

The Global Innovation

By Lauren M. Dembeck, North Carolina State University (AWIS Member since 2014)

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As the world becomes more connected and intertwined, it presents a series of unprecedented opportunities and conflicts. We have more opportunities to travel, learn about other cultures, and keep tabs on world events. Globalization offers the chance for human kind to come together to solve problems faced by every nation, such as poverty, global climate change, struggling economies, and access to basic necessities. Recognizing the potential for global collaboration and innovation, the United States and the United Kingdom launched the Global Innovation Initiative (GII) as a joint effort in October 2013. The GIIF focuses on major challenges facing our world today and aims to bring together the best and brightest minds to find solutions.

The Initiative awards grants to multinational university consortia focusing on issues of global significance that can be addressed by science, technology, engineering, and mathematics (STEM) research. It is administered by the Institute of International Education, which also hosts programs such as the Fulbright Program and the British Council, sponsored by the US and UK respectively.

As noted on their website, the GIIF has four main goals: to increase the global mobility of students, researchers, faculty, and higher education administrators from the US, the UK, and other countries; to develop a cadre of people in the US, UK, and other countries who have the international experience, outlook, and knowledge to confront global challenges and operate in a global context; to encourage international collaborations that develop capacity across a range of universities in the US, the UK, and other countries; and to forge university and business linkages that support a globally mobile talent pool and a multinational base for the exchange of discovery and innovation.

The US grant competition will award approximately six grants this cycle ranging from \$100,000 to \$200,000 with priority being given to grants that address STEM-related issues in four areas: a) energy, climate change, and the environment; b) urban development; c) agriculture, food security, and water; and d) global health. The GIIF aims to foster collaborative relationships between institutions in the US and UK, and also form partnerships with institutions in developing nations. Currently, four such nations have been selected for GIIF participation: Brazil, China, India, and Indonesia. In order to qualify for a grant, groups must include at least one US, one UK, and one developing country's institution of higher education.

Through the inaugural cycle, 23 grants were awarded in total, 10 US- and 13 UK-based. While all focus areas were represented by the funded research proposals, food security and global health issues dominated as they comprised just over half



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of the funded proposals. Partnerships with Chinese institutions focused on health initiatives, the food supply, and energy while partnerships with India centered on maintaining clean and plentiful water sources. Both the Indonesian and Brazilian partnerships were primarily investigating land management and conservation strategies with a secondary focus on climate change mitigation.

The individual projects vary, but each has the potential to transform standard food, water, and land use practices and move the global economy toward a more sustainable future. The following examples highlight some of the on-going projects:

Reducing Carbon Emissions through a *Hydrogen Economy*, *University of California Davis, Oxford University, Shanghai Institute of Applied Physics (China)* - Hydrogen produced from sunlight and water serves as a renewable energy source and could potentially replace fossil fuels. This consortium seeks to identify catalysts for hydrogen processing.

Sustainable Forest Management in Indonesia, *Northern Arizona University, Aberystwyth University, University of Mataram (Indonesia)* - This project explores impact on local communities under the Payments for Ecosystem Services (PES) in which developed countries compensate developing countries for ecologically friendly land use practices.

Crowdsourcing Water Quality: Using Mobile Technology to Monitor Access to Safe Drinking Water, *Georgia Institute of Technology, London School of Hygiene and Tropical Medicine, and National Environmental Engineering Research Institute (India)* - This project attempts to utilize crowdsourcing methods to monitor drinking water quality thereby providing an alternative to expensive standard water testing methods.

Seeing with Sound-Developing an Echolocation Device based on sensing principles derived from Human Users, *University of Birmingham, Ohio State University, Beijing Institute of Technology (China)* - This research seeks to determine the design parameters necessary to create wearable echolocation devices for blind people. Such a device would grant the blind more independence in daily life through enhanced spatial sensing.

Though the GII is still in its infancy, it offers hope by providing funding to address global issues while simultaneously strengthening international partnerships and creating an inclusive, globally-focused research workforce. To learn more about the innovative research funded by the GII and up-coming application deadlines, visit

<http://www.iie.org/Programs/Global-Innovation-Initiative>

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Lauren M. Dembeck is currently a doctoral candidate in Genetics. In her spare time, she enjoys serving as an animal care volunteer at Carolina Tiger Rescue.