<u>**Research strategy in**</u>
<u>**University of Medicine and Pharmacy "Iuliu Hatieganu" (UMFIH)**</u>
<u>**Plan 2020-2024**</u>

## 1. Vision

**Promoting the culture of excellence and innovation** in UMFIH will be achieved through high quality, interdisciplinary and strategic scientific research for the prosperity and well-being of the community.

## 2. Mission

Creating the next generation of health professionals through **education and research excellence** underpins the UMFIH mission for 2020 - 2024.

**Coordinated research with an integrative and internationalising vision, sustainable by design**, must be the priority of our work as an advanced research university. Through it we maintain and increase our national and international recognition, prestige and competitiveness in a context of increasing global importance.

## 3. Purpose, objectives and actions

### 3.1. Purpose

Strengthen the quality of education and research in the university through global, national and local collaboration and engagement so that we maintain our position as a leading research university.

### 3.2. Objectives

- Establish **strategic research directions for** UMFIH, focusing activity on relevant topics, where there are the prerequisites for significant results, expertise and available facilities, so as to optimise the use of resources in order to obtain results with practical medical applicability, innovation and approval or patenting of new products.
- **Creating credible, reproducible, open, data accessible research** (Horizon Europe 2021 - 2027[1], "Goals of Research and Innovation Policy in EU - Open innovation/Open science/Open to the World") and pursuing growth in Shanghai

---

[1] The Smart Specialisation Strategy, in line with the National and Regional Strategy for Competitiveness 2021-2027 in the health sector - education and research, is based on the Horizon Europe Strategic Plan 2021-2027 and includes, among others, the following objectives: Healthy living in a rapidly changing society, living and working in an environment that promotes healthy living, combating diseases and reducing their burden, ensuring access to innovative, sustainable, and high-quality healthcare, unlocking the full potential of new tools, technologies and digital solutions for a healthy society, maintaining an innovative, sustainable and globally competitive health industry.

Ranking, access to European funds at regional level dedicated to smart specialisation (North West Development Agency).

- **To build on the tradition and the human and material scientific potential**, and to ensure a competitive advantage in scientific research, nationally and internationally.
- Stimulate competition by **allocating additional resources to top performers.**
- **Promote excellence through internationalization**, to become an attractive centre for researchers from home and abroad.
- Inclusion of our university in the top 1000 universities in scientific research.
- Strategies **to encourage increased university visibility**.
- **Interconnecting excellence in education with excellence in research**, transfer activities between research and teaching.

### 3.3. Actions

- **To orient research according to the current state of international knowledge and the funded areas of interest** - basic research, clinical and applied research, in order to modernise the educational process, to obtain new protocols and products through technology transfer, for new treatments, personalised medicine.
- **Establishing strategic areas of inter- and transdisciplinary research**, by proposing innovative research directions and themes, with real development potential and which can produce significant scientific results with national and international impact, patentable.
- Adoption of a Regulation on Research and Good Research Practice in the University, with a requirement for scientific performance. **Raising the promotion criteria for scientific research to European standards** and providing incentives for those who meet them.
- **Addressing issues** of **European priority** relating to serious health problems as well as emerging threats, such as the increase in the number of people affected by chronic diseases: Alzheimer's disease, diabetes, cardiovascular disease and infectious diseases with new or antibiotic-resistant pathogens, and the context of ageing.
- Identify within the research themes new ways to prevent disease, better diagnosis and improved effectiveness of therapies, and the adoption of new models of care and new technologies to promote health and well-being (digital future, health and well-being, personalised medicine, targeting chronic non-communicable diseases as a priority, quality of life of patients and population, e-health, telemedicine, internet of things, cosmetics and dietary supplements, innovation of goods and services in oncology, innovation in balneology through new services and goods, implantology and transplantology, nutrition/dietetics, new pharmaceuticals - hybrid medicines, biosimilars, phytochemicals, creative and digital technologies, artificial intelligence). The 17 Sustainable Development Goals (SDGs) of the National Strategy for 2030 overlap to a large extent with **increasing the capacity to attract funding for research in areas for health**.

- **Ensuring continuity and strengthening the priority areas** set out in the strategies:
    - o Translational medicine;
    - o Drug discovery and drug delivery;
    - o Nanotechnologies and nanomaterials;
    - o Genomics and transcriptomics;
    - o Clinical proteomics;
    - o Metabolomics.
- **Encourage the submission of large research projects** - European Research Council (ERC), ERA Chair, etc. - **by providing prizes or incentives for** those who submit and score well.
- **Creation of a University biobank** with an institutionally organised legal framework, with the support of clinical disciplines and university clinics. Identify research areas where clinical expertise and access to biological samples and patient data (anonymised according to EU regulations) is a unique framework at European level and opens up UMFIH access to multiple European and international projects, creating strong partnerships in innovation and leading scientific publications.
- Inclusion of biobanking in European and international networks.
- Create a **lobby** at national and European level through which our university becomes known and invited in large collaborative projects (following the model of neighbouring countries).

## 4. Human resources

- Strengthening the high-performance research cores in the university centres and faculty collectives, with the redefinition and **accreditation/reaccreditation of** these structures in order to increase performance and optimise the use of material and human resources.
- Accreditation of new research centres - procedure at university level.
- Creation of a **Doctoral School Research Institute (DSRI)**: a "core-lab" with inventoried research infrastructure **for the purpose of unified, optimized and planned operation of the** university's **research centres**, in an organized system (with ROF and organization charts), in direct cooperation with the faculty research centres. Thus, human, material and financial resources will be ideally validated. Establish performance criteria for the ICSD and its two component centres. Develop this institute to a level of excellence.
- Presentation on the web page of the research activity (portal), marking the fields, disciplines, researchers with teams of activity, with projects carried out and results obtained, publications in the field. This ensures **increased visibility** and attracting external cooperation.
- **Development of human resources** specialised in research:
    - o Realization and implementation of the state of the UMF CDI staff;
    - o Realization and implementation of UMF's research collaborator status;

- o Implementation of the code of ethics and deontology in CDI activity;
- o Develop a human resources policy that sets out the role of researchers employed on a permanent basis at UMF;
- o Stimulating the employment of fixed-term researchers, post-doctoral researchers, associated with the university's research cores, based on budgetary resources obtained from grants/contracts/services, including attracting nationally or internationally recognised researchers with experience and visibility, on a fixed-term or indefinite basis;
- o Create as many research posts as possible in the university's centres of excellence, as well as at faculty and departmental level;
- o Support students with research skills through research grants.

- Investment in training of experts/managers in research and application for major project funding (**investment in leadership and management training**).
- Institutional support for teachers to **obtain the habilitation certificate** and to conduct PhDs, with highly professional coordinators, so that as many specialities as possible are covered.
- Encouraging larger-scale participation of **PhD students** in research contracts, UMFIH research teams and consultancy activity including through internal research initiative competitions, PhD co-supervision programmes. Increasing the completion rate of doctoral studies and reducing the average completion period may contribute to maintaining or increasing current figures.
- **Increase opportunities and support for young** early-career **researchers** by funding participation in international scientific events and innovation competitions, international invention fairs; identify mobility programmes to fund research internships in prestigious laboratories.
- Development of **student science circles** at departmental level - to be seen as nurseries for future PhD students and post-doctoral researchers in the faculty; organisation of hackathons to stimulate innovation activity.
- Support **entrepreneurial initiatives of teachers**, **researchers and students**; continue to support the Student Entrepreneurship Association "Iuliu Haţieganu" (ASAIH) Cluj-Napoca.

## 5. Research evaluation
- It will consider two main components: the publicly verifiable results of the research and the impact that these results have:
  - o **Publicly verifiable** research **results** are reflected in: publications (articles, especially in Q1 and Q2, books), patents, patented products, innovative technologies and services implemented in the business environment.
  - o **The impact of the** results should be analysed by:

- the consequences observed at the educational level - the number of students and PhD students attracted to research;
- consequences for research - citations;
- practical consequences - in terms of technology transfer, training, services, public policy, etc.

- In order to facilitate the evaluation process of the research activity in the University, the **Scientific Activity Monitoring Department** will be created within the Scientific Prorectorate.
- The evaluation of research will be carried out in the light of general principles: **relevance** to science and society, **competitiveness** (solves theoretical or practical problems of importance to society) and **transparency** (evaluation criteria are clear and explicit).
- Each research unit will have **coherent objectives, integrated into the University strategy**, with responsibilities and performance indicators. Criteria will be established for the evaluation of research centres based on the number of researchers, allocated funds, infrastructure, research area(s). Stimulation of competition will be achieved by allocating additional resources to reward significant achievements of high performers, as **regularly assessed by the research performance** of academic and research staff.
- Develop, with the help of research leaders, a **body of experts** to ensure peer review of the projects to be launched, thereby giving the project **increased competitiveness**.

## 6. Infrastructure
- Continue the **balanced development of the research infrastructure** and use it for the broad benefit of UMFIH research teams, especially in priority areas with notable results, to facilitate national and international collaboration.
- Convergence of investments and widening access to the operation of state-of-the-art equipment to several users within the university, with the establishment of access conditions.
- Identify all funding opportunities from grants to independent funding, as is done at European level.

## 7. Cooperation and internationalisation
- Strengthening and developing new **inter-university collaborations and cooperation** in order to enhance the **interdisciplinary** nature **of research**, an essential condition for obtaining valuable results that contribute to the scientific performance of the university, facilitated by the online database or ERRIS platform at county or regional level with all available research infrastructure.

- **Inter- and transdisciplinary collaboration** of the internal structures of the university with the other universities in Cluj, with the public health research institutes in Cluj-Napoca (Ion Chiricuţă Oncology Institute, Octavian Fodor Regional Institute of Gastroenterology and Hepatology, Nicolae Stăncioiu Emergency Heart Institute for Cardiovascular Diseases, Institute of Urology and Renal Transplantation), with the economic environment; forming **partnerships** to strengthen research capacity and to support various specific research initiatives, some of the directions that can be addressed are consortium activities with USAMV, UTCN, UBB.
- The conversion of the University and, through it, of the academic Cluj into a pole of attraction and scientific excellence by organizing large-scale **scientific events** with international participation that gain European tradition.
- To develop a **specific research strategy for the Doctoral School** to encourage foreign PhD supervisors to coordinate PhD theses in the university, thus bringing important know-how to PhD students.
- Support participation in **international networks** such as COST networks, membership of international consortia.
- Encourage collaborative publications with international research groups.

## 8. Funding

- The current precarious state of research funding supply through national programmes and private contributions is currently (2020) a major threat to UMFIH. **Access to European and international** research **funding** needs to be stimulated in the face of fierce competition.
  - o Popularise the support services offered by the University's research centres among members of the academic body with the aim of stimulating their participation in competitions for international scientific projects and access to European research funds.
  - o Accreditation of laboratories that can provide research or medical services.
- A fund will be budgeted at University level to ensure the operation of the research equipment and to finance the annual maintenance of the equipment in the University's research centres.
- In order to ensure the continuity of research undertaken on the basis of grants, a percentage of the directorship of these grants may be returned to the research teams directly or indirectly through administrative services. Grant funds will be allocated as a priority to the best performing departments in proportion to their contribution to obtaining these funds.
- Identify and promote research mobility funding instruments and competitions that ensure the development of research infrastructures.
- Creation of an **administrative facility** at the university level **to support scientific activity** (in the Research-Development-Innovation Department), which supports research activity by providing services to members of the academic community,

by involving administrative and economic staff, enabling the provision of research services contributing to the sustainability of the research centres: e.g. statistical data processing, consultancy on writing scientific articles, consultancy in medical English, regular information on current funding programmes, proposal and management of projects, production of scientific impact articles, scientometric analysis.

- **Optimise the procurement of** research materials and equipment.
- Inventorying functional equipment in the university, ensuring its regular verification, calibration.
- **Digitisation of research centres** to facilitate communication (online programmers, publication of service offers, etc.) and administrative services, modernisation of the IT base, up-grading of licences for software used in research.
- **Logistical** (procurement) **or financial support** for national, international grants and reduction of bureaucracy (online ordering, electronic signature for management teams, etc.).
- Establish an own fund from which to finance equipment maintenance contracts and major research initiatives until money is secured from funding bodies.
- Contact the private sector to increase funding for applied and sustainable research from non-public funds.
- Support **the "Valeriu Bologa" University Library** as a centre of excellence and promote it as a national model in the field; ensure access to scientific information through participation in the ANELIS+ consortium, or other future structures, and continue the acquisition of relevant databases for the medical field.
- Adoption of a strategy for **Open Access publication** of research results or teaching materials, including financial strategy.
- Application for **institutional projects** to fund developments
  proposed **education.**

## 9. Technology transfer and economic impact

- Accreditation of the **Technology Transfer Centre (TTC)** in the National Network for Innovation and Technology Transfer (ReNITT) and affiliation to European organisations in this field.
- Increasing the level of information of teachers, researchers, PhD students and Master students on **Intellectual Property** (IP), IP licensing, copyright, Technology Transfer, code of good practice in IP management, business plans, marketing plans and the need to orient research towards market needs.
- Ensuring **the transfer of know-how** between research - development - innovation structures, business environment, and public beneficiaries - institutions and population.

- Exploitation of the possibility of **patenting** ideas, products, production processes or techniques obtained from funded research projects; promotion in the economic environment of the most valuable research results of the University, transposition into the economic plan, including encouraging access to European patents. Promotion of contractual services for industrial research activities, respectively experimental development; provision of consultancy and support to researchers wishing to patent research results, given the current cumbersome patenting process (on average 5 years).

- Initiating and strengthening **new collaborations** in the field of research-development-innovation with prestigious universities and private companies, in order to achieve knowledge transfer to the socio-economic environment, through the Technology Transfer Centre, in accordance with the best practices in the field of Technology Transfer and Intellectual Property management in the University, according to the European Commission Recommendation no.1329/10.04.2008. Development of the cooperation of UMFIH with Regional and National Research Institutes, RDAs, economic operators, innovation clusters and national and European TTTs, in the field of TT, including in order to access EEA Grants - Collaborative Research Projects.

- Establishing and updating **the database of potential collaborators** (companies, Regional/National Institutes for Research/Development, Universities, companies specialized in fields of interest, regional development agencies, technology parks, etc.) in order to identify target partners for technology transfer and/or potential collaborators.

- Support **innovation** in the university by supporting the development of new businesses in competitive economic sectors at local, regional and national level (such as spin-offs, youth projects, start-ups from university patents).

- Elaboration of a **public offer of expertise**, services and collaboration potential in R&D&I activities of UMFIH **on the web page** (with description of competences in various fields of activity; offer of services (including list of equipment and tariffs); offer of expertise for R&D contracts; offer of consultancy and technology transfer in the field, with dedicated CTT page, etc.).

## 10. Weaknesses due to the national legal framework - obstacles to overcome

- Romania remains one of the countries with the lowest international visibility in terms of publications, number of citations and number of patents filed and granted.
- The low attractiveness of Romanian universities for European and international partners through poor scientific performance is due to several factors:
  - very long delays in the evaluation of submitted projects,
  - limiting access to participate in innovation competitions on smart specialisation axes by considering universities as large enterprises,
  - limiting investment in high-performance research equipment,

- o lack of qualified staff due to low performance criteria and lack of potential to do excellent research,
- o national framework for procurement of reagents and consumables for health research with excessive prices, cumbersome procurement, lack of national regulations for tendering suppliers and selection on the basis of lowest price (i.e. lowest quality).
- The obligation to employ research staff on a project basis for an indefinite period of time reduces the interest of researchers to perform once they have gained such a position. As in other countries, research must be carried out by doctoral and post-doctoral students under the supervision of a senior researcher, although in our country the low salaries of researchers in biomedical fields require them to carry out medical work in parallel.

12 March 2020