

Mapping UNSW Impact Global Development

Primary SDG	3: GOOD HEALTH AND WELL-BEING
Broad theme	Fixing medical equipment
Research	Offering students real world experience fixing medical equipment in remote hospitals in Cambodia and Uganda
Impact region	Cambodia, Uganda
Faculty	Engineering
School/Institute	Biomedical Engineering
Academic	Dr Lauren Kark
Project partners	Engineering World Health, New Colombo Plan
Related SDGs	4: Quality Education

Elevator pitch

To provide students with real world experience in their degree, Lauren teamed up with an NGO that offers students training and experience fixing medical equipment in regional and remote hospitals in Cambodia and Uganda, ensuring patients receive better and more sustainable care.

The Challenge: Medical equipment not being used

Hospitals in countries like Cambodia and Uganda have been donated equipment from donor countries but equipment manuals are often in foreign languages, incompatible plugs and parts mean much of the equipment is left unused, and there is often no one available to fix the equipment should it need repairing. Without this equipment, hospital staff are performing at sub capacity, meaning patients are not being treated in the optimal way and could suffer from extended illness, unnecessary hospital visits, and even unnecessary death.

UNSW's solution: Provide an avenue for students to repair equipment and get real world experience

Engineering World Health (EWH) specialises in improving healthcare outcomes in the developing world. It engages volunteer engineers to install and repair life-saving medical equipment in the world's most resource-poor hospitals, and trains local technicians to maintain the equipment.

Inspired by EWH's work and the real life experience it offers students, Lauren approached EWH to start a UNSW Chapter of EWH in 2014. Two years later in 2016 the two agreed to run the first Summer Institute at UNSW. The first project of the institute saw UNSW undergraduate and postgraduate students head to Phnom Penh, Cambodia in 2016 to participate in EWH's nine-week program. In the first four weeks, students are trained in the repair of medical equipment and local language and culture. In the next five weeks, students travel to regional and remote areas to repair medical equipment at hospitals. While there, they are encouraged to train locals in how to sustain the equipment, and to identify and resolve any other significant issues they can assist with. This second tier to the experience helps students to identify problems in real world settings and resolve them. In one example, students saw there were many kids with chronic health issues in a hospital but nowhere for them to congregate, so they created a playroom just for children.

The Cambodian program proved so popular that Lauren arranged for UNSW students to access a second destination in Uganda where the students undertake the same nine-week course. In 2017, 34 students undertook the Cambodian course and 14 students headed to Uganda for its course. Students repaired over 600 pieces of medical equipment in total, which translates to an estimated saving of around \$1 million in repair costs. The Summer Institute is funded by UNSW Engineering and the New Colombo Plan. Lauren remains its Academic Lead. She is EWH's point of contact at UNSW, and she recruits the students, does all the paperwork and arranges the necessary toolkits.

The Impact: Fix equipment, train locals in operation of equipment, better care for patients

The project with EWH sees much needed medical equipment in hospitals in Cambodia and Uganda being repaired and used, ensuring patients receive the best treatment on offer. This equates to reduced patient stays and impairment times, and the saving of lives. In some cases students are training locals in how to operate the equipment, providing sustainability around the equipment's use. While there, students are helping out in other ways, enriching their experience and the hospital's ability to provide humanitarian care to its patients.

Researcher

Dr Lauren Kark is a Senior Lecturer in Biomechanics at UNSW. She specialises in amputee biomechanics. Lauren got involved with EWH because she believes students should be exposed to real world challenges during their degree, not after it.

Ben Falkenmire 07.08.18