

GATES SUPPORTS HEALTH EXPLORERS

RESEARCH FUNDING: Foundation awards novel approaches to health problems

Melinda and Bill Gates visit a young patient suffering from malaria in Mozambique.



BILL & MELINDA GATES FOUNDATION

THE BILL & MELINDA GATES Foundation has handed out the first grants under its Grand Challenges Explorations program. Launched in late 2007, the \$100 million, five-year program extends the organization's Grand Challenges in Global Health initiative started in 2003 by targeting smaller, earlier stage projects that explore novel ways to improve global health.

Phase I awards of \$100,000 each were given to 104 researchers in diverse disciplines spread across 22 countries. What they have in common is a focus on drug resistance or the prevention and cure of infectious diseases, such as HIV and tuberculosis. About two-thirds of those selected—from among 4,000 proposals—are university researchers; others are employed by nonprofit organizations, government agencies, and companies.

“The quality of the applications exceeded

all of our expectations,” Tadataka Yamada, president of global health at the Gates Foundation, said last week when announcing the awards. “It was so hard for reviewers to champion just one great idea that we selected almost twice as many projects for funding as we had initially planned.”

The Explorations initiative uses a streamlined process that limits applications to just two pages. To be selected, applicants need to show how their projects fall outside current scientific thinking and might offer significant advances, but they don't have to supply any preliminary data. Foundation and outside experts reviewed applications over about three months without knowing any scientist's credentials, geographic location, or affiliation.

Chemical and biomolecular engineering professor Yen Wah Tong of the National University of Singapore received a grant for his work on developing molecularly imprinted polymeric nanoparticles to capture viruses. “We are grateful that the foundation is providing us with this opportunity to pursue an unconventional approach, which other funding agencies may have been reluctant to support due to the uncertainty in getting the desired results,” he said after receiving the grant.

Projects that show promise in their first year may be eligible for another \$1 million or more in funding. The Gates Foundation accepted proposals for a second round of Phase I grants through Nov. 2. Topics for a third round will be announced in early 2009.—ANN THAYER

SEQUESTERING CO₂

POWER PLANTS: Pressure grows for greater haste in setting up trial projects at coal-fired facilities

At the Sleipner field in the North Sea, CO₂ from natural gas production gets injected deep under the seabed in one of the world's largest sequestration projects.



ØYUNID HAGEN/STATOILHYDRO

THE INTERNATIONAL Energy Agency (IEA) and the nonprofit think tank World Resources Institute (WRI) have recently issued proposals and pleas to speed up R&D projects that capture and sequester carbon dioxide emissions from coal-fired power plants. Coal-burning power plants generate more than 20% of the world's CO₂ and a growing percentage of its electricity, and they are increasingly becoming targets of efforts to cut global CO₂ emissions.

The two organizations released separate comprehensive reports that offer overviews and provide guidelines to spur development of technologies that capture CO₂ at a power plant, transport it, and inject it deep underground. The reports address project financing, regulation, environmental impacts, monitoring, liability, and public input.

IEA notes that globally only four full-scale carbon capture and sequestration (CCS) projects exist today, and none of them captures CO₂ from a coal-fired power plant. To combat climate change due to CO₂ emissions, the agency recommends that 20 large-scale CCS projects at coal-fired power plants be in planning by 2010 and in operation by 2020.

Similarly, Sarah Forbes, lead author of the guidelines from WRI, says, “We need at-scale, 250-MW or larger demonstration projects now.” WRI developed its guidelines through workshops and information from 88 stakeholders representing government, business, community groups, and academia. WRI is now drawing up similar CCS guidelines specific to China.

The two reports stress that delay will cause CCS to cost more and be harder to implement while allowing more coal-fired power plants to be built without CCS technologies.

Forbes and Nobuo Tanaka, executive director of IEA—which is a part of the Organization for Economic Cooperation & Development—also emphasize the need to create a global solution.

“The window of opportunity is closing for the global community to cost-effectively address climate change,” Tanaka says in a statement. “CCS technologies must play a key role, but they must be proven in the next decade.”

The reports are available at www.wri.org and www.iea.org.—JEFF JOHNSON