The TEDMED Experience

By Ivan Seah and Charleen Yeo

Clockwise from left: Eric Chen and Danielle Ofri in their element, and the Theranos booth

Introduction

If you are not yet familiar with TED (Technology, Entertainment, Design), consider this article an orientation into the world of big ideas. Over the past few years, TED conferences have been held internationally to spread and celebrate innovations that have the potential to change the world. Founded in 1984, TED has come a long way in promoting inventions in almost every industry. In fact, medical innovation has been such a huge part of TED that it has sparked off a dedicated annual meeting known as TEDMED.

Being constantly bombarded with facts in medical school, the inquisitiveness that we started off with seemed to have given way to monotony. What we felt we needed was an experience to inspire us as future doctors, to set in motion changes for better healthcare through better understanding of medical innovation. Hence, we signed up for last year's TEDMED meeting, and were delighted when our application to be sponsored by the TEDMED Front Line Scholarship was approved.

Each year, TEDMED handpicks both speakers and delegates from around the globe to convene in Washington DC. Unlike usual academic medical conferences, the debate is not about the intricacies of scientific research. Instead, it focuses on the exchange of ideas, especially cross-industry concepts, in the hope that innovation can play a part in tackling today's unsolved medical challenges. This ensures that all the selected attendees hail from interesting backgrounds. TEDMED 2014 saw more than 2,000 participants, which included 79 speakers of diverse experience and expertise. There were scientists, doctors, chief executive officers, activists, authors and even healthcare architects!

The experience

TEDMED 2014 was held concurrently in Washington DC and San Francisco, for the first time, with the theme "Unlocking Imagination", from 9 to 12 September. The conference programme was two pronged – it included a unified stage programme with live webcasts between the two locations, as well as a conglomeration of innovative start-ups and new health technologies nestled together in an incubator known as The Hive. TED events are renowned for their main stage presentations (those that are simulcast on YouTube) and this edition of TEDMED was no different.

In particular, the presentation made by the Google Science Fair 2013 grand prize winner, Eric Chen, resonated with us strongly. Eric, at the tender young age of 17, had already devised a way of solving one of the world's greatest healthcare challenges – influenza mutation. His winning project utilises computer models and biological assays to speed up discovery of new anti-influenza drugs. Eric spoke about the increasing online connectivity that the world currently enjoys and how it can be employed by young inquisitive minds to create solutions for healthcare problems. In his opinion, everyone can research and produce healthcare solutions. The Internet contains almost every piece of information required; professors of renowned

institutions can provide guidance via email when a good idea is proposed, and even funding for projects can be crowd-sourced these days. Gone are the days where resources were limited or unavailable. Instead, apathy for the medical issues around us is now the dominating problem.

The speech by Danielle Ofri, doctor and author of multiple medical autobiographies, also touched on a healthcare topic that struck close to our hearts. She discussed the antagonistic and unforgiving attitude towards medical errors that is present in many of our healthcare industries today. Demands for perfection in medicine render doctors unwilling to admit lapses or near misses, and this leads to stagnation when trying to learn from past mistakes. We need to understand that medical mistakes are not anomalies but a reality, and the first step would be to courageously acknowledge our own imperfections.

Aside from the main stage programme, we also enjoyed our time in The Hive, an initiative to sneak a glimpse into futuristic healthcare. The Hive was bustling with activity from the 80 invited biotech companies explaining and demonstrating their products. Viral cancer treatments, telemedicine modalities, novel diagnostic methods and surgical positioning systems were just a few of the game-changing innovations that blew our minds. Among them, the company that left us with the most lasting impression was a diagnostic company, Theranos.

During the previous few months, Theranos had been featured in the press for trying to revolutionise diagnostics. The company's product was simple. Using just 1/1,000 the amount of blood from a typical blood draw, its diagnostic system is able to detect a plethora of biomarkers. In fact, the results are produced even faster, in a matter of hours rather than days. We were offered a chance to check our cholesterol levels at the Theranos booth, and only a tiny drop of blood was taken from our fingers – similar to that of a capillary blood glucose test. In the typical hospital setting, patients would have to endure multiple venepunctures for whole tubes of blood, causing distress especially in children and the elderly with frail veins. The Theranos diagnostic system will surely advance healthcare by eliminating such patient distress in the years to come.

Conclusion

The three days at TEDMED left us wondering about what we could do as medical students. Having seen so many inventive minds at work, we felt the urge to follow in their footsteps, and believe in the spirit of innovation. Medical school is a phase of learning that all soon-to-be physicians must go through. However, it does not mean that we sit passively, simply trying to retain as much information as possible. Rather, we should take an active step towards transforming healthcare for the better. Although healthcare in Singapore is among the best in the world, we must constantly look for avenues to innovate. Innovation drives excellence – it is only through innovation that we can truly provide the best treatments for our patients. ■

As a full-time medical student, part-time scientist and writer, Ivan hopes he can utilise his varied experiences to change the culture of medicine in Singapore for the better. He recently started an online magazine focusing on interesting healthcare research and topics around the world and is aimed at boosting the culture of medical innovation in Singapore. To read more, visit http://www.synapsemag.com.

Charleen, who is constantly fascinated by medicine, is a final year student at the Yong Loo Lin School of Medicine. She looks forward to passing her MBBS so that she can finally start working with patients in the wards.

Illustrating the concepts of a healthy future

Photo: Charleen Yeo