anymore.
In October-November 2018, Justin Tse, a PGY-4 radiology resident at Stanford University, completed a 2.5 week rotation at Muhimbili National Hospital in Dar es Salaam in Tanzania. He joined a team of radiology residents and attendings from Dartmouth and Yale to help improve the practice of radiology in Tanzania. Justin will be finishing his residency at Stanford in 2020 and will be pursuing a fellowship in abdominal imaging and intervention afterwards. He hopes to combine his interests in abdominal radiology and global health by expanding HCC screening in low- and middle-income countries where hepatitis B is endemic, particularly sub-Saharan Africa. Here are his insights and reflections from his trip:

What were your first thoughts upon arriving in Tanzania?

If you can afford a flight to Tanzania, you will automatically be among wealthiest 5% in the country. That’s the percentage of the country’s population that has a bank account. The unemployment rate among young people was estimated to be 86% in 2012. And if you had a job, it’d pay about 86 cents an hour.

If you end up in Tanzania, you’d also be one of the oldest. The median age of the country is 17, and over 75% are estimated to be under the age of 25. A country of very young and unemployed (coupled with an all cash economy) is disastrous. Without income, there are no effective taxes; without taxes, there is no capital to fund social services, infrastructure, and government workers. When you have poorly paid government workers who are also assigned authority, it’s fertile ground for bribery and corruption. This is what I had mentally prepared myself for prior to my arrival.

I landed in Dar es Salaam following a 2-day journey, first flying from SFO to Zurich (11 hours), Zurich to Nairobi (9 hours), and finally Nairobi to Dar es Salaam (1.5 hours). Despite a nighttime arrival, it was still at least 80 degrees and humid. This would normally be perfect t-shirt and shorts weather in CA. Nevertheless, I made sure to cover up everything except my face, both to respect local religious/social customs of modesty and as a defense against mosquitos (the causative species of cerebral malaria is most rampant at night).
The first thing I did when I landed was apply for a visa. This ended up being the most uncertain part of my trip. “Volunteer”, as it turns out, was recently removed as a reason to enter the country. The reasoning I’m told is twofold. First, the presence of volunteers suggests that the country is in need of aid, which the government hates to admit. Second, volunteer organizations (NGOs) have a habit of publicizing the country’s poverty and human rights violations, which the country also hates. A group of Americans behind me in customs naïvely asked what box to check if they were here to volunteer; they were quickly ushered by guards into a separate area for questioning. After an hour, my visa was finally approved. As I learned, a US passport usually means that you are bringing money into the country, regardless of your actual reason to visit; this leads to very few questions if you say as little as possible.

Upon leaving the airport, I was immediately greeted by at least 30 taxi drivers. There was only one flight arriving in Dar es Salaam that evening and they waited all night for this one business opportunity. If you are new to the country, doing such business in Tanzania can be stressful. Everything is done in cash, and all prices are negotiable. The starting price depends on what you look like. East Asians are generally charged the most, as most of them are here for business reasons and likely on an expense account. Americans and “mzungus” (colloquial term for a Caucasian) are mostly here for tourism and are charged the next most. As a reference, the ride from the airport to the city for a foreigner costs about 30-40,000 Shillings ($14-18). This amount of money is the approximate life savings of an average Tanzanian. Of course, after factoring in the cost of car maintenance, fuel, and airport fees, there is very little money left for the actual taxi driver for this ride.

Ironically, the above factors translate to high levels of social trust upon economic matters. No one ever asked for money upfront. And if I didn't have enough cash, drivers were okay with collecting money the next day. Booking tickets for rides, tours and safaris are done verbally over the phone or via text messages, with no official reservation confirmation or receipt. No one ever asked for proof of a reservation either. Yet everything works out, sometimes even more reliably than in America (e.g. think about how many copies of a confirmation and forms of ID you need for any routine reservation). Local businesses and individuals rely on word-of-mouth reputation above all and that trust lowers the transaction costs that would be typical in America. I suspect that social trust is crucial for their economy; without it, their markets would cease to function effectively.

What would you like to share about Tanzania?
Tanzania is a relatively new country. It was formed in 1964 after the merger of two separate countries- Tanganyika and Zanzibar (hence the name Tanzania). Tanganyika was once part of German East Africa before becoming a territory of the United Kingdom. Zanzibar, on the other hand, was once the former capital of Oman / Muscat,
the center of the Arab slave trade, and a crucial leg of the spice trade. These historic roots have had lasting impacts. For example, over 99% of Zanzibar is Muslim, and large Indian and Middle Eastern populations have lived there for several generations as a direct result of either the Arab slave or spice trade (in fact, Freddy Mercury was born in Zanzibar to Parsi parents from India.) On the mainland, the predominant religion is Christianity, and there are neighborhoods that are historically British (e.g. Oyster Bay) juxtaposed with local Tanzanian districts (e.g. Temeke).

The country is home to over 60 million people, but only one city in the country has over 1 million people- Dar es Salaam. The rest of the population is scattered across the country's rural interior. Although the capital moved from Dar es Salaam to Dodoma (in the central region) a few decades ago, Dar es Salaam remains the de facto center of economy and government.

If you are a local Tanzanian, the first language you learn is your local village dialect (there are 126 of these). This is what you use to communicate with your relatives and friends. Swahili, the lingua franca, is learned next. This language unites over 100 different ethnic groups in Tanzania and is spoken in neighboring East African countries, including Kenya, Uganda, and DR Congo. English is learned 3rd, and though it is the language of business (and medicine), only a minority of the population can carry on a conversation in English.

How is radiology practiced in Tanzania?
I rotated at Muhimbili National Hospital, one of four national hospitals offering tertiary level care. This 1600-bed hospital is served by just 8 staff radiologists. As a comparison, I counted over 90 staff radiologists at Stanford + LPCH for 900 beds! The hospital has 2 MRI scanners (1 inpatient, 1 outpatient), 2 CT scanners (including a 128-detector Siemens Definition Flash scanner), and 4 ultrasound units. Room turnaround time is quick to keep up with the high patient demand; the inpatient MRI scanner performs about 40 studies per day.

Radiology training is very different from the US. Radiologists first have to complete a 5-year medical school (considered a bachelors degree) and an intern year. Afterwards, they work as a “registrar” (equivalent to a general practitioner or senior internal medicine resident) either for a few years or indefinitely, usually at their hometown. If their hospital has a need for a radiologist, they will sponsor a registrar to complete further training in radiology residency. Because subspecialty training is considered a masters degree, residents pay tuition (typically partially funded by their registrar hospital) despite also participating in the night float and call pool. Residency training is 3 years; 1st year is mostly didactics and ultrasound scanning, while the next 2 years are mostly plain films, CT, and MRI. Fellowships do not exist. Following residency, the radiologists are obliged to return to their registrar hospitals.

There were several differences between how radiology is practiced in Tanzania versus the US. Imaging requisitions are never reviewed for appropriateness or for protocol optimization. Sonographers interpret >90% of ultrasound studies themselves; only a few key images are saved and printed, and never looked at by a radiologist. Plain films performed in rural clinics may never be seen by any physician. A red post-it note is used to flag a stat study. Stat, however, is relative. The turnaround time for an ED study can take up to 3 days. For example, on a Monday, I interpreted a CT head on a patient with an acute MCA stroke and early signs of herniation. When I asked how to reach the primary team, the other residents looked puzzled; no one had ever communicated a critical result to another clinician. This endeavor was moot anyways, as I realized the CT had been performed 3 days prior (on Friday afternoon).
I think part of this stems from the fact that while radiology has existed in Tanzania for decades, radiologists as a profession is still relatively new. After all, the first radiology program had only begun 10 years ago. Without a strong precedent, radiologists’ role within clinical care is still undefined. Turnaround times, communications of critical findings, and protocoling studies may seem like a nuisance on call to us. On the flip side, I witnessed an environment where these duties are either undervalued or nonexistent, and it’s a struggle for their radiologists establish a role in patient care.

At the workstation, I spent most of my time teaching their junior residents my search pattern and approach to different studies. This was harder than I anticipated, as their imaging approaches our complexity. Sometimes I was asked to scan a renal transplant allograft, interpret a CT coronary CT angiography, supervise a body MRI, or interpret an MRI brain spectroscopy. All of this on the fly- with no StatDx, e-anatomy, or other Internet resources available. Luckily, the Yale attendings bailed me out when I needed help.

Interestingly, it is also much more crucial to establish a diagnosis radiographically. Many of the differentials we come up with at Stanford might seem like an academic exercise particularly when a suspicious mass is getting biopsied anyways. However, it is extremely uncommon for this step-by-step workup to occur in Tanzania- core biopsy and PET/CT are unavailable at this (tertiary, national) hospital, and a patient may proceed directly to surgery or chemotherapy based on what the imaging shows.

Why should radiologists bother with global health?
According to the WHO, 2/3rds of the world does not have access to basic radiology equipment, yet at least 60% of conditions rely on imaging for a proper diagnosis (100% if you’re at Stanford). To emphasize the importance of imaging in medical care, take a look at the WHO Model List of Essential Medicines, a list meant to reflect the minimum and universal needs of a basic healthcare system. Since its 1st edition in 1977, iodinated contrast made this list. You know what else made the list? Oxygen. As radiologists, I think we easily forget that we have just an equal stake in a patient’s outcome as the ordering provider. When we approve a contrast study protocol, we consciously agree with clinicians that the benefits outweigh the risks, and that such benefit includes the timely diagnosis that may save the patient’s life. If the WHO released a list of essential equipment, I’m willing to bet that an x-ray or CT scanner would make the top of the list. And if they released a list of essential specialties, radiologists would be in the top 2- tied for whichever specialty is tasked with ordering the study.

At the same time, the presence of radiology equipment doesn’t equal radiology. I think there is a misconception that global health radiology can be accomplished by installing modern CT/MRI equipment in a developing country and then sending the images through the cloud to be interpreted by radiologists in developed countries. That misses the point of what a radiologist actually does. We are responsible for designing protocols, ensuring that these protocols produce quality images, assigning the correct protocol for the indication, communicating critical findings to providers, and helping clinicians determine the next step in management. At a broader level, we are also advocates of public health (e.g. breast cancer, HCC screening), stewards of just resource utilization (imaging wisely), and experts of radiation/contrast safety. I would thus argue that image interpretation by itself constitutes a very small fraction of what we ought to be doing to maximize impact.

Justin Tse, MD
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In their excellent article, Juliet Bourke and Bernadette Dillon explain a multi-step process to achieve an inclusive workplace culture. Solving a complex problem typically requires input from at least six different mental frameworks: evidence, options, outcomes, people, process, and risk. In reality, no one is equally good at providing insights for all six frameworks; hence, the need for complementary team members. Realizing an inclusive culture can be enriching to the organization and its members:

Deloitte research identified four levels of diversity and inclusion maturity: (1) Diversity is a problem to be managed as a consequence of external mandates or response to complaints. (2) The value of diversity starts to be recognized, with grassroots initiatives (such as employee resource groups), a calendar of events, and other HR-led activities (such as mentoring or unconscious bias training). (3) An influential business leader steps up, challenges the status quo, and addresses barriers to inclusion. By role-modeling inclusive behaviors and aligning organizational systems, they create conditions and transparent communications that influence employee behaviors and mind-sets. (4) Diversity and inclusion are fully integrated into workplace culture and business processes and benefit innovation, customer experience, and business outcomes.

To realize an inclusive culture, Bourke and Dillon suggest the following action plan: Recognize, that progress will require a culture reset. – Create a shared purpose of diversity of thinking and inclusion – Build inclusive leadership capabilities – Take middle managers on the journey – Nudge behavior change by rewiring processes and practices – Strengthen accountability and recognition – Integrate insights of diverse employees and customers. Embracing an inclusive culture will deliver the outcomes of innovation, excellence and prosperity that pioneers in this area have reported.
The diversity and inclusion revolution: Eight powerful truths

Juliet Bourke and Bernadette Dillon
Deloitte Review, issue 22

Underrepresented Minorities
How Professionals of Color Say They Counter Bias at Work

Those in professional fields historically dominated by white people, including law, medicine and politics, say that the pressure to be prepared for these moments can feel particularly acute. It affects how they dress, what they carry in their wallets and how they behave. In an article by the New York Times, people described their efforts to ward off bias at work:


“'You are not lucky to be here. The world needs your perspective. They are lucky to have you.'

– Antonio Tierino
President & CEO of the Hispanic Heritage Foundation
You Matter