



# DIAGNOSTIC PROGRAM

# DIAGNOSTIC OPPORTUNITIES

PROVIDING ADAPTED TECHNOLOGICAL INNOVATIVE SOLUTIONS  
TO FULLY ADDRESS DIAGNOSTIC NEEDS

BIOASTER programs undertake your most challenging projects through:

- Specialized research units joining their forces for multidisciplinary strategies
- Integrated data analysis
- Cost effective implementation

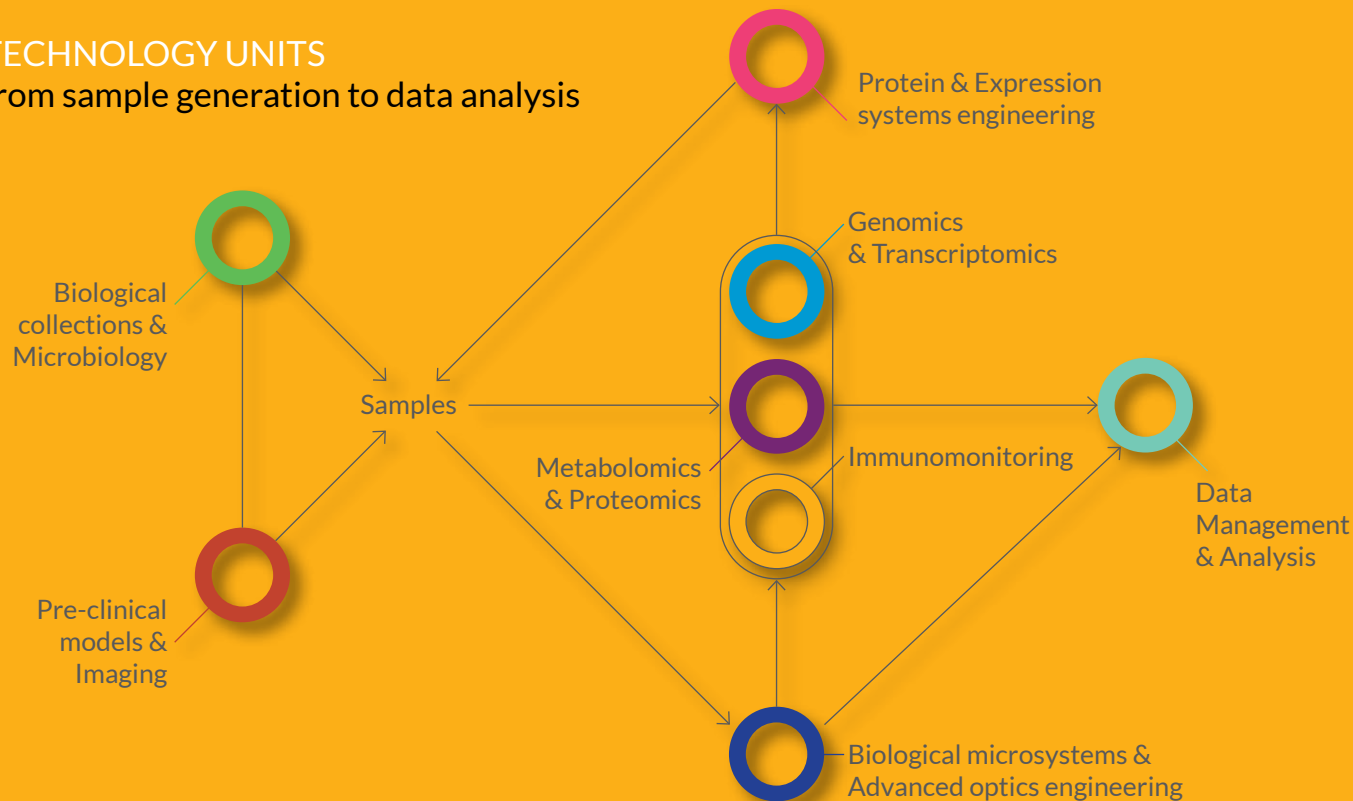
# COLLABORATIVE AREAS & INTERNAL INNOVATIONS



# TECHNOLOGICAL INNOVATIONS

THE DIAGNOSTIC PROGRAM COMBINES A BROAD RANGE OF EXPERTISE, INTEGRATED CUTTING EDGE TECHNOLOGIES AND IN-HOUSE INNOVATIONS....

TECHNOLOGY UNITS  
from sample generation to data analysis



... FOR A UNIQUE  
VALUE  
PROPOSITION



**COLLECT**  
Clinical  
samples



**DISCOVER**  
Biomarkers  
of medical  
added value



**DEVELOP**  
Devices for  
rapid diagnostic



**ANALYSE**  
Complex  
"omics" data

**COLLABORATIVE  
PROJECTS**  
with private &  
academic partners



**INDUSTRIAL  
APPLICATIONS**  
specific applications  
development



... ADAPTED TO INDUSTRIAL NEEDS



# COLLECT

## You need

- To get access to Key Opinion Leaders in microbiology and infectious diseases
- To setup a prospective clinical network for mono- or multicenter studies
- To gather clinical specimens associated to robust and curated clinical data
- To manage and monitor a clinical study

## We mobilize

- BIOASTER's network of clinicians in France and in Europe
- Clinical Research Associates (CRA) for clinical management and monitoring
- State of the art Infrastructure for storage and processing of precious clinical specimens
- Advanced data management tools : integration of eCRF, data/clinical specimens repository and complex OMICS/biomarker data

## + HIGHLIGHTS

- Access to key clinical partners
- Capacity to setup and to manage prospective clinical trials
- Use of up-to-date data management tools

# DISCOVER



## + HIGHLIGHTS

- Define clinical study design adapted to project's objectives
- Use of breakthrough "OMICS" technologies
- Apply advanced data analysis tools

## You need

- To identify innovative biomarkers of medical added value
- To validate high performance diagnostic signatures relevant to your technology
- To associate host-immune and pathogen biomarkers for improved diagnosis
- To explore new area such as microbiome-based biomarkers in diagnostics

## We mobilize

- Researchers with an industrial mindset in the fields of Genomics, Transcriptomics, Proteomics, Metabolomics and Immunomonitoring
- Breakthrough technologies perfectly adapted to biomarker discovery and validation
- Reliable and robust sample preparation methods for clinical samples
- Advanced biostatistical and bioinformatics analysis tools and expertise
- Validated Metagenomics workflow and analysis pipelines



# DEVELOP

## You need

- To develop robust and reliable sample preparation methods from different types of tissues
- To elaborate innovative diagnostic tools for rapid ID/AST
- To develop near-patient testing technologies
- To improve and clinically evaluate prototypes

## We mobilize

- Expertise in sample preparation developed through internal innovation and collaborations
- A dedicated team of experts in advanced imaging technologies for ultra-fast ID/AST in microbiology
- Skilled resources in the design of microfluidic solutions
- Integrated team of hardware/software developers
- Alternative technology detection solutions in immunoassay

## + HIGHLIGHTS

- Develop reliable and robust sample preparation methods
- Elaborate fast ID/AST and Point-Of-Care solutions
- Develop microfluidics-based testing



# ANALYSE



## + HIGHLIGHTS

- Integrate complex “OMICS” and clinical data
- Develop metagenomics analysis tools
- Use of advanced infrastructure & high power computing solutions

## You need

- To analyse complex biological data generated from « OMICS » experiments
- To perform integrated analysis from heterogeneous clinical and biological data
- To develop reliable pipelines of analysis and softwares for analysing, interpreting and visualizing metagenomic (shotgun/16S) results

## We mobilize

- Expertise in bioinformatics, biostatistics and metagenomics analysis
- Existing web based visualisation tools for decision making/support systems
- Advanced infrastructure & high power computing for Time-To-Results optimization

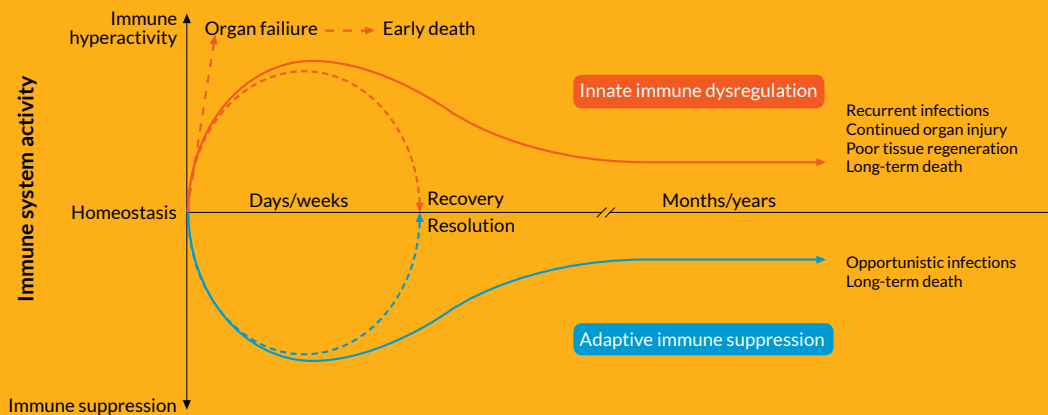


# COLLABORATIVE PROJECT

## REALISM

### REAnimation Low Immune Status Markers

- Collaborative project involving key IVD, pharma, academic and clinical partners
- Main objective of the collaboration is to determine the injury-induced immunosuppression status in Intensive Care Unit (ICU) patients and to provide innovative biomarkers and tools for new therapeutic approaches
- More than 370 patients from ICU have been recruited in a unique prospective longitudinal, single-center observational study



Adapted from Delano MJ, et al. JCI 2016



COMPANION DIAGNOSTICS



48 MONTHS



# COLLABORATIVE PROJECT

## EBODIAG

### EBOLA RAPID DIAGNOSTIC TEST

- Collaboration involving an international IVD player, non governmental organisations in Guinea (Africa), and high security BSL4 laboratory in Lyon
- Collaborative project aiming at developing a sensitive and specific immunochromatographic lateral flow assay for early diagnosis of Ebola infection in endemic countries
- Rapid Diagnostic test (RDT) evaluated with human infected samples



Rapid Diagnostic Test for Ebola Haemorrhagic Fever



FUJIFILM



POINT OF CARE TESTING FOR EMERGING DISEASES



27 MONTHS

# A UNIQUE MODEL



## INDUSTRIAL APPLICATIONS

BIOASTER, a partner for your projects  
from early stage to pre-industrial development

### We develop specific technologies, ready for industrialization

- Standardized and automated processes
- Appropriate methods for samples collection and storage (Iso 9001)
- Automated sample preparation
- Complex signature translation to commonly used detection tools
- Expression systems optimization, including genomic strain engineering
- Upstream and downstream production process optimization

### We handle and interpret complex data

- Integrated & expert data sciences
- Data management facilities ruled by tracking and control policies
- High data storage and cloud computing capacities
- Custom bioinformatic pipelines development
- Tailor-made visualization tools

### BIOASTER, Technology Research Institute, to better share innovation

- International scientific network & partners
- 80+ scientific experts, interconnected technology platforms, unique state of the art equipments
- Professional projects management and tools
- Opportunity of sharing costs and risks of your innovation projects
- Research and development collaborative projects or services
- A multidisciplinary team of experts dedicated to diagnostic projects

## BIOASTER PROGRAMS

### Diagnostic

Antimicrobials

Vaccines

Microbiota

[diagnostic@bioaster.org](mailto:diagnostic@bioaster.org)

**BIOASTER**  
MICROBIOLOGY TECHNOLOGY INSTITUTE

**LYON**  
Bâtiment BIOASTER  
40, avenue Tony Garnier  
69007 Lyon - France  
+33 (0)4 69 84 26 00

**PARIS**  
Bâtiment F. JACOB  
28, rue du Docteur Roux  
75015 Paris - France  
+33 (0)1 44 38 91 82

[bioaster.org](http://bioaster.org)

