

# INNOVATION IN INTERNATIONAL DEVELOPMENT LABORATORY

*putting Purdue's innovations to work for global sustainable development*



In September 2015, UN member countries will adopt a new set of sustainable development goals (SDGs) that will transform the world by 2030. They will guide global efforts to eradicate extreme poverty and hunger, ensure healthy lives and quality education, empower all women and girls, ensure access to water and sanitation, ensure access to affordable, sustainable energy for all, build resilient infrastructure and promote sustainable industrialization.



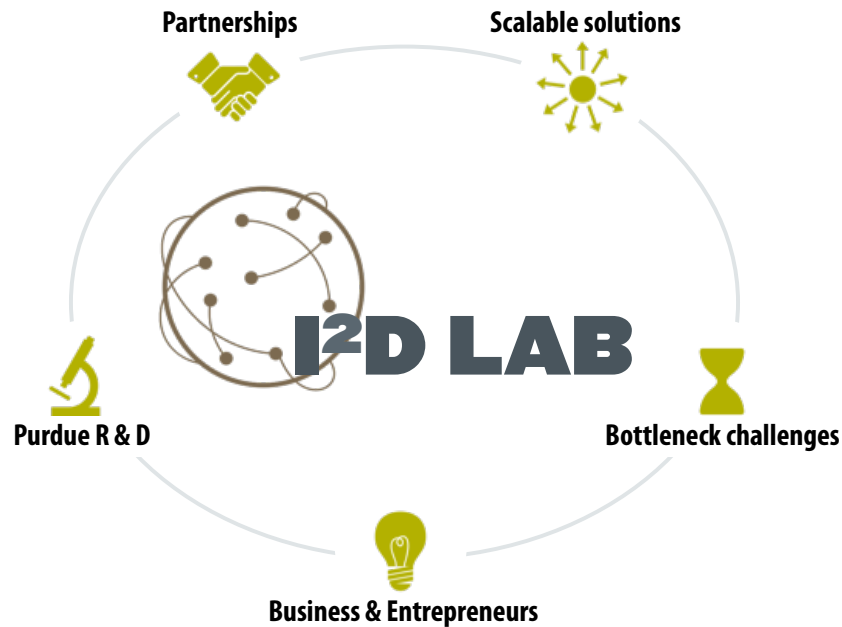
Engineering innovation can and must play a central role in achieving these goals. However, translating engineering innovation to impact in low and middle-income countries (LMICs) requires partnerships and investment. Partnerships with communities in LMICs ensure that the voice of the customer is taken into account in designing appropriate solutions for sustainable development. Partnerships with key stakeholders - businesses, entrepreneurs, and NGO's in LMICs ensure that innovations can be delivered at scale with viable business models. Partnerships with researchers in the social sciences, agriculture, pharmacy, medical, and business schools are needed to design appropriate products and services. Investment is needed at all stages of the innovation pipeline until the intervention has the desired impact and is sustainable.



The Innovation in International Development (I<sup>2</sup>D) Lab translates Purdue's engineering innovations to sustainable global development impact for thousands of people in LMICs. It provides connectivity to key stakeholders and potential donors in international development, and seed funding for designing and testing innovative yet appropriate solutions for communities in LMICs. It provides a fertile ground for interdisciplinary student and faculty teams to work on solving roadblock challenges related to:

- Water and sanitation
- Healthcare
- Energy access
- Labor-saving innovations
- Information and communication technologies (ICTs)

Through partnerships I<sup>2</sup>D Lab translates Purdue's engineering innovations to scalable solutions for eradicating extreme poverty, hunger, improving global health, building resilient societies, and empowering vulnerable populations.



## PARTNERS

I<sup>2</sup>D Lab partners with the Purdue University campus units including Burton Morgan Center for Entrepreneurship (BDMCE), corporate partners such as Dow AgroSciences, and international partners including Indiana University-led Academic Model Providing Access to Healthcare (AMPATH) and Catholic Relief Services (CRS).

## PROJECTS

I<sup>2</sup>D Lab is providing both financial and administrative support as described below.

### WATER AND SANITATION

**SLOW SAND FILTERS** Kenya, Tanzania, China, India, Colombia – undergraduate R&D support

**RE-INVENTING HAND WASHING WITH SOAP IN SCHOOLS** Ethiopia – graduate research assistantship

**SMART PHONE BASED SPECTROPHOTOMETER + TURBIDITY METER FOR DRINKING WATER TESTING** Kenya – graduate research assistantship

### HEALTHCARE

**COUNTERFEIT DRUG DETECTION** Tanzania – undergraduate R&D support

**POINT-OF-CARE DETECTION OF NEONATAL SEPSIS** Kenya – graduate research assistantship

**POINT-OF-CARE DIAGNOSTICS FOR ROUTINE CERVICAL CANCER SCREENING FOR LMICs** Kenya – travel grant

**NOVEL DETECTOR FOR THE DIRECT QUANTIFICATION OF HIV VIRAL COPY NUMBER** Kenya – travel grant

**OPEN-SOURCE BAYESIAN FRAMEWORK FOR AUTOMATED SCREENING BASED ON CHEST X-RAY IMAGES** Kenya – travel grant

### ENERGY ACCESS

**HYBRID RENEWABLE ENERGY SYSTEMS** Cameroon – undergraduate R&D support

### LABOR-SAVING INNOVATIONS

**MULTI-PURPOSE VEHICLE FOR DEVELOPING COUNTRIES** Cameroon, Tanzania, Uganda – undergraduate R&D support

### INFORMATION AND COMMUNICATION TECHNOLOGIES

**HUMANITARIAN RESPONSE AND SUPPLY CHAIN MANAGEMENT** Multiple locations – graduate research assistantship

**ENGINEERING SKILLS CURRICULUM AND DIGITAL MATERIALS FOR OUT OF SCHOOL YOUTH** Kenya – graduate research assistantship