Sano
Centre for Computational Personalised Medicine – International Research Foundation
The Challenge

Complexity

• Ageing ⇒ Co-morbidities
• Specialists’ Capacity
• Population-specific
• Imprecise Diagnosis
• Suboptimal Treatment
• Fragmented Care

The Solution

In Silico Medicine

• Complexity by composition
• Unlimited Capacity
• Subject-specific
• Precise Diagnosis
• Ranked Treatments
• Integrated Care
Sano addresses the challenges identified in the Poland *Country Health Profile* and has conducted extensive consultation with medical professionals.

- CFP: Poland lags behind many EU averages in healthcare
- Our digital technologies offer disruptive improvement
- Sano addresses Polish issues... *and* boosts EU leadership in *in silico* technology
- 50+ Letters of Interest from medical community
Main objectives of Sano

• Strong advancement of models, algorithms, and technologies involved in personalised medicine, including design of holistic, replicable, generic framework for simulation-based Decision Support Systems creation

• Development of new computation-based solutions for diagnostics and therapy in daily healthcare

• Systematic involvement of regional biomed businesses, specialising in technologies and services for personalised medicine, in high-profile research projects and clinical adoption of their outcome

• Education initiatives to train knowledge workers with the skills in data analytics, simulation, and HPC/Big Data, to respond to the growing demand for skilled workforce in bio-engineering and medical devices
Collaboration: Modellers + Healthcare Professionals → identify in silico opportunities

Innovation: New in silico solutions for diagnostics and therapy in daily healthcare

State-of-the-art: Advancement of algorithms, models and technologies

Exploitation: Regional biomed businesses

Education: knowledge transfer in health data analytics, modelling, HPC

Foster: young Entrepreneurs → technical/commercial/financial skills
**Expected impacts**

- Replace invasive diagnostics
- Replace indirect prognostics
- Personalise therapies
- Manage multimorbidity
- Optimise complex pathways

**Improve efficacy**
- Reduce secondary care costs

**New Polish high-tech start-ups**

- Reducing impact of ageing
- Externalise management

- Revitalise medical industry
- Target rare/neglected disease

- Revise, Refine, and Replace Animal Experimentation

**More ethical research**

- Reduce innovation costs
- MedTech Pharma

- Improve efficacy

**SHORT-TERM**

- Reduce primary care costs
- Improve quality of life
- Empower participation
- Improve access to care

- Low-cost MedTech industry
- Consumer ISM market

**LONG-TERM**

- Self-manage chronicity
- Refine rural telemedicine
- Personalise prevention

- Improve access to care
- Low-cost MedTech industry
- Consumer ISM market
The value chain: from research to healthcare practice

Sano has an effective mix of healthcare expertise throughout the value chain

Health Science: Research projects
- Research proposals
- Therapeutic areas
- Universities

SMEs and Start-ups: Innovations
- SMEs: Digital Health in Poland
- Health clusters from the EU

MedTech & Pharma: Access to market
- Industrial corporations
- EU-Industry Partnership
- EFPIA - IMI

Healthcare: Access to patients
- Regional Hospitals including the most prestigious in Poland, STH in UK

Business Development & Regulatory
- Technology Park
- Venture Capital
- Public body (Regional Medical Info System)
- Industrial Alliance (Avicenna)
Sano has formal structures for continuous engagement with clinical stakeholders

- Leveraging wide consultation during the planning stage:
  - People, institutions, projects, conferences
  - Focus on clinical healthcare requirements
- Advisory committees: Scientific, Clinical, Industrial
  - Securing tactical commitment and collaboration
- Strategic partnerships with research hospitals:
  - University Hospital in Krakow
  - Co-location of Sano and Medical Simulation Centre
  - Sheffield Teaching Hospital
  - Heart Prosthesis Institute: co-development of robots

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Quantified</th>
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<tbody>
<tr>
<td>Healthcare Meetings</td>
<td>65 meetings</td>
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<tr>
<td>Letters of Interest</td>
<td>50 Letters</td>
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<tr>
<td>Clinical Committee</td>
<td>9/15 recruited 8 Polish (includes 7 Malopolska)</td>
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<td>Industrial Advisory Committee</td>
<td>11 members secured, target 20 organisations</td>
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Comprised of eminent scientist, the **International Scientific Committee** ensures that the Centre’s operations and research directions are reviewed from a broad spectrum of scientific viewpoints.

The operating activities of the Centre are managed by its **Management Board** under the supervision of its **President** who is appointed by the **Committee**.

The **Foundation Council** is the supervising body of the Centre. Its duties include adopting the Code of Ethics and the Principles of Good Science Practices, and supervising compliance therewith, approving annual reports and financial statements and appointing consulting bodies of the Foundation where needed.
Staff structure: research, development, support and administration

Staff balance, mix of high value jobs: R&D, programming, complex support, & IT

- **Research 58%**
  - Scientific Affairs Director
  - Research Team Leaders
  - Visiting Professors
  - Postdocs
  - PhD Students

- **Development 22%**
  - Business Development
  - Scientific Programming
  - Portfolio Manager
  - Marketing/Fundraising
  - Communications
  - Project Management

- **Support 10%**
  - Project/Portfolio Manager
  - IT Experts (software/hardware)
  - Technical Manager
  - Data Manager

- **Administration 10%**
  - Secretariat
  - Financial services (accounting, payroll)
  - Human Resources
  - Legal Office

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Sano employees

2026

- **Research** 58%
- **Development** 22%
- **Support** 10%
- **Admin** 10%

Overlapping roles, e.g. Scientific Programming Manager:

- 25% research
- 55% development
- 10% support
- 10% administration

* Includes stipends
Talent acquisition strategy

International committees and management: excellence in talent acquisition

Int. Scientific Committee: Chaired by Marco Viceconti
15 members (UK, IT, DE, NL, US, PL)
Selects top candidates

Foundation Council
5 reps of Teaming partners (UK, DE, PL)
Concludes employment contracts

Search Committee: 6 members (UK, DE, PL)
Access to quality candidates

Centre’s Management: Led by Scientific Affairs Director Marian Bubak

Top international candidates for the Directorship, and Laboratory Leaders

Access to local and international Candidates for Middle and Junior Researcher positions

Key Performance Indicators

KPI-1 Research groups (5)
KPI-4 R&D personnel (55)
KPI-5 New scientists (33)
KPI-6 Foreign scientists (15)
KPI-7 Publications (60)
PhD Programme

• University of Sheffield
  • Staff will (co-)supervise PhD students
  • Typical duration 3.5 years
  • Students will be located mostly at the Centre
  • Comprehensive training and research exchange programme

• University of Amsterdam
  • External PhD students at UvA
  • Computational Science

• AGH University of Science and Tech.
  • 4-year PhD program in Computer Science, Biomedical Engineering or Biophysics
  • Option for “industrial PhD” programme with a collaborating company
  • Option for “External” PhD degree

• Collegium Medicum UJ
  • Medicine and other health-related fields

Special training and Research Exchange Programme
  ▪ At least 6 months abroad
  ▪ USFD advanced training, multi-disciplinary, computational medicine
  ▪ 2 trainings, each of at least 30 hours per student

PhD programme in numbers
  ▪ Polish medical researchers involved in PhD co-supervision: 15 (from Clinical Advisory Committee)
  ▪ Total number of PhD students: 30 (18 on salary, 12 stipends)
During the **formative phase** the Centre will establish its principal administrative bodies and seek candidates to fill key staff positions.

The formative phase also entails a search for the Centre director and research team leaders.

Up until the Centre has attained **organizational maturity**, the T2 Project Board (PB) will be led by NCBR. The Centre will subsequently assume the leadership, for the Project and the PB, and NCBR will leave the consortium, to prevent potential conflicts of interests.

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**Activity timeline**

- **Launch**
  - Centre acquires legal status
  - Hiring commences
  - ISC selects Director candidate
  - Centre formally joins the project

- **Formative phase**
  - Research agenda approved
  - Research leaders recruited
  - Departure of NCBR from consortium

- **M6**
  - IRC project completes; outcomes evaluated
  - Director’s initial term expires

- **Maturity**
  - Initial performance and portfolio review completed
  - Clinical and industrial engagement assessed
  - Annual report of the Centre

- **M42**
  - Statutory evaluation by Ministry of Science

- **M60**
  - Self-sustainability
Sano Teaming Phase 2 project management structure

- **Project Board**
- **Quality Assurance Team**

**Project Coordinator (NCBR/Centre), WP1: Project Management**

- **WP2: Establishment and Operation of the Centre**
- **WP3: Infrastructure and Support**
- **WP4: Human Talent Management**
- **WP5: Dissemination, Communication, Clinical and Industry Engagement**
- **WP6: Products, Services and Business Development**
- **WP7: Building Sustainable Research Capacity and Portfolio**
- **WP8: Ethics Requirements**

**Reporting and conflict resolution**

**Deliverable circulation and delivery**

**Research Executive Agency (REA) of the European Commission (EC)**
More at

sano.science

and

http://dice.cyfronet.pl/projects

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• Polish Ministry of Science and Higher Education.