

# APOLLO

**Personalized medicine in chronic cardiovascular, respiratory, renal diseases  
and organ transplantation**

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*on behalf of the APOLLO consortium*

5

YEARS PROJECT  
2020-2025

35

PARTNERS

19

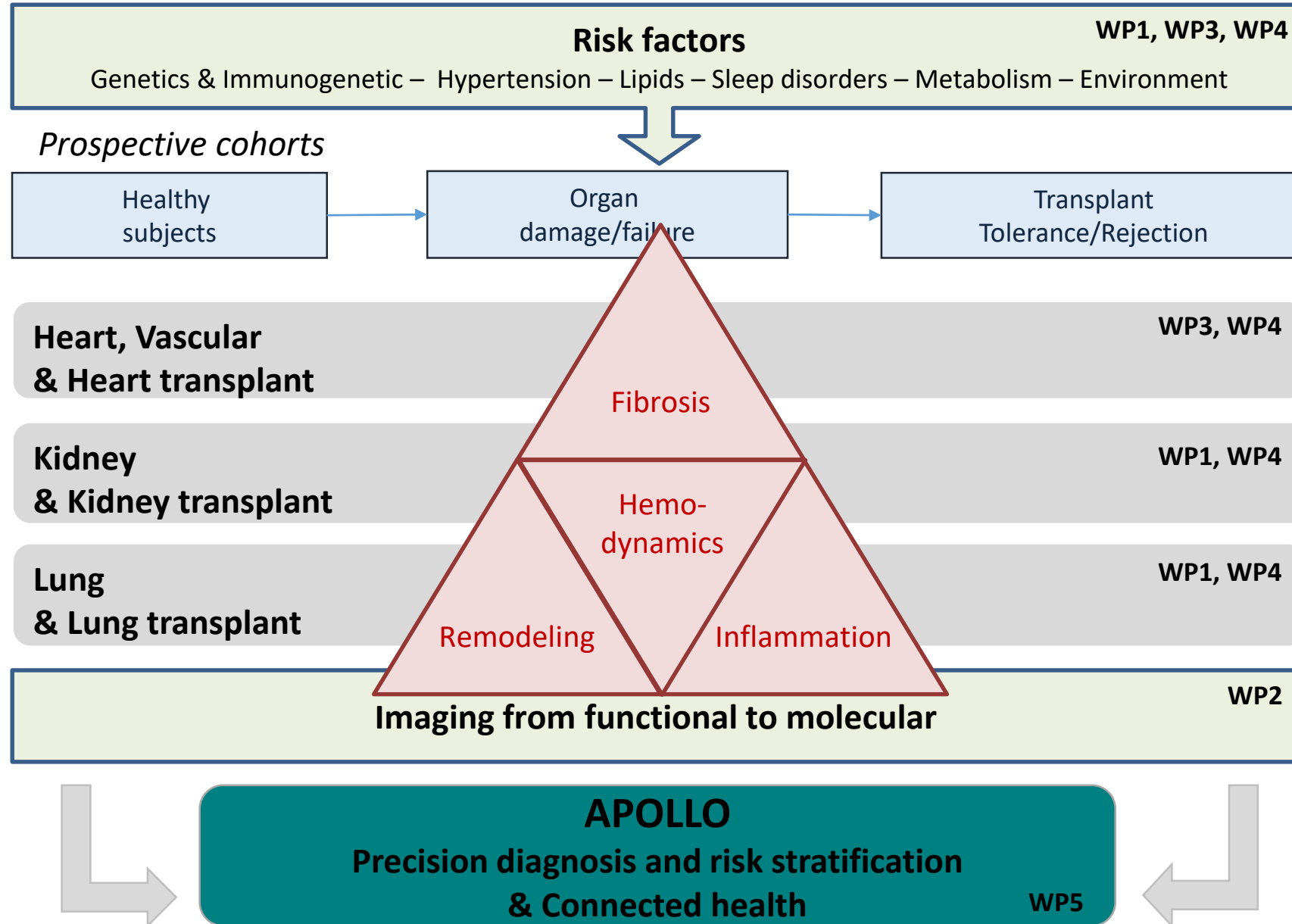
TECHNICAL  
PLATFORMS

180

PEOPLE INVOLVED

# APOLLO: Research strategy

Fibrosis: shared pathophysiologic pathways & potential therapeutic targets



# APOLLO global program organization

## INPUTS

Leading clinical centers  
Reference cohorts  
Dedicated research units (LABEX)  
Biobanking  
High technology platforms

### WP1: Fight Fibrosis

WP leader:  
B. Crestani

INSERM / AP-HP Nord  
Bichat

#### WP1: TASKS

- 1.1 Link between inflammation and Fibrosis
- 1.2 Genetic basis of extracellular matrix remodeling and Fibrosis
- 1.3 Biomarkers

### WP2: Imaging: from functional to molecular

WP leader:  
F. Rouzet

INSERM / AP-HP Nord  
Bichat / Saint-Louis

#### WP2: TASKS

- 2.1 Multi-physics imaging for early detection and staging of fibrosis and inflammation
- 2.2 Integrating multi-physics imaging with molecular and conventional diagnostic

### WP3: Atherosclerosis & Organ Fibrosis

WP leader:  
E. Vidal-Petiot

INSERM / AP-HP Nord  
Bichat / Bretonneau /  
Hôtel Dieu / Saint-Louis

#### WP3: TASKS

- 3.1 Prospective cohorts
- 3.2 Hypertension
- 3.3 Genetic factors for hypercholesterolemia
- 3.4 Oral health and atherothrombosis
- 3.5 Sleep disordered breathing
- 3.6 Clinical trials in tissue remodelling and fibrosis

### WP4: From inflammation to Fibrosis in organ transplants

WP leader:  
C. Lefaucheur

INSERM / AP-HP Nord  
Saint-Louis / Bichat /  
Beaujon / Fernand Widal

#### WP4: TASKS

- 4.1 Prospective cohorts
- 4.2 Linking alloimmunity, inflammation and Fibrosis in SOT
- 4.3 Biomarkers & Molecular signature from Rejection and Fibrosis
- 4.4 Integrative Risk stratification system
- 4.5 Clinical trials

### WP5: APOLLO Digital Hub: from research to patients

WP leader:  
P. Nataf & MP d'Ortho

INSERM / AP-HP Nord  
/ Université de Paris  
Fernand Widal / Bichat

#### WP5: TASKS

- 5.1 APOLLO data homing
- 5.2 Data development & Computation integrator
- 5.3 Connected health: APOLLO interface
- 5.4 To address patients' and caregivers' feedback

## OUTPUTS

- ✓ Innovation
- ✓ Dissemination
- ✓ Exploitation
- ✓ Education

APOLLO Governance and Management

Dissemination, IP Management and Exploitation

# APOLLO: Major impacts on scientific knowledge, patient care and industrial development

## Improve science

### Tissue inflammation & Fibrosis

- . Biomechanical signature
- . Molecular disease signature
- . Diagnostic/Imaging tools
- . Biomarkers: non-invasive, imaging, invasive
- . Therapeutic targets

## Improve health

- . Precision diagnostics
- . Risk reclassification
- . Reduce invasive procedure
- . Early detection of tissue remodelling fibrosis
- . Non-invasive monitoring of disease progression/therapy efficacy using quantitative imaging
- . Personalized treatment
- . Improve patient outcome

## Create value with final products

- . Monitoring and diagnostic kits for fibrosis in cardiovascular, pulmonary, renal & organ transplants
- . Devices for monitoring lung parenchyma mechanics
- . Clinical decision support systems
- . Foster Patients engagement to transform disease management: sensors virtual reality

## Educate & Disseminate

- APOLLO derived new standard of care
- APOLLO adopted surrogate end point
- APOLLO based clinical trials empowerment
- APOLLO medical training & research support
- APOLLO Masterclass digital medicine
- APOLLO workshops: imaging, immune biomarkers