Integrando a la comunidad investigadora en los estudios del nuevo genoma del coronavirus

Guilherme Oliveira

Instituto Tecnológico Vale
Private companies acted with first line support – 1st wave of actions

R$ 500 M ~ USD 100 M
- 15 cargo flights from China
- 5 million rapid test kits
- 15.8 million personal protection equipment

Hospitals
- 2 field hospitals (Parauapebas and Rio)
- 3 refurbished hospitals (Itabira, Belo Horizonte, Parauapebas)

Indigenous and quilombola
- 15 health care units
- Cleaning kits

R$ 1 B ~ USD 500 M support for suppliers

Volunteer actions + matching funds
Open challenge Covid-19

- Up to USD 200K support
- Connecting companies
- Access to Vale’s AI center
- 1,800 applicants
- 12 projects funded
- NGS based mass tests
- Face shield production platform (3)
- Air desinfection
- 70% EtOH production system (2)
- Vital signs capture system
- Remote psychological support system
- Sterilizing boxes
- Hemodynamics monitoring equipment
Research 2nd wave

- Research has a different timing
- Distress of ITV researchers – what could we do?
  - Genomics
  - Bioinformatics

- The genome of Sars-CoV2

• Brazil 974 genomes
• 479 complete + high quality
• 441 States of São Paulo and Rio

GSAID (28/08/20)

• Vale
  - Would take the actions beyond immediate support
  - Relevant to the community
  - Make us of a research asset - ITV

• Information that will be useful during and after the pandemic
• Open
• Cooperativa
The project

- R$ 2,4 M - ~500K USD
- 2 years

- 1,000 genomes
  - Impact of variations on drugs, vaccines and diagnostics
- Bioinformatics pipelines
- Training
- Network
- Open objectives
  - Steering committee decision

+ Public and Private research institutions
  - Simplified contract
  - Informal collaborator
  - Funds can be used by any partner
- Centralized data analysis (UFRN)
- Several sequencing labs (not too many)
Governance

PIs
Guilherme Oliveira (ITV)
Wim deGrave (Fiocruz)

Executive Committee
Guilherme Oliveira (ITV)
Wim deGrave (Fiocruz)
Felipe Naveca (Fiocruz)
Paola Resende (Fiocruz)
Others who sign simplified contract

Funds managed by FIOTEC
Technologies

- **Illumina short reads**
- **PacBio long reads**
- **Amplicon sequencing**
- **Metagenomics**
- **MinIon long reads**

**Portability and standardization**
(high quality genomes)

- **128 downloads**
Open data, open source, no IP

Public repositories

[Logos for GISAID, COVID-19 Data Portal, and NCBI]
Difficulties

- Bureaucracy
  - Additional Covid issues with digital signatures
- Reagents
  - Cost
  - Delivery time
- Unusual model
  - Open project, part of the deliverables are known
- Management
  - It will be challenging
  - We must deliver! Evidence that the model works
- For engagement with companies must have institutional support
  - Many large business are interested in making significant social contributions
Thank you
guilherme.oliveira@itv.org

Fiocruz Rio
Wim deGrave
Paola Resende
Fiocruz Manaus
Felipe Naveca
Fiocruz Recife
Gabriel Wallau
UFRN
Sandro de Souza
Selma Jerônimo
UFPE
Valdir Balbino
UFMG
Santuza Teixeira
Flávio Fonseca
UFMA
Hivana Dallagnol
UFPA
Ândrea Ribeiro

+72 researchers involved at the moment