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## Reaching Across the Globe and to the Stars

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# Reaching Across the Globe and to the Stars

From maternal health to science in space, Jefferson's global initiatives are attacking pressing problems through connected learning and investigation.

BY EDYTA ZIELINSKA (ESZ)

Research blooms in an interconnected world. Research that is open to the rich knowledge, experience and culture of collaborators across the globe is stronger for it. Thomas Jefferson University is building international partnerships to tackle health disparities and innovations in medicine, and to broaden access and opportunities that have lasting impact. Read about Jefferson's global footprint.

## Africa Coalition

The Jefferson Consortium of African Partnerships (JCAP) forms multi-institutional partnerships with African colleagues in academia, industry and government in pursuit of a healthier, equitable, resilient African future. Led by Chris Harnish and Lauri Romanzi, MD, JCAP includes collaborations with faculty and students across the continent, with in-depth institutional-level partnerships in Rwanda and Malawi. In Rwanda, JCAP is working on initiatives to improve road traffic and reduce crashes and injuries. Elizabeth Krebs, MD, has supported Rwandan institutions to win road-safety funding from the United Nations Road Safety Fund and Global Road Safety Facility of the World Bank. Chris Harnish leads the Malawi Health and Design Collaborative in partnership with the two largest tertiary teaching and research hospitals in the country. They have developed safer care models for infectious disease units and are currently working on designs for the first regional teaching hospital in the country.

## India Centers

The biggest contributors of maternal and infant death worldwide are blood loss during childbirth, hypertension during pregnancy and preterm birth. In a landmark clinical trial, India Center director Richard Derman, MD, and his research colleagues in the U.S. and India, along with members of the NIH-funded Global Network for Women's and Children's Health, showed that daily low-dose aspirin could safely decrease the risk of preterm birth by 11%. The trial included nearly 12 thousand women in India, Pakistan, Guatemala, Democratic Republic of the Congo, Kenya and Zambia. His prior work also showed that misoprostol, a common and inexpensive lipid hormone, could reduce blood loss during childbirth. Now Dr. Derman and his global collaborators are attacking anemia in the RAPIDIRON trial; anemia affects 50% of pregnant women in India and is a strong contributor to both maternal death and neurodevelopmental outcomes in the children of affected women.

## Ireland Center

The University has formed a working partnership with University College Dublin (UCD), Technological University Dublin and Ulster University in Northern Ireland to focus on global issues where interdepartmental infrastructure already exists, and where faculty have globally recognized expertise. The eight content areas for exploration include architecture and the built environment, autism spectrum disorders, maternal child health, eye diseases health disparities, nutritional sciences, digital health and technology applications. Each of the European partner institutions has a history of having received HORIZON funding for collaborative research, as well as ERASMUS funding to promote student exchanges. The Jefferson Institute for Bioprocessing (JIB) was developed by a model created in Ireland. A joint collaboration with the College of Architecture and the Built Environment (CABE) is being explored to expand SMART Labs, a doctoral program developed at UCD which grants PhDs credits for practical life experience. An expanded academic partnership, which includes Wills Eye Hospital links new innovation to address the leading causes of blindness globally.

## Italy Center

The Italy Center, led by Ignazio R. Marino, MD, is the first to offer a joint and unprecedented program granting students a double MD degree valid both in the U.S. and Europe, as well as a Master in Population Health. The Center is also home to a unique MS program in fashion design management that draws from collaborations with major Italian universities and companies. Italy Center programs draw international funding and foster collaboration across borders, including joint clinical trials on vascular surgery and stroke/Parkinson's, and a partnership aimed at building a new Institute of Neuroscience in Rome.

## Israel Center

Led by Zvi Grunwald, MD, at Jefferson, the Israel Center focuses on collaborations with innovation and life-science industries as well as leading academic and medical centers in Israel. One set of collaborations is poised to send Jefferson research to the International Space Station (ISS) aboard the Rakia mission, the first private mission to the ISS. Three projects will examine the impact of space on the human body, specifically: the effects of mission-induced stress; changes in the urinary microbiome; and how space travel affects the immune system.

## Japan Center

The Japan Center, led by Charles Pohl, MD, has been forging collaborations with several institutions in Japan in the realms of education, research and clinical care innovations. One partnership explores pandemic-related challenges and new opportunities in undergraduate nursing education between Japan and the U.S. Researchers at Jefferson and in Japan are evaluating opportunities for synergistic collaboration in various academic disciplines, including aging, rehabilitation medicine technology, telemedicine applications, robotics and artificial intelligence. Jefferson is also working with Toyota and Canon to advance new educational initiatives for students in design thinking, innovation and population health. Finally, the Center is proud to be hosting researchers from Japan, who are currently at Jefferson working with expert PIs in the fields of ischemia/reperfusion injury, resuscitation science and artificial intelligence/learning.

## Latin America Consortium

Projects in the planning phase include the creation of collaborative faculty development initiatives with Universidad de Los Andes in Bogota, Colombia. Ongoing projects include a new medical student case-based learning initiative currently being tested with Universidad CES in Medellin, Colombia. There are additional longitudinal clinical research initiatives in the area of infectious disease with partners in Peru.