

Partnering on Innovative Health Research in Brazil

1 December 2011

BILL & MELINDA
GATES *foundation*

EVERY PERSON
DESERVES THE
CHANCE TO LIVE A
HEALTHY,
PRODUCTIVE LIFE.



Three Program Areas

25%

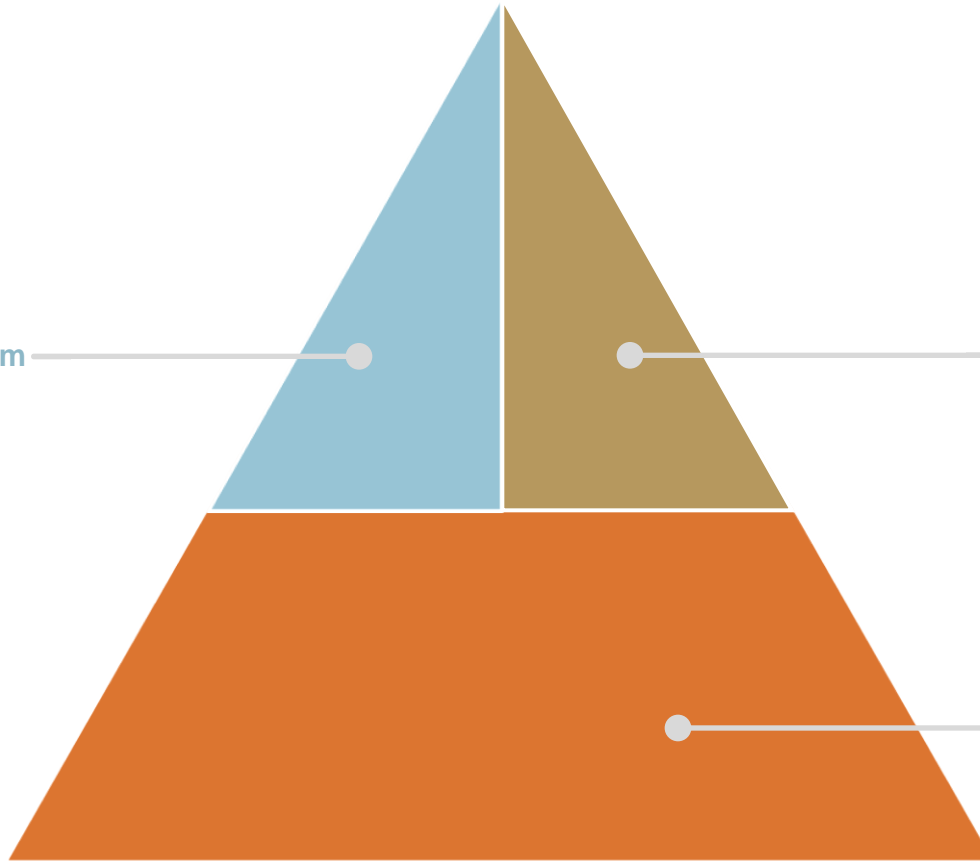
United States Program

25%

Global Development Program

50%

Global Health Program



The Gates Foundation's Approach to Global Health



Our Global Health program aims to harness advances in science and technology to save lives in developing countries.

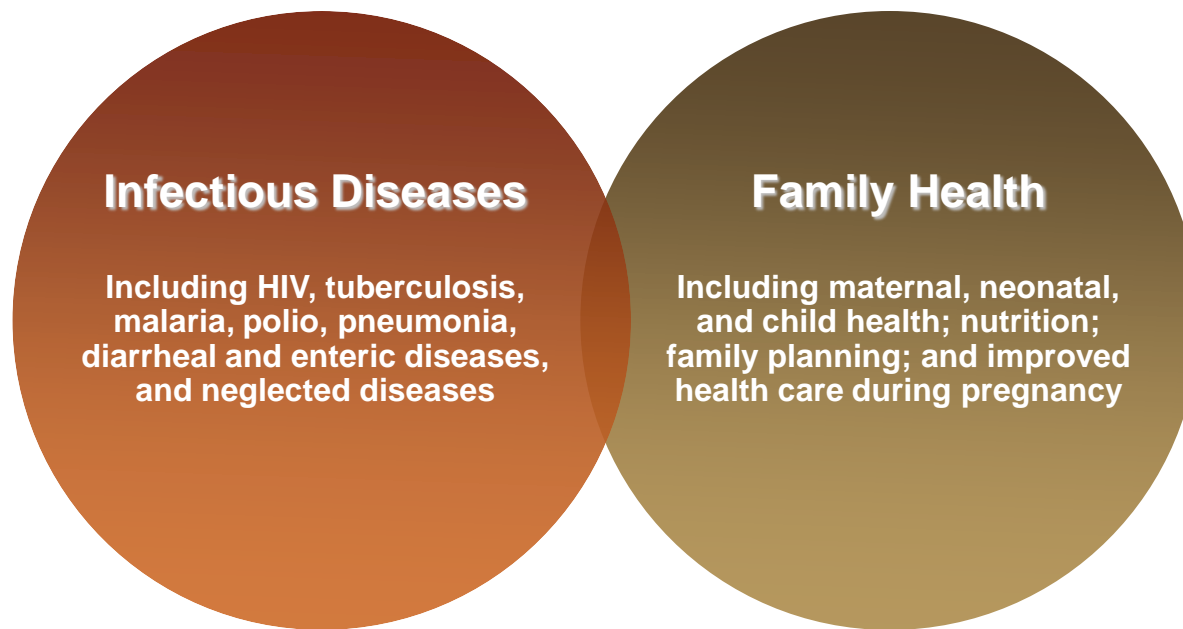


How We Make a Difference

- Focus** We focus on traditionally neglected areas that have the greatest potential for impact.
- Amplify** We amplify the effectiveness of proven tools through delivery and distribution.
- Innovate** Where tools do not exist, we invest in innovation and research.
- Target** We target a limited number of long-term priorities and solutions.
- Complement** We strive to complement, not replace, the roles of other players.

Priority Diseases and Conditions

Our Global Health Program continually hones its strategies to target a limited number of diseases and health conditions that account for a significant share of illness and death in developing countries.



Creating and delivering vaccines for infectious diseases is a key priority.

The Discovery Team

Aims to create and improve preventative, diagnostic and therapeutic interventions for infectious diseases and conditions affecting maternal, neonatal and child health and nutrition. We do this by:

Investing in high-risk innovation

Conducting RFPs in mature topics

Targeting investments in focus areas

Engaging new partners

The need to develop and apply solutions that can be deployed, accepted and sustained in the developing world drives all our investments.

Grand Challenges

- Grand Challenges is a funding mechanism the Gates Foundation – and a growing number of partners – use to catalyze innovative research in global health and development. All GC programs:
 - Work to define key global health and development challenges
 - Identify gaps in knowledge that are inhibiting progress in these areas
 - Publish public requests for proposals seeking new and innovative ideas to fill gaps
- Partners create communities of innovators, leverage available resources, and allow groups to share their unique areas of expertise
 - Partners pursue specific GC initiatives in collaboration and independently
- Current partners include: Grand Challenges Canada, BMGF, USAID, FNIH and the Government of Norway; also in conversation with Brazil and India about potential Grand Challenges partnerships

Grand Challenges Principles

1. Strategic and well-articulated grand challenges serve both to focus research efforts and to capture the imagination and engage the world's best researchers.

































2. Projects are selected based on public, transparent calls for proposals seeking the best ideas.

3. Funders, investigators, and other stakeholders actively collaborate to accelerate progress and integrate advances to ensure these advances serve those most in need.

4. Projects are selected not only for scientific excellence, but also for their likelihood to achieve the desired impact, and they are milestone-driven and actively managed to that end.

5. Projects and investigators make global access commitments to ensure the fruits of their research are available to those most in need.

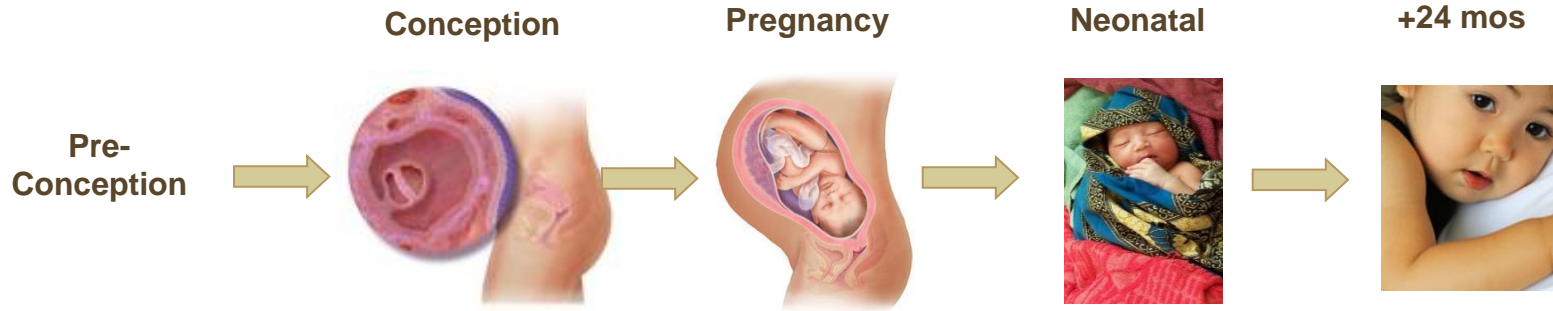
The Grand Challenges Pipeline

STARTED	PROGRAM	PARTNERS
2005	Grand Challenges in Global Health 	   
2008	Grand Challenges EXPLORATIONS	 IKP GRAND CHALLENGES EXPLORATIONS  
2010	 Non-Drug Control of Infectious Diseases Research Grand Challenges in Global Health	 
2011	Grand Challenges in Global Health <i>Diagnostics</i>	 
2011	Grand Challenges in Global Health <i>Biomarkers</i> Tuberculosis	  ?
2011	 Grand Challenges Canada Canadian Rising Stars in Global Health	
2011	SAVING LIVES AT BIRTH: A GRAND CHALLENGE FOR DEVELOPMENT	    
2012	 Grand Challenges Canada Saving Brains: Unlocking Potential for Development	
2012	Family Health Grand Challenges in Global Health	 
2012	Grand Challenges in Global Health <i>Biomarkers</i> Gut Health	
2012	 Implementation Research on Hypertension in LMICs	  AND OTHERS
2012	 Grand Challenges Canada Integrated Innovations for Global Mental Health	
2013	?	?

Grand Challenges in Healthy Birth, Growth and Development

- The first 1,000 days of life are a critical period with potential long-term irreversible health effects, likely encompassing the origins of non-communicable disease
- Need a broad range of scientific studies to integrate maternal and neonatal health and reveal the underlying mechanisms of disease and potential targets for practical interventions relevant to the developing world
- Need to bring new investigators, novel technologies and global attention to the field of maternal, neonatal and child health
- To do this, a number of partners are applying the Grand Challenges model to healthy birth, growth and development

Healthy Birth, Growth and Development



Grand Challenges | EXPLORATIONS

Family Health
Grand Challenges
in Global Health

SAVING
LIVES
AT BIRTH:

Saving Brains

2011/12 Requests for Proposals

Healthy Birth: Explore linkages among infection and nutrition to preterm birth and stillbirth

- Determine the role of aberrant microbiology in predisposition to preterm birth
- Determine the immunological responses to infection that underlie the mechanisms of preterm birth

Healthy Growth: Explore the gestational origins and biological consequences of intrauterine growth restriction, stunting and wasting

- Better define the pathophysiological changes associated with stunting and wasting
- Explore the role of hormonal regulation
- Explore the role of epigenetic changes as a link between nutrition and suboptimal growth

Grand Challenges Explorations is one of the Grand Challenges programs the Gates Foundation and partners use to invest in high-risk health and development research



ONE GREAT IDEA

TWO PAGES TO FILL OUT.
\$100,000 TO PROVE IT.

GREAT IDEAS CAN COME FROM ANYWHERE. ALL CAN APPLY.

Grand Challenges Explorations

Anyone can apply

- From any country and any discipline and at any level of experience
- From academia, government, non-profits or industry
- Review is “blind” and champion-based

Applying is easy

- Two page application
- No preliminary data required

Awards are frequent and rapid

- Two opportunities to apply each year
- Awards made in 4-6 months
- Phase 1 funding of US\$100,000 can lead to Phase 2 funding of up to US\$1 M

Past GCE topics have called on researchers to:

- *Protect crop plants from biotic stresses from field to market*
- *Design new approaches to optimize immunization systems*
- *Explore new solutions for global health priority areas*
- *Explore nutrition for healthy growth of infants and children*
- *Apply synthetic biology to global health challenges*

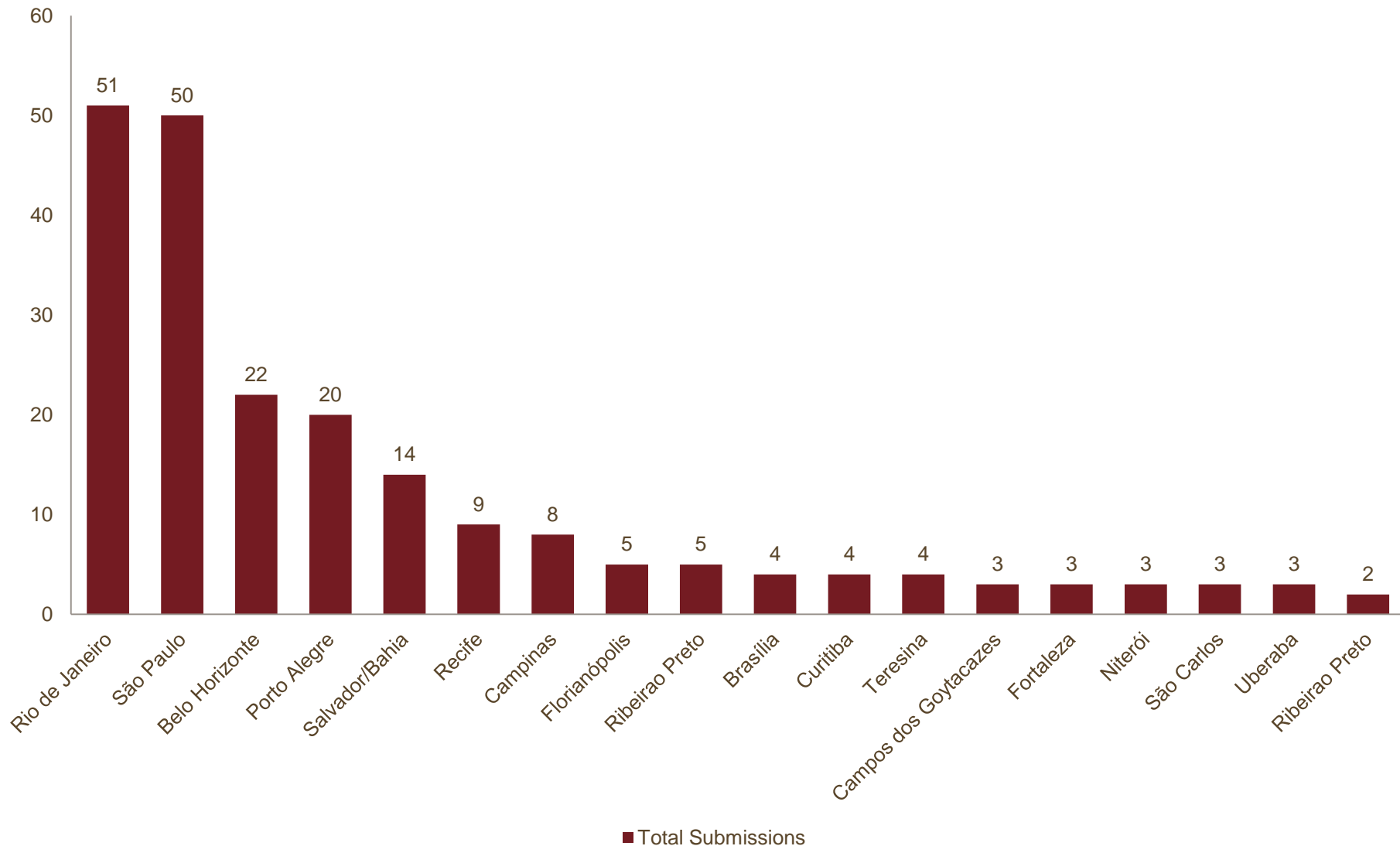
www.grandchallenges.org

GCE Brazil Stats

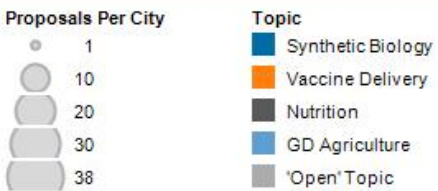
- 82 of 10,628 responsive proposals (Rounds 1 – 7) have been from Brazil (0.8%)
- 3 Phase I awards (Rounds 1 – 7) have gone to Brazil



Brazilian Submissions by City: Rounds 1 – 7



First Look: GCE Round 8 Stats



GCE Phase I Grants to Brazil: Rounds 1 – 6

Increasing Vaccination Efficacy with ACE Inhibitors

Julio Scharfstein at Universidade Federal do Rio de Janeiro

Idea: Interfere with innate homeostasis at the onset of vaccination by re-purposing ACE inhibitor (Captopril) to boost efficacy of vaccination. Use Captopril to convert DCs into terminally differentiated antigen-presenting cells that induce type-1

Large-scale MHC: Epitope Analysis for Vaccine Development

Gustavo Fioravanti Vieira at Universidade Federal do Rio Grande do Sul

Idea: Use bioinformatic approach to identify MHC and immune response features among viral peptides through the comparison of immunogenic epitopes already in the literature

"Lego" like Sanitation System: Pit Latrines Made of Biocompost

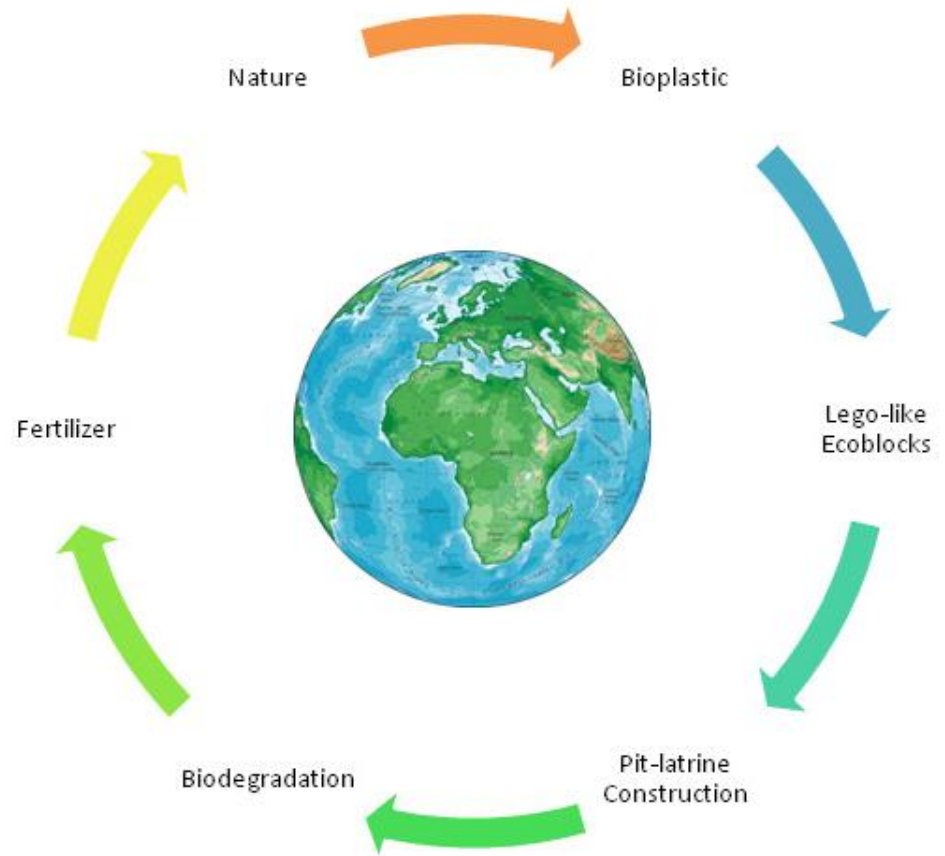
Antonio Avila at Universidade Federal de Minas Gerais

Idea: Develop a biodegradable “Eco-blocks” assemblage system for pit latrines to replace concrete slabs or conventional brick/cement materials

Pit Latrines Made of Biocomposites

Antonio Avila, Universidade Federal de Minas Gerais

Develop biocomposite building blocks for constructing decomposable pit latrines



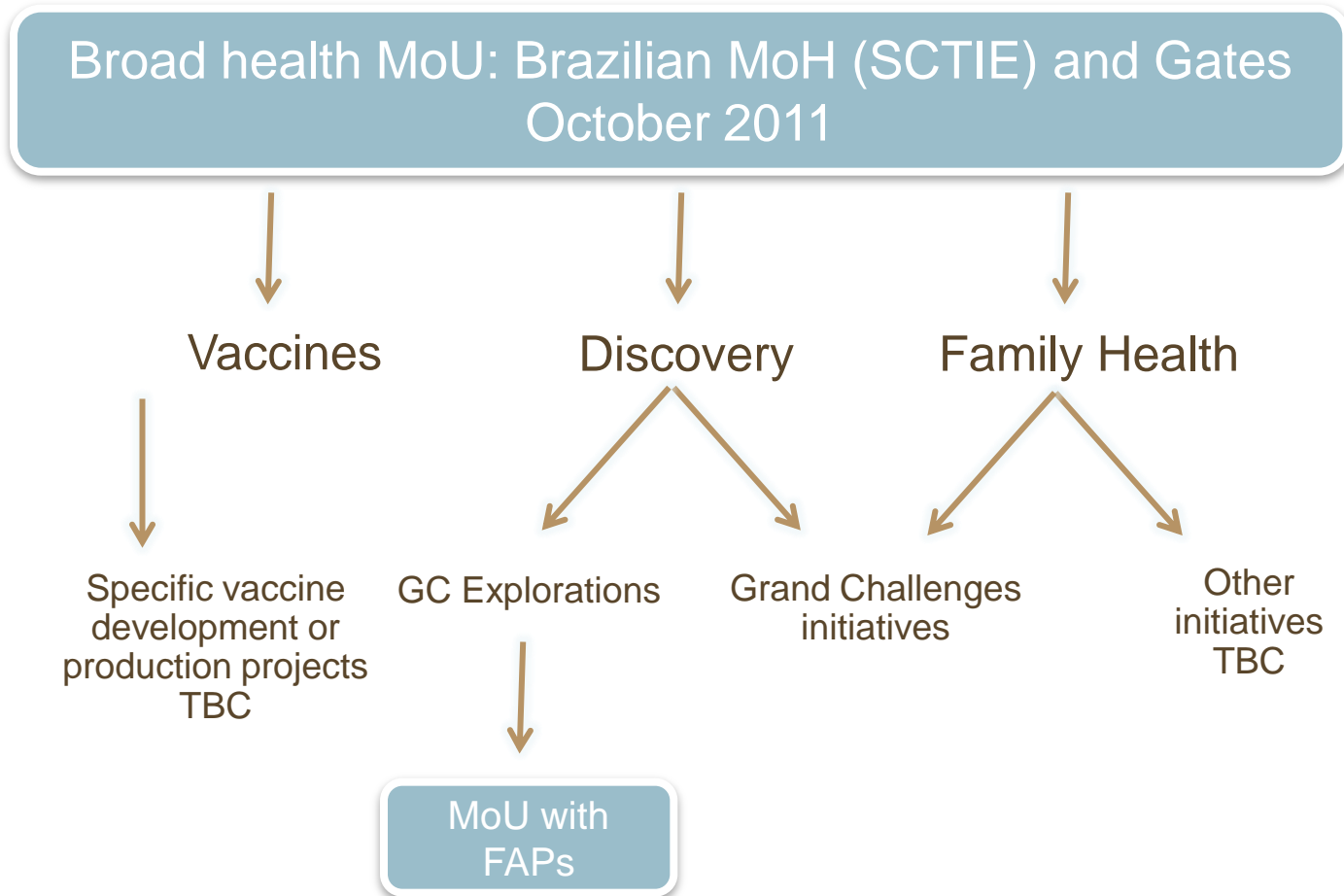
Partnership with Brazil

Brazil's leadership

Brazilian institutions and BMGF share a commitment to health equity, focusing on the needs of the poorest.

- **Growing capacity for innovation and established health research institutions**
 - Brazil's capacity for research in health has increased significantly with expanding opportunities for innovation
- **Brazil is a leader in promoting access to health technologies**
 - National Immunization Program and HIV/AIDS Program are models of success
 - The country is a champion for South-South collaboration in health
- **Brazil has made strong financial and political commitments to health R&D and manufacturing capacity for essential medicines and vaccines**
 - Fiocruz, Butantan supply majority of vaccines needed for PNI
- **Brazil is an influential leader internationally, supporting the global health agenda**
 - Bilateral partnerships on health and development (Latin America, Africa etc.)
 - In June, Brazil committed US \$20 million to GAVI

Partnering with Brazil on Health



Grand Challenges Brazil

The foundation is engaged in conversations with the MOH on a possible GC Brazil focused on:

Grand Challenges co-funding

- Joint funding of projects in Brazil as part of international GC initiatives
- Focus on global health and development priorities
- Proposed first cooperation around Family Health GC

Domestic GC initiatives

- GC initiatives pursued and funded by Brazilian sources
- Focus on national health priorities

Grand Challenges Explorations (GCE)

- Supplemental funding of Brazilian Phase I grantees in partnership with state-based FAPs network
- Co-funding with CNPq for Phase II grants

Next steps:

- Continue dialogue with MOH on Grand Challenges framework and Family Health partnership in first quarter of 2012
- Formalize partnership with FAPs and discuss operational aspects with participating partners
- Secure partnership with CNPq for Phase II grants

Proposed partnership with FAPs

1. Grants selected through regular GCE process
 - Brazilian submissions will be processed by the GCE program's standard review mechanism
 - Selected proposals will be funded by BMGF at US \$100,000
 - Direct grant agreement between grantee and BMGF
 - Results will be communicated to relevant FAPs in Brazil
2. FAP covering State in which successful applicant is based will supplement funding
 - FAPs will formalize their endorsement of BMGF selection process or conduct expedited diligence to formalize project selection
 - Respective FAP will provide additional funding equivalent to US\$50,000 or \$100,000 in Brazilian Reais
 - FAPs establish separate grant agreement directly with grantee
3. Successful projects can apply for Phase II grants
 - Coordination with CNPq and others during selection process (TBD)

What will it take for this initiative to work?

- **Dissemination** of GCE RFPs within Brazilian networks
 - What is the best way to increase the visibility of the program among Brazilian scientists?
 - How can we encourage potential applicants to submit adequate proposals?
- **Swift grant-making** process
 - How can we remain consistent with the quick review and award process that defines the program?
- Support Brazilian grantees to strengthen their **potential for Phase II** grants
 - How can we improve the chances of Brazilian grantees applying and receiving Phase II funding?
- What **additional mechanisms** can we consider to maximize impact of this program in Brazil?
 - What happens to high-quality applications that have not been selected through the Gates Foundation's process?
 - Can this model be applied to other Brazilian priorities?