Ενημερωτική Ημερίδα

Χρηματοδοτικές Ευκαιρίες για την Έρευνα και την Καινοτομία στον τομέα της Υγείας

Kostas Stamatopoulos

Institute of Applied Biosciences
CERTH, Thessaloniki, Greece
Horizon Europe – Why?
Horizon Europe

is the Commission proposal for a €100 billion research and innovation funding programme for seven years (2021-2027)

- to strengthen the EU's scientific and technological bases
- to boost Europe's innovation capacity, competitiveness and jobs
- to deliver on citizens' priorities and sustain our socio-economic model and values

€4.1 billion are proposed to be allocated for defence research, in a separate proposal for a European Defence Fund
added value through Horizon Europe
Horizon Europe – What?
Horizon Europe: evolution not revolution

Specific objectives of the Programme

- Support the creation and diffusion of high-quality knowledge
- Strengthen the impact of R&I in supporting EU policies
- Foster all forms of innovation and strengthen market deployment

Optimise the Programme’s delivery for impact in a strengthened ERA

**Pillar 1**
Open Science
- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

**Pillar 2**
Global Challenges and Industrial Competitiveness
- Clusters
  - Health
  - Inclusive and Secure Society
  - Digital and Industry
  - Climate, Energy and Mobility
  - Food and natural resources
- Joint Research Centre

**Pillar 3**
Open Innovation
- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Strengthening the European Research Area
- Sharing excellence
- Reforming and Enhancing the European R&I system
Pillar 2

Global Challenges & Industrial Competitiveness: boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals

<table>
<thead>
<tr>
<th>Clusters</th>
<th>Budget (€ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>€ 7.7</td>
</tr>
<tr>
<td>Inclusive and Secure Societies</td>
<td>€ 2.8</td>
</tr>
<tr>
<td>Digital and Industry</td>
<td>€ 15</td>
</tr>
<tr>
<td>Climate, Energy and Mobility</td>
<td>€ 15</td>
</tr>
<tr>
<td>Food and Natural Resources</td>
<td>€ 10</td>
</tr>
<tr>
<td>Joint Research Centre</td>
<td>€ 2.2</td>
</tr>
</tbody>
</table>

Joint Research Centre supports European policies with independent scientific evidence & technical support throughout the policy cycle.
Horizon Europe – What's new?
Lessons Learned
from Horizon 2020 Interim Evaluation

- Support breakthrough innovation
- Create more impact through mission-orientation and citizens' involvement
- Strengthen international cooperation
- Reinforce openness
- Rationalise the funding landscape

Key Novelties
in Horizon Europe

- European Innovation Council
- R&I Missions
- Extended association possibilities
- Open science policy
- New approach to Partnerships
Lessons Learned from Horizon 2020 Interim Evaluation

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Lamy report

Recommendation 5: Adopt a mission-oriented, impact-focused approach to address global challenges.

Action

Set research and innovation missions that address global challenges and mobilise researchers, innovators and other stakeholders to realise them.
R&I Missions

Connecting to citizens: Missions will relate EU's research and innovation to society and citizens' needs, with strong visibility and impact.

A mission will consist of a portfolio of actions intended to achieve a bold and inspirational as well as measurable goal within a set timeframe, with impact for science and technology, society and citizens that goes beyond individual actions.

Specific missions will be co-designed with Member States, stakeholders and citizens and programmed within the Global Challenges and Industrial Competitiveness pillar (drawing on inputs from other pillars).
Criteria for selecting R&I missions

*proposed by Prof Mazzucato*

Bold, inspirational, with wide societal relevance

A clear direction: targeted, measurable and time-bound

Ambitious but realistic R&I actions

Cross-disciplinary, cross-sectoral and cross-actor innovation

Multiple bottom-up solutions
Key factors for implementing R&I missions at EU level

Engagement of diverse national and regional stakeholders

Measurement of progress and impact by goals and milestones

A portfolio of instruments to foster bottom-up solutions

Flexibility, pro-active management and building in-house capabilities

Public engagement
  Public participation in the selection process
  Public inclusion in the implementation/citizens as active participants in missions
Mission areas

Adaptation to climate change including societal transformation

Cancer

Healthy oceans, seas, coastal and inland waters

Climate-neutral and smart cities

Soil health and food
Mission areas

Adaptation to climate change including societal transformation

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Climate-neutral and smart cities

Soil health and food
why cancer?
Noncommunicable diseases (NCDs) kill 40 million people each year, equivalent to 70% of all deaths globally.

Each year, 15 million people die from a NCD between the ages of 30 and 69 years.

Cardiovascular diseases, respiratory diseases, diabetes and cancer account for over 80% of all premature NCD deaths.

Detection, screening and treatment of NCDs, as well as palliative care, are key components of the response to NCDs.
GLOBAL ACTION PLAN
FOR THE PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES
2013-2020
TOGETHER
WE CAN PREVENT AND CONTROL
THE WORLD'S MOST COMMON DISEASES

The challenge is unprecedented -- a 25% reduction by 2025 in premature deaths from noncommunicable diseases.
R&I Missions: how?

A **mission board** established for each mission: around 15 members including end-users

Mission Boards have an **advisory role** in designing the mission and its implementation.

Missions will be implemented through a coherent **portfolio** of projects.

Missions will be implemented **through existing executive agencies** according to the content of the mission.
change begins at home

missions first and foremost have to tap into the rich stock and flow of high quality science and innovation already funded under different European programmes

Mazzucato report
change begins at home

a pioneering Greek version
Hellenic Precision Medicine Network in Oncology
update and future steps
wider ability of doctors to use patients' genetic and other molecular information as part of routine medical care

improved ability to predict which treatments will work best for specific patients

better understanding of the underlying mechanisms by which various diseases occur
aims and benefits

improved approaches to preventing, diagnosing, and treating a wide range of diseases

better integration of genomic medicine into patient care

a unique research resource
the potential for Precision Medicine
increased cancer care quality

a new comprehensive and integrated approach to wellness
metrics and timeline

5.4 M for 2018-2020

4 Units
  7 research centers
  4 universities

9 different disciplines
  (so far)

Phase A  M1-M6
Phase B  M7-M24
Phase A | Sep 2018 – Feb 2019

Standardizing procedures

Common pre-analytical pipelines

Analytical phase – NGS protocols

Post-analytical phase – data analysis and interpretation

a step-wise process
Phase A | Sep 2018 – Feb 2019

lab accreditation

ISO 15189
ISO 27001
GDPR compliance

interlaboratory quality control

between all Network units for all analytical phases

a step-wise process
actionable genes – on which criteria?
solid tumors
blood cancers
hereditary cancer syndromes

close collaboration with scientific societies
Hellenic Society of Medical Oncology
Hellenic Society of Haematology
Hellenic Society of Pathology

Phase A | Sep 2018 – Feb 2019
a step-wise process

Phase A | Sep 2018 – Feb 2019

Data management

electronic prescription and reporting system

interoperability with the national electronic prescription system and other initiatives of the Ministry of Health | registries

ethicolegal aspects
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>COMPANY/INSTITUTION</th>
<th>TIME</th>
<th>SCOPE</th>
<th>FUNDING</th>
<th>PROGRESS</th>
<th>MEDICAL FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLAND</td>
<td>Genomics England Ltd. (GeL)</td>
<td>2013-2018</td>
<td>100,000 genomes</td>
<td>£411 M</td>
<td>~34,000 genomes</td>
<td>Rare Diseases, Cancer</td>
</tr>
<tr>
<td>SCOTLAND</td>
<td>The Scottish Genomes Partnership (SGP)</td>
<td>2015-perpetual</td>
<td>~3,000 genomes</td>
<td>£23 M</td>
<td>~3,000 genomes</td>
<td>Rare Diseases, Cancer, Population Studies</td>
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<tr>
<td>THE NETHERLANDS</td>
<td>Hartwig Medical Foundation (HMF)</td>
<td>2015-2017</td>
<td>&gt;10,000 cancer patients</td>
<td>€30 M</td>
<td>~3,000 patients</td>
<td>Cancer</td>
</tr>
<tr>
<td>FRANCE</td>
<td>France Medécine Genomique (AVIESAN)</td>
<td>2015-2025</td>
<td>235,000 WGS/annum by 2020</td>
<td>€670 M (-2020)</td>
<td>Two platforms selected</td>
<td>Rare Diseases, Cancer</td>
</tr>
<tr>
<td>IRELAND</td>
<td>Genomics Medicine Ireland (GMI)</td>
<td>2016-perpetual</td>
<td>45,000 genomes</td>
<td>$40 M</td>
<td>Incorporated Series A</td>
<td>Population studies, Rare Diseases</td>
</tr>
<tr>
<td>SWITZERLAND</td>
<td>Swiss Personalized Health Network (SPHN)</td>
<td>2017-2020</td>
<td>Informatics structure</td>
<td>CHF 68</td>
<td>Funding calls</td>
<td>Rare Diseases, Cancer, Infectious Diseases, Rare Diseases, Cancer, Pharmacogenetics, Genetic Risk Susceptibility</td>
</tr>
<tr>
<td>FINLAND</td>
<td>Finland’s Genome Strategy (FGS)</td>
<td>2017-2020</td>
<td>National infrastructure</td>
<td>€17 M (Request for €50 M)</td>
<td>Planning phase</td>
<td>Rare Diseases, Cancer, Infectious Diseases, Rare Diseases, Cancer, Pharmacogenetics, Genetic Risk Susceptibility</td>
</tr>
<tr>
<td>NORWAY</td>
<td>The Norwegian Strategy for Personalised Medicine in Healthcare</td>
<td>2017-2021</td>
<td>&lt;13,000 WGS/annum</td>
<td>NOK 8 M (pre-analysis)</td>
<td>Planning phase</td>
<td>Rare Diseases, Cancer, Infectious Diseases, Rare Diseases, Cancer, Diabetes, Companion Dx, Rare Diseases, Cancer, Complex Disease</td>
</tr>
<tr>
<td>DENMARK</td>
<td>National Strategy for Personalized Medicine (Per Med)</td>
<td>2017-2020</td>
<td>~100,000 genomes</td>
<td>DKK 5 M (pre-analysis)</td>
<td>Initiated</td>
<td>Rare Diseases, Cancer, Complex Disease</td>
</tr>
<tr>
<td>SWEDEN</td>
<td>Genomic Medicine Sweden</td>
<td>2017-2023</td>
<td>~25,000 genomes/annum</td>
<td>SEK 4 M (pre-analysis)</td>
<td>Planning phase</td>
<td>Complex Disease, Microbiome</td>
</tr>
</tbody>
</table>

Cyprus, Serbia, Slovenia, Hungary, Czech Republic
next steps and challenges
Phase B
state-of-the-art
NGS-based
diagnosis
translational
research
challenges

evolving technologies and needs
 targeted panels | whole exome seq | whole genome seq

constantly changing knowledge base concerning variant significance

reimbursement and regulatory issues
 actionability - accessibility

ethics and legal aspects
challenges

promoting genomic literacy
  patients | providers | decision makers

tackling disparities - making patient’s voice heard
  include patient advocates in strategic planning

striving for equity
complementary perspectives

- bioanalysis
- analysis of large scale data
- horizontal and EU infrastructures
- links with the NHS
- links with the industry
- ethics and legal aspects