Finanziato dall'Unione europea
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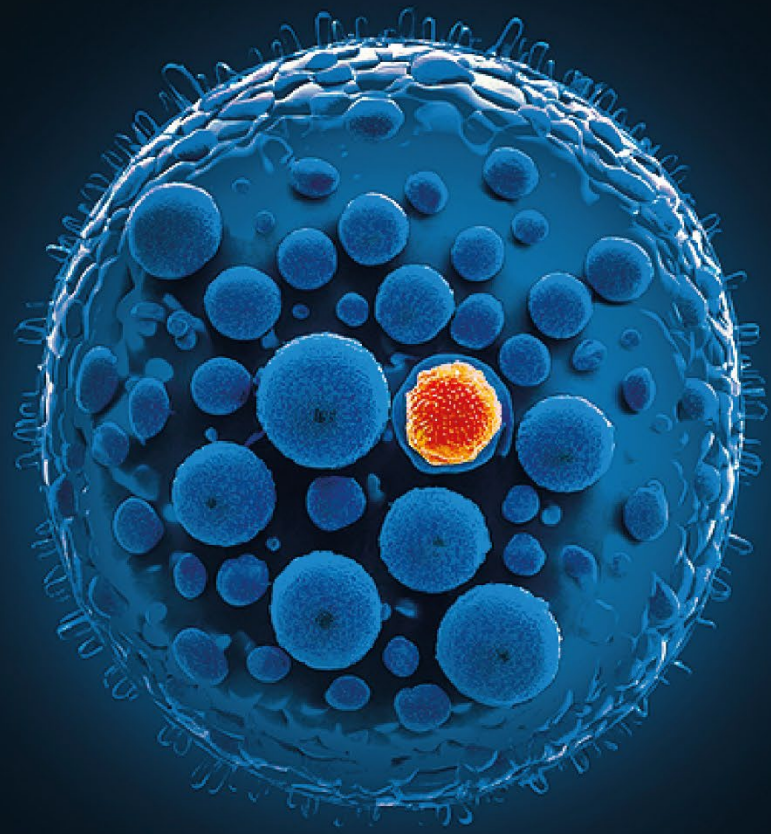
Ministero dell'Università e della Ricerca

Italiadomani
PIANO NAZIONALE DI RIPRESA E RESILIENZA

HEAL ITALIA



FORUM NAZIONALE SULLA MEDICINA DI PRECISIONE

Il Modello HEAL ITALIA e il contributo della Ricerca al Sistema Sanitario del Futuro

PALERMO
13 · 14 · 15
GIUGNO 2024

SPOKE 2
Intelligent Health

- **SPOKE PRESENTATION**

- Number of researchers involved : 48 (6 RTD-A and 3 PhDs)
- Spoke 2 – Leade

- Spoke 2 – Affiliates

SPOKE 2
Intelligent Health

- **SPOKE PRESENTATION**
- Advisory board

Prof. Riccardo Poli
University of Essex, UK

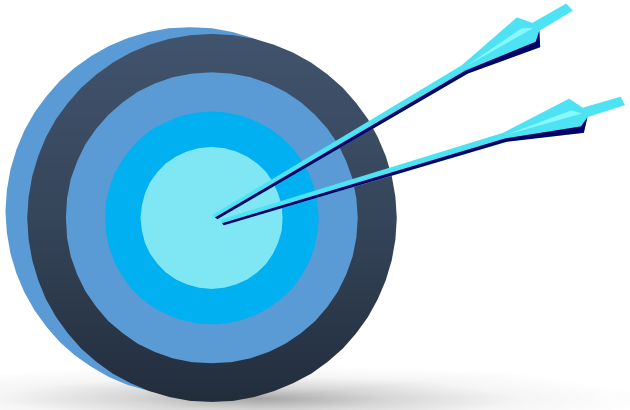
Evolutionary algorithms, biomedical engineering, neural networks and image/signal processing

Prof. Pietro Liò
University of Cambridge, UK

Artificial intelligence and computational biology

SPOKE 2
Intelligent Health

- **SPOKE PURPOSE**



Mission

Data management and development of advanced methods, algorithms and machine learning approaches that integrate health **big data**

SPOKE 2
Intelligent Health

SPOKE PURPOSE

- Establish **collaborative data and analytics platform models** – GDPR compliant
- Develop **innovative computational models and multipurpose AI frameworks** that integrate multiscale data for Precision Medicine
- Develop and apply new artificial intelligence methodologies in real clinical contexts to enable **ready-to-use Precision Medicine**

SPOKE 2
Intelligent Health

- **WHERE WE ARE**

- Platforms:
  - AlmaHealthDB – UNIBO
  - Clinical Data Repository (CDR) – Engineering
  - Network swarm learning (UNIBO-UNIVR-UNITV e UNIBO-AlmaHealthDB)
- Development of digital twins, methodologies and AI applications (23 posters in the evening session)
- Open science: open data (UK BIOBANK) & open methods
- Launch of cascade tender projects and integration with Spoke 2 activities :
  - Swarm learning
  - Dati medici sintetici
  - AI in chirurgia robotica di precisione

SPOKE 2
Intelligent Health

- **WHERE WE ARE GOING**

- Standardization of data management and procedures (Open Science)
- Platform interoperability
- Integration of algorithms into platforms
- Strengthening interactions with spokes 1, 4, 6 and 7
- Dedicated training (AI for Medicine, Open Science for Precision Medicine, etc.)
- Proposal for ad hoc sessions in national and international conferences

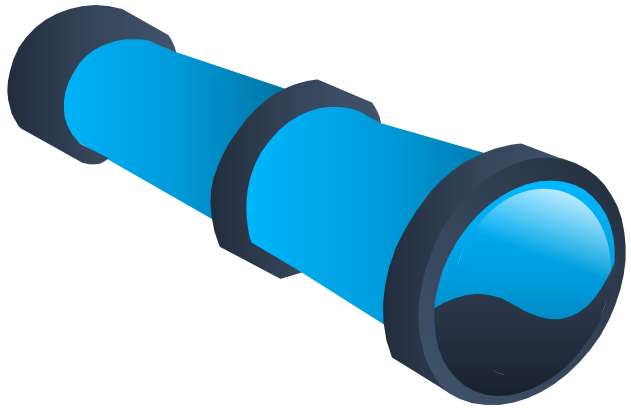
SPOKE 2
Intelligent Health

- **THE CHALLENGE**

- Increase the culture of multi-disciplinarity, Open Science, scalability of computational models

SPOKE 2
Intelligent Health

- **FORECASTS AFTER THE CLOSURE OF THE PROJECT**



Vision

Improve public health by equipping researchers and healthcare providers with adequate infrastructure to **systematically store and analyze health big data**

SPOKE 2
Intelligent Health

- **FORECASTS AFTER THE CLOSURE OF THE PROJECT**
- Creation of an ecosystem (researchers – algorithms – platforms – procedures)
- Synergy (Universities, IRCCS, Competence Centres, ISS, companies) also with BaC bodies

HEAL ITALIA
FOUNDATION

Università
degli Studi
di Palermo

TLS
TOSCANA LIFE SCIENCES

ENGINEERING
THE DIGITAL TRANSFORMATION COMPANY

bi-rex
Big Data Innovation & Research Excellence

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Università
di Catania

SISTEMA SANITARIO REGIONALE
IRCCS
ISTITUTI FISIOTERAPICI
OSPITALIERI

IN SUPREMÆ DIGNITATIS
1343

ISTITUTO SUPERIORE DI SANITÀ

SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Ospedaliero - Universitaria di Bologna
IRCCS Istituto di Ricovero e Cura a Carattere Scientifico

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AVIANO

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FARMACOLOGICHE
MARIO NEGRI · IRCCS

UNIVERSITÀ DEGLI STUDI DI MILANO
BICOCCA