Royal Academy of Engineering | Leaders in Innovation Fellowships®

Innovator Showcase

6 CLEAN WATER AND SANITATION

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

HARVESTING DRINKING WATER FROM THE AIR FOR HOMES BUSINESSES & REFUGEES

Aqua Poral Ventures

Jordan

Kyle Cordova

In a landlocked nation where water is scarce, but still needed for the purposes of agriculture and industry, as well as in households, Aqua Poral Ventures' water harvesting technology is the culmination of a 15-year journey. Kyle and his team have designed porous sponges capable of drawing moisture out of even arid air, through a bespoke process which generates clean and sustainable drinking water.

The opportunities provided to Jordanian scholars and graduates by Aqua Poral Ventures aligns with the UN's Sustainable Development Goal of prioritising clean water and sanitation, as well as bringing industry innovation and infrastructure to a country not renowned for manufacturing.

Minimising the need for plastic water bottles supports the pursuit of sustainable cities and communities, while the water harvesting technology offers an innovative method of tackling the water scarcity caused by climate change.

While the company's aim is to install a device in every Jordanian home, hospital and hotel, Aqua Poral Ventures is already bringing these devices into refugee camps. By working with NGOs, they're providing hundreds of thousands of displaced persons with immediate access to drinkable water, preventing dehydration and disease. Along the way, they've generated impactful research opportunities and jobs for young Jordanian engineers and scientists, commercialising research from academia, and winning an award from UNICEF.

At a time of growing water scarcity, Jordan is the world's second poorest nation in terms of renewable water sources, with an expected deficit of available fresh water by 2035. By repurposing porous molecular sponges typically used for carbon capture, inorganic chemist Kyle Cordova has succeeded in extracting water vapour from the air. This trapped humidity is then concentrated and released, bringing water security and independence to families throughout Jordan.

"LIF allowed me to learn and grow as an entrepreneur," says Kyle. "The Academy really helped me to get this idea off the ground, encouraging me to start thinking less as a scientist and more as a businessperson. They provided me with the foundation for everything I've done – market analysis, design engineering, connecting with investors and pitching. I knew nothing about these skills going into the programme, which focused on helping me grow as an entrepreneur."

"LIF is almost essential for countries like Jordan," says Kyle. His cohort included other Jordanians, from senior professors to undergraduate students: "We were all championing each other's ideas and mentoring each other." The company's first order involved supplying a thousand devices to the Government of Jordan, with the hardware being manufactured by another LIF participant: "It's very rare that you get to see research have an impact like this. I think LIF is a fantastic programme, and I can't recommend it enough."

The Royal Academy of Engineering's Leaders in Innovation Fellowships (LIF) programme supports talented entrepreneurs from around the globe to turn their engineering innovations into impactful, sustainable businesses.

Royal Academy of Engineering
Prince Philip House
3 Carlton House Terrace
London
SW1Y 5DG

info-lif@lif.raeng.org.uk
Tel: +44 (0)20 7766 0600
www.raeng.org.uk
@RAEngGlobal
Registered charity number 293074