TECHIES WITHOUT BORDERS

Annual Report 2022

Working with global medical leaders
to make medical education accessible to all.

Message from Manoj Thomas, President

Techies Without Borders have long pondered how to reorient our paths to address the scope and growth of our global operations. This year, the Board of Directors developed a strategic plan for scalable and sustainable operations for the next 5 years. I am excited about the prospects laid out in the strategic plan.

Our team of dedicated volunteers remains at the core of what we do. 2022 has been a memorable year for our team who has achieved many professional and personal milestones including college graduations, career growth, and Fulbright awards. We even had a post-pandemic get-together in Los Angeles, California!!

And to this awesome team, we proudly welcome Dr. Vera Sistenich, as the Medical Director for the Oceania region.

The TWB community is unlike any other. Year after year, we have stuck together, through thick and thin, to make a positive impact in the world. My gratitude to the entire family of "techies" whose grit and determination is astonishing, and who have spent tireless hours working "without borders" contributing to a cause much bigger than themselves.

I extend my special thanks to everyone who has helped us along the way through generous donations, networking, and well wishes.

Statement from Jennifer Borneman, CFO

Techies without Borders finished in a strong financial position, thanks to a successful GoFundMe campaign at the end of 2022. The fund campaign brought in over $13,000 that will be used for future Continuing Medical Education on Stick projects in Timor Leste, Uganda, Nigeria, and Gambia in 2023.

TWB non-profit corporation remains rated as a Platinum Level member on GuideStar-Candid platform, which is the highest Seal of Transparency.

Minimal travel related expenses of $2156 were incurred in 2022. To contain travel costs most devices were distributed through postal services and hand delivered by traveling partners when possible.

Equipment expenditures amounted to $3421; marketing to produce a CMES video was $2000; and other administrative costs were kept to under $700.

Our continued volunteer support from IT professionals, doctors, financial consultants, nonprofit administrators, musicians, and professionals with a variety of needed skills has allowed TWB to keep administrative costs extremely low.

It has been my honor to work with donors and the TWB teams to assure financial accuracy and security.

IMPACT

The Continuing Medical Education on Stick (CMES) Initiative operates in 17 countries including Nepal, Nigeria, Uganda, Democratic Republic of Congo, St. Lucia, Antigua, Ecuador, Guatemala, Dominican Republic, Fiji, Tonga, Solomon Islands, Cook Islands, Tuvalu, Samoa, Papua New Guinea, and Timor Leste.

CMES provides USBs and small computers called Raspberry-Pi to over 4500 doctors and approximately 12,000 nurses, serving a patient population of over 7 million.

Using the devices they can access free monthly Emergency, Rural, and Primary Care medical education as downloadable podcasts and PDF files. Providing on-site medical education keeps knowledge current, improves patient care, and decreases the worlds' carbon footprint by limiting travel.

CMES Project global usage for 2022

Our USB participants logged 1256 usage hours.

Pi users downloaded 380 articles for listening and reading.

Dr. Yan Li conducting CMES training at Kavieng Hospital, New Ireland Province, PNG (Sept 2022)

The top PDFs viewed were:

1. *2022 January Written Summary; Stuart Swadron*
2. *Paper Chase 5 - Pediatric Seizures and Brain Badness; Sanjay Arora, Mike Menchine*
3. *Pneumonia - Myths and Scores; Rob Orman, Cameron Berg*

The top MP3 files downloaded were:

1. *Critical Care Mailbag: When to Stop in Cardiac Arrest; Anand Swaminathan, Scott Weingart*
2. *Rural Medicine - Acute Urinary Retention; Mel Herbert, Vanessa Cardy*
3. *Rural Medicine: Acute Aortic Occlusion; Vanessa Cardy, Ben Shepherd*

CMES Project reaches new corners of the world

Papua New Guinea

15 hospital sites in Papua New Guinea received CMES-Pi devices. Dr. Manoj Thomas and Dr. Yan Li worked with the PNG government in April and Sept 2022 to install remote hospital sites and the main hospital in the capital of Port Mosby.

Ecuador

Dr. Manoj Thomas, Dr. Yan Li and Dr. Debra Stoner travelled to Ecuador during the months of September to November. Working with our partners Timmy Global Health and Hombre y Hombre, the older CMES-Pi devices installed in 2018 at Santo Domingo Clinic and Padre Carollo Hospital in Quito were updated.

Additional sites were identified leading to the following installations.

1) Dr Litte, a Family Medicine doctor working in the Puyo Amazon region received a Spanish language Pi at her clinic.

2) Two health centers located in the Amazon forest, Centro de Salud, Chontapunta and Centro de Salud, Misahualli received Pi devices.

3) Universidad de San Francisco's medical clinic received a Pi as a pilot project. The physicians utilizing the clinic work at several other hospitals giving many an opportunity to test the Pi and CME content.

Ecuador 2022:   Manoj Thomas, Deb Stoner,
Johnathan Guillemot & Magu Velez (University San Francisco Quito, Ecuador),
Pablko Boado (Foundation Hombro a Hombro, Quito, Ecuador)
This is an example of our global partnerships working with universities and local nonprofit partners.

Fulbright scholarships

Dr. Yan Li received a 2023 Fulbright Future Scholarship funded by The Kinghorn Foundation and conducted her research of an AI-enabled Dementia Early Assessment Tool in New South Wales Australia.

Dr. Manoj Thomas received a Fulbright Global Scholar Award for academic year 2022-2023. He will be working in Ecuador and Uganda on researching CMES outcomes.

International SDG Collaboration Program Grant

The International SDG Collaboration Program (ISCP) Grant from the University of Sydney was awarded to Dr. Manoj Thomas. The grant has provided the financial boost required to scale and support the TWB opportunities in Ecuador, Papua New Guinea, Timor Leste, Uganda, and Nigeria.

Outreach & Conferences

Dr. Debra Stoner presented: *CME for EM Practitioners Using Low-Cost Technologies: A Perspective Based on Experiences in Nigeria and Uganda*; at the African Conference for Emergency Medicine, Accra, Ghana in November.

Dr. Yan Li and Dr. Manoj Thomas presented: *CMES Project* at the Papua New Guinea 56th Annual Medical Symposium in September.

Dr. Yan Li's doctoral students presented a paper at the 2022 AMICIS conference.
Davison, S., Avgil, A., **Li, Y.** & Yang, S. (2022) *A Semi-automatic Indexing Pipeline for Medical Document Retrieval in Resource-constrained Settings*.

Volunteer Publications

Thomas, M. A., Li, Y., Sistenich, V., Diango, K. N., & Kabongo, D. (2022). A multi-stakeholder engagement framework for knowledge management in ICT4D. Journal of the Association for Information Science and Technology.

Thomas, M. A., Li, Y., & Lee, A. S. (2022) Generalizing the Information Systems Artifact. Information Systems Research 33(4):1452-1466.

Dr. Yan Li and Dr. Manoj Thomas presented the CMES Initiative at the PNG Society for Emergency Medicine Annual Conference

New volunteers

Siyu Xiang

Siyu joined TWB in October 2022 to work with the IT team as the backend developer for the cloud and database management. He is a PhD candidate in Claremont Graduate University, Claremont, CA, USA. Siyu said "I believe that software provides a conversation platform between user and developer instead of just a tool."

Alison and Richard Rupert

TWB worked with a video production company and created a two minute video describing the CMES project. This was a long-term goal, and we are proud of the video.

Our special thanks to Alison and Richard Rupert, Hughesville, PA for donating their voiceover and music production skills.

Dr. Vera Sistenich

Vera joined in February 2022 as the TWB Oceania Medical Coordinator. She is a Specialist Emergency Physician in Australia and former Research Associate at the Department of Global Health and Population at the Harvard T. H. Chan School of Public Health (HSPH). Her research focus is on the development and implementation of clinical and public health care policies in the setting of humanitarian disasters.

Volunteer hours in 2022

2316 volunteers' hours in the areas of medicine, administration, finance, and IT.

Social Media

We are grateful for your support when you like and share our posts. Here are the figures for 2022.

Facebook   **254** followers; on average our posts reach 102 people.

LinkedIn   **290** followers, page visitors are up **40%**

Instagram   **99** followers

IT update

The Techie Team made several improvements in 2022 that enhanced the capabilities of the Continuing Medical Education on Stick platform.

- The CMES platform has a revamped cloud-based admin panel.
- TWB secured additional Dataplicity licenses to support the wider rollout of CMES-Pis globally.
- New CMES-Pi images were created to integrate changes to the CMES software.
- A semi-automatic indexing pipeline (SIP) for tagging CMES documents was created to improve the efficiency and effectiveness of tagging and finding a topic using the Search feature.

Dr. Patricio, a USB user from a 2018 Amazon trip, is now coordinating an installation in his Argentina hospital.
This is an example of how the CMES Initiative grows from a grassroots movement.

Partners & Sponsors

We are grateful for the support from our sponsors.

- Dataplicity gifted us an additional 100 licenses in April 2022 that allow tracking of Pi usage.
- Apple, a new sponsor, provides a free app license.
- Microsoft provides an Azure Grant which supports our cloud-based server.
- EM:RAP provides the Emergency Medicine CME content free which is uploaded to our server for global distribution.

dataplicity®   Apple   Microsoft

EM:RAP   Emergency Medicine: Reviews and Perspectives

African Federation of Emergency Medicine (Nigeria)   AFEM

Global Emergency Care (Uganda)   Timmy Global Health   TIMMY GLOBAL HEALTH

Papua New Guinea Society for Emergency Medicine (PNG SEM)

GitHub   amazon   PayPal