

GRAND CHALLENGES IN GLOBAL HEALTH

FACT SHEET

OVERVIEW

Grand Challenges in Global Health (GCGH) is a suite of grant programs intended to help overcome bottlenecks that prevent 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. We modeled the program after the grand challenges formulated more than a century ago by mathematician David Hilbert, whose list of unsolved problems has spurred innovation in math research ever since.

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

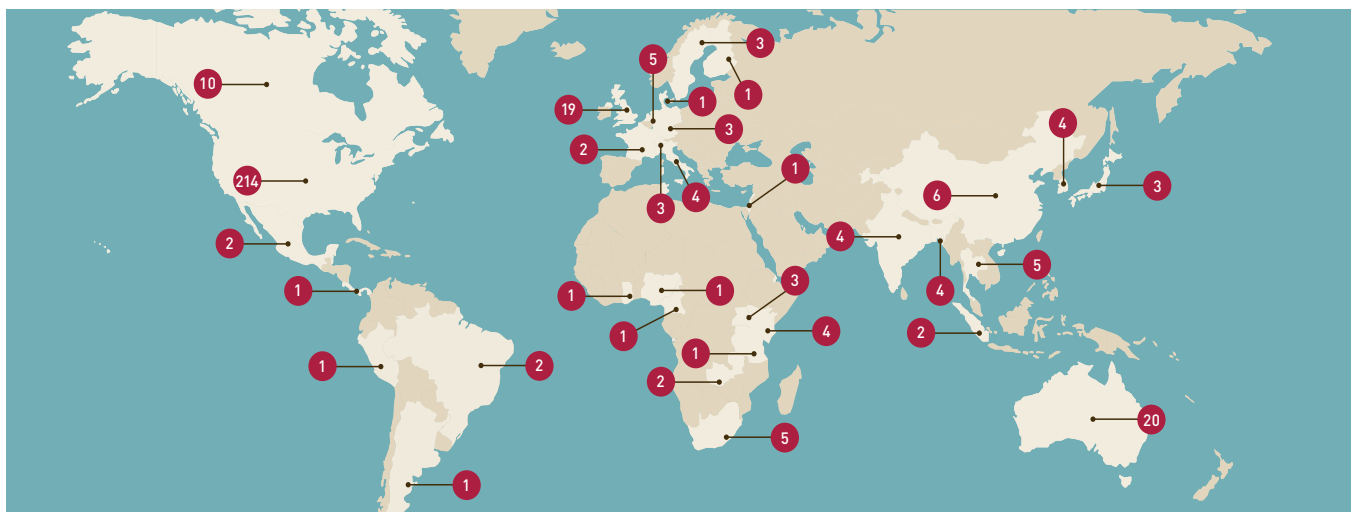
In 2005, GCGH awarded 45 grants totaling \$458 million (U.S.) to fund innovative research projects involving scientists from 33 countries. Over the last four to five years, these teams have worked to create broad platforms for further research as well as specific products to address the world's most pressing health problems.

In 2008, we expanded the initiative to include Grand Challenges Explorations (GCE). Topics for each round of GCE grants address GCGH program goals as well as global health priorities of the Bill & Melinda Gates Foundation.

GRAND CHALLENGES EXPLORATIONS

Grand Challenges Explorations uses a streamlined online grantmaking process. Applications are two pages and require no preliminary data. Proposals are championed by innovators who select grants based on the quality of the idea and its potential for impact rather than on the experience or affiliation of the applicant. Twice a year, multiple winners receive grants of \$100,000 each. Successful projects are eligible for additional funding of up to \$1 million.

GRAND CHALLENGES EXPLORATIONS GRANTS



To date we have awarded 340 Grand Challenges Explorations grants in 34 countries.

| | | | | | | | | |
|--------------|------------|-----------|----------|---------------|-------------|----------------|-------------------|-------------------|
| Argentina 1 | Cameroon 1 | Finland 1 | India 4 | Kenya 4 | Norway 1 | South Africa 5 | Tanzania 1 | United States 214 |
| Australia 20 | Canada 10 | France 2 | Israel 1 | Mexico 2 | Peru 1 | South Korea 4 | Thailand 5 | Zambia 2 |
| Bangladesh 4 | China 6 | Germany 3 | Italy 4 | Netherlands 5 | Panama 1 | Sweden 3 | Uganda 3 | |
| Brazil 2 | Denmark 1 | Ghana 1 | Japan 3 | Nigeria 1 | Singapore 2 | Switzerland 3 | United Kingdom 19 | |

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. A GCE project at the University of Tokyo is looking at a rice-based oral vaccine that induces both mucosal and systemic immunity.

Goal 2: Create new vaccines

Though vaccines exist for many of the most common diseases, the world still lacks effective vaccines for the biggest killers: malaria, tuberculosis (TB), and HIV/AIDS. One GCGH project at The Rockefeller University is investigating vaccines that stimulate the immune system's dendritic cells, which play an important role in fighting infectious diseases.

Goal 3: Control insect vectors

Several promising approaches exist for combating malaria and other insect-transmitted diseases. Imperial College,

London, is studying ways to use “greedy genes” to introduce favorable traits, such as sterility or the inability to transmit disease, to mosquito populations.

Goal 4: Improve nutrition

Creating nutrient-rich staple crops that can survive in harsh climates is the focus of several projects, including one at Queensland University of Technology to increase vitamin A, vitamin E, and iron in bananas, a staple food in many developing countries.

Goal 5: Limit drug resistance

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

treat fevers, reduce mortality, and limit unnecessary drug use.

Goal 6: Cure infection

Additional areas of focus include various strategies to fight the increasing drug resistance of TB and pursue therapies for latent infections. Supported by a GCGH grant, an international team of researchers from the United Kingdom, the United States, Singapore, South Korea, and Mexico is studying the fundamental biology of TB latency.

Goal 7: Measure health status

Numerous projects are investigating new approaches to 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 proposals (RFPs) to fill gaps in current approaches and support additional progress toward GCGH goals (one example is Grand Challenges Diagnostics, a new \$30 million grant opportunity announced in December 2009)
- continue to invest in a broad range of high-risk, transformational ideas through GCE
- invest in completing projects that can be further developed or 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 critical that we continue to align 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 and transform global health.

TO LEARN MORE

About the Global Health Program:
www.gatesfoundation.org/global-health

About Grand Challenges in Global Health:
www.grandchallenges.org

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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