

GRAND CHALLENGES IN GLOBAL HEALTH FACT SHEET

Grand Challenges in Global Health (GCGH) is a suite of grant programs intended to help overcome bottlenecks preventing the creation of new and better health solutions for the developing world.

We launched the initial GCGH initiative in 2003 in partnership with the Foundation for the National Institutes of Health, the Wellcome Trust and the Canadian Institutes of Health Research. The program is modeled after the grand challenges formulated more than a century ago by mathematician David Hilbert, whose list of important unsolved problems has spurred innovation in math research ever since.

GCGH focuses on seven goals and 14 major global health challenges identified from thousands of suggestions from experts worldwide. The ultimate aim is to create health tools that are effective and inexpensive, easy to distribute, and simple to use in developing countries.

In 2005, GCGH awarded 45 grants totaling \$458 million (U.S.) to fund innovative research projects involving scientists from

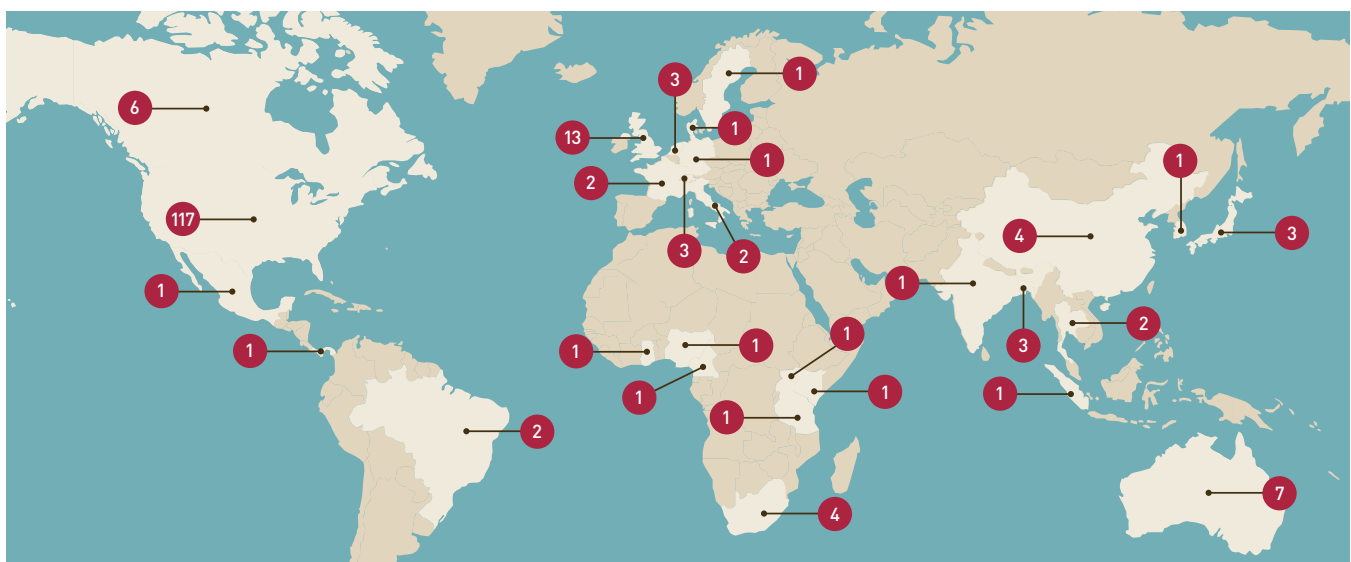
33 countries. Over the last four years, these teams have worked to create broad platforms for further research as well as specific products to address the world's most pressing health problems.

Recognizing that great ideas can come from anywhere and anyone, in 2008 we expanded the initiative to include Grand Challenges Explorations (GCE). Topics for each round of GCE grants address the same seven goals identified in the initial program.

GRAND CHALLENGES EXPLORATIONS

GCE uses a streamlined, online grantmaking process. Applications are two pages and no preliminary data is required. The proposals are championed by innovators who select grants based on the quality of the idea and its potential for impact rather than the experience or the affiliation of the applicant. Twice a year, multiple winners are selected and each is given a grant of \$100,000 (U.S.). Projects showing success have the opportunity for additional funding of up to \$1 million (U.S.) or more.

GRAND CHALLENGES EXPLORATIONS GRANTS



To date we have awarded 185 Grand Challenges Explorations grants in 28 countries.

United States 117	China 4	Netherlands 3	Italy 2	Germany 1	South Korea 1	Singapore 1
United Kingdom 13	South Africa 4	Switzerland 3	Thailand 2	Ghana 1	Mexico 1	Sweden 1
Australia 7	Bangladesh 3	Brazil 2	Cameroon 1	India 1	Nigeria 1	Tanzania 1
Canada 6	Japan 3	France 2	Denmark 1	Kenya 1	Panama 1	Uganda 1

SEVEN LONG-TERM GOALS TO IMPROVE HEALTH IN THE DEVELOPING WORLD

1

Improve vaccines

2

Create new vaccines

3

Control insect vectors

4

Improve nutrition

5

Limit drug resistance

6

Cure infection

7

Measure health status

Innovations in the Making

Goal 1: Improve vaccines

Many projects focus on creating vaccines that are effective after a single dose, can be delivered without needles, and do not require refrigeration, including a GCE grant to the University of Tokyo to advance a rice-based oral vaccine that can induce both mucosal and systemic immunity.

Goal 2: Create new vaccines

Even though vaccines have been developed for many of the most common diseases, the world still lacks vaccines for the biggest killers—malaria, tuberculosis (TB), and HIV/AIDS. One GCGH project at The Rockefeller University is working to develop vaccines that stimulate the immune system's dendritic cells, which are known to play an important role in protecting against infectious diseases like HIV/AIDS and malaria.

Goal 3: Control insect vectors

A number of promising approaches to combating malaria and other

insect-transmitting diseases exist, including a grant to Imperial College, London, to utilize “greedy” genes, quickly introducing favorable traits such as sterility or an inability to transmit disease into mosquito populations.

Goal 4: Improve nutrition

Creating nutrient-rich staple crops that can be grown in harsh climates is the focus of several projects, including a grant to Queensland University of Technology to increase the nutrient content of vitamin A, vitamin E, and iron in bananas, which are a major staple food in many developing countries.

Goal 5: Limit drug resistance

Great strides have been made to combat disease-causing microbes that often mutate and develop drug resistance. A novel approach through a GCE grant to the Common Heritage Foundation in Nigeria is developing a “fever kit” for use among nomadic populations to help them accurately diagnose

and treat fevers in a way that reduces mortality and drug resistance.

Goal 6: Cure infection

Various strategies to fight the increasing drug resistance of TB and to pursue therapies to cure latent infections are additional areas of focus. A grant to an international team of researchers from the United Kingdom, the United States, Singapore, South Korea, and Mexico supports an attempt to understand the fundamental biology of latency and use this knowledge to develop drugs against latent TB.

Goal 7: Measure health status

Numerous projects are working to develop new approaches for obtaining accurate information on the burden of injury and disease in developing countries. The University of Washington, with a team from Tanzania, Australia, and the United States, is working to develop new technologies and methods for assessing health status in the developing world.

OUR COMMITMENT

Our dedication to the overarching goals of GCGH will continue. To this end, we plan to:

- launch new Requests for Proposal (RFPs) to fill gaps in current approaches or to support additional progress toward GCGH goals;
- continue to invest in a broad range of high-risk, transformational ideas through GCE;
- invest in completing projects that can be further developed or that require modest additional time and support to meet critical goals;
- better define the paths to solutions for each GCGH goal and develop partnerships for continued investments.

It is pivotal that we continue to expand intellectual resources against the world's global health challenges by drawing from the broader scientific community and engaging new minds from different fields. Through our commitment and partnership with other funders and donors, we hope to meet these goals, which have the potential to transform all of global health.

Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty. In the United States, it seeks to ensure that all people—especially those with the fewest resources—have access to the opportunities they need to succeed in school and life. Based in Seattle, Washington, the foundation is led by CEO Jeff Raikes and Co-chair William H. Gates Sr., under the direction of Bill and Melinda Gates and Warren Buffett.

For additional information on the Bill & Melinda Gates Foundation, please visit our web site: www.gatesfoundation.org.

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