



Institut
D'Investigacions
Biomèdiques
August Pi i Sunyer

IDIBAPS

Strategic Plan

2018-2022

EXTENDED UNTIL 2024

1 EXECUTIVE SUMMARY

This strategic plan has been developed in order to provide clarity of vision across IDIBAPS, FCRB, HCB and other key stakeholders of the future direction and organisation of research and translation activities managed by the Institute. It aims to serve as a blueprint for organisational changes and priority activities in the coming years, providing a logical and coherent base upon which managers at all levels can make decisions and prioritise resources.

Although this plan spans 2018-2022, it is the strong recommendation of the Director and senior management that an update of the plan be undertaken midway, in 2020. This is due to four key factors with significant uncertainties, two internal and two external, that are expected to resolve significantly over the next two years:

1. **The SUMA project to merge IDIBAPS and FCRB into one legal entity**, which is expected to materialise by 2020. The way in which this is implemented, which is not yet clearly resolved, will have significant impact on key aspects of organisational structure and HR policy.
2. **The alignment of recruiting policies with Hospital Clinic**. As described in detail in this plan, analysis has identified a major generational and structural issue that has developed that puts in doubt the mid/long-term viability of the historical figure of researcher-clinician that has been at the heart of IDIBAPS success. Changing external factors and funding priorities create a complex scenario that requires detailed discussions. Also, IDIBAPS has to align its recruiting policies with UB and IIBB-CSIC to attract excellent researchers to contribute to its translational research objectives.
3. **H2020 will end in 2020 and the new Framework programme will commence from 2021**. There is currently little certainty around the priorities and funding topics of the new programme, but these will be substantially finalised and public by the second half of 2020, allowing for more focussed and concrete planning for this very important source of funding.
4. **The political situation is currently very unstable at city, regional and state levels** creating huge uncertainties around funding levels and priorities for research. It is hoped that by 2020 some stability will have returned and an update of the strategic plan at this time will enable actions to be more aligned to the Catalan and Spanish research priorities.

This strategic plan puts an emphasis during the first two years to resolve the first two issues above, which are within the control of IDIBAPS management and patrons, and seeks to prepare IDIBAPS for the most likely scenarios of the last two issues, which although uncertain in outcome nevertheless have some indicating trends.

IDIBAPS Vision: Returning to the main purpose of this plan, which is to provide clarity of vision to all involved with the Institute, the vision for IDIBAPS (being an ambitious expression of what the Institute will become in 5-10 years) is that ***IDIBAPS contributes significantly to improve the health and quality of life of people through high impact research***, thereby delivering on the **Mission** as outlined in IDIBAPS constitution: *to develop research of excellence that integrates basic biomedical and clinical science on the health problems of our society*.

The key elements of this vision are **high impact research**, meaning the need to ***pursue excellence and focus resource on those lines of research with high potential for impact***, and **improve the health and quality of life of people**, meaning to ***ensure that translation occurs and that the scientific results are converted into treatments that are disseminated worldwide***.

This plan proposes to extend the three IDIBAPS key objectives in its constitution by the addition of two new ones:

- a) **To foster research and development related to the various specialties of the health sciences.**
- b) **To contribute to the resolution of healthcare problems.**
- c) **To promote the dissemination of knowledge by participating in teaching activities.**

New:

- d) **To promote the transfer of scientific knowledge into innovation.**
- e) **To operate with the highest level of scientific and managerial integrity, public accountability, and social responsibility.**

IDIBAPS Values: This Strategic Plan also seeks to promote and reinforce IDIBAPS values, which are:

- **Integrity**
- **Accountability**
- **Care**

IDIBAPS Values Statement is:

IDIBAPS should always place first the health and wellbeing of patients and the community above any economic or intellectual advancement. IDIBAPS should exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

These values will be integrated into internal communications and as criteria when making investment and promotion decisions.

Governance: The IDIBAPS values underpin the governance of the Institute. Especially during these unstable times, IDIBAPS is aligned with no tolerance of any form of misconduct, therefore the governance of IDIBAPS must be impeccable, ensuring that **care, integrity and accountability** are first and foremost in every decision, and that the focus remains firmly on the efficient use of public resources for scientific research and translation oriented to societal needs.

An extensive SWOT analysis has been developed, which identifies that the main strengths of IDIBAPS come from its **consolidated excellent research teams, world-class infrastructure, and strong reputation**. Weaknesses arise mainly from **institutional and internal organisational complexity** and the **aging profile of leading researchers**. The main threats are **potential failure to attract young, renovating talent** and **difficulties in maintaining funding levels**. The main opportunities are potential ways to address the aforementioned weaknesses and threats.

IDIBAPS has identified a number of **sustainable competitive advantages** that need to be maintained, promoted, and improved, particularly in a context of social and economic changes:

- **Campus Clinic:** The strong complementarity of the institutions in the Campus Clinic working in Health Sciences (Clinical assistance, Education and Research); the close association with Hospital Clinic and UB; the vast amount of information and biological samples generated in the Campus; the international experience and profile of clinicians and scientists in the Campus.

- **Catalonia as a Biomedical Research Hub:** Strategic alliances with local institutions (e.g. BSC, CNAG, ALBA, among others) have the potential to significantly enhance the research performance of IDIBAPS.

Considering IDIBAPS' overall Mission and Vision, the strategic direction of HCB, International and Spanish R&D priorities, the current context of institutional organisation and priorities of the Catalan government, **IDIBAPS' core strategic objectives** for the period of this plan are:

1. CONSOLIDATE EXCELLENCE IN TRANSLATIONAL BIOMEDICAL RESEARCH

To drive a culture of excellence throughout the organisation in order to achieve internationally recognised scientific impact and technology translation, with particular focus on effective organisation and management of people and resources, leadership in project consortia, optimisation of processes, and quality training of young scientists.

2. ATTRACT AND RETAIN TALENT IN ALLIANCE WITH HCB

To provide an internationally attractive and competitive work environment, creating an inspiring workplace with a strong sense of community, that offers recognition and career advancement for achievement in both research and translational activities and thereby attracts and retains talent at a global level. To work on long-term strategies with HCB to recruit best clinician scientist and with UB and IIBB-CSIC to recruit best biomedical researchers, to achieve a sustainable and stable profile of researcher cohort, with particular regards to age, experience and gender.

3. ACHIEVE IMPACT IN CLINICAL PRACTICE THROUGH INNOVATION AND TECHNOLOGY TRANSFER

To foster a culture of innovation, in particular as regards to improving clinical practice, to achieve positive impacts in healthcare both locally and worldwide. To create an operational environment that facilitates innovation and technology transfer, including reducing administrative barriers for licensing and spinoff activities, and extending collaborations with leading companies.

4. CONSOLIDATE AND STABILISE RESOURCES AND INFRASTRUCTURES

To extend and stabilise funding sources to facilitate long term planning for human resources and technical infrastructures, in particular through securing longer-term structural funding commitments and diversifying funding sources, including donations and untapped funding strategies. In parallel, to optimise internal processes, organisational structures and the allocation of resources to improve productivity and support the achievement of other objectives.

5. INCREASE THE PROFILE OF IDIBAPS

To grow and consolidate the IDIBAPS-HCB profile locally, nationally and internationally, proactively developing strategic alliances with relevant complementary reference centres and taking leadership roles in national and international fora, thereby establishing IDIBAPS' authority as a reference for cutting-edge advancements and information on health technologies.

6. PLAN AND IMPLEMENT THE MERGER WITH FCRB (SUMA)

To agree, plan and implement the organisational merger of IDIBAPS and FCRB in a positive atmosphere that drives improved staff moral and performance across the two entities and with minimal disruption to ongoing activities.

The above objectives will be achieved by implementing the following actions, in broad order of priority. The last action, related to the merger between FCRB and IDIBAPS, will be progressed with priority at the political level in parallel with the other actions. The total additional financial resources required for these actions are shown in Table 1 (aspirational budget) at the end of this executive summary.

1. Drive Excellence in Research

The challenge for IDIBAPS is to improve research and its reflection in **key scientific indicators** and to **consolidate its scientific leadership in national and international fora**, both of which are crucial to accessing national and international resources, whilst fostering strong multidisciplinary and translational characteristics in its research activities. This directly addresses *Objective 1 – Consolidate Excellence in Translational Biomedical Research* and contributes to all the other objectives.

There is no one simple action that will on its own deliver these outcomes. This plan sets out a series of actions that in the mid-term should drive towards strong improvements in these key areas:

- a. Recognise and Reward Excellence
- b. Promote Scientific Leadership
- c. Promote Multidisciplinary and Basic-Applied Connections
- d. Optimise Research Organisational Structures
- e. Attain the HSR4R accreditation
- f. Improve Excellence in Scientific Publications

2. Develop Human Resources

As identified in the SWOT, the key challenges around HR are to continue to attract and retain talent from around the world in a very competitive environment with limited ability to match international salaries (especially northern Europe and non-EU OECD countries) and to correct the skewed age and gender profiles of the IDIBAPS researcher cohort.

Recognising that most IDIBAPS researchers are contractually employed by HCB, any and all actions must be coordinated with HCB

The following actions are designed to directly achieve *Objective 2 – Attract and Retain Talent in Alliance with HCB*, as well as contribute to Objectives 1, 3 and 5.

- a. Ensure Talent Promotion and Retention
- b. Promotion and Funding of Sabbatical Stays
- c. Ensure Talent Attraction and Identify Alternate Funding Mechanisms
- d. Ensure Generational Turnover in Scientific Leadership
- e. Update the Researcher Career Strategy
- f. Develop and Implement Career Support Mechanisms for Female Researchers
- g. Implement and Open, Transparent and Merit-Based Recruitment (OTM-r) Policy
- h. Evaluate Alternative Mechanisms to Secure Talent
- i. Support to other actions

3. Drive Innovation, Valorisation and Transfer of Technology

In order to improve the innovation culture at IDIBAPS it is necessary for more researchers be engaged in Technology Transfer (TT) activities and in particular to disclose their discoveries to the KTT office. We do

not expect that every researcher or even every group become active in TT, but those with inclination should have access to training and resources to do so, and be recognised and rewarded for success. Therefore, a general basic level of knowledge is required throughout the whole organisation, and pockets of specialised expertise must be fostered.

There are several activities and courses on TT already implemented by other entities in Barcelona, so IDIBAPS could leverage its position to secure training modules and other resources quickly and cheaply via one or more strategic alliances.

The following actions are designed to help achieve *Objective 3 – Achieve Impact in Clinical Practice through Innovation and Technology Transfer*, as well as contribute to Objectives 4 and 5.

- a. Establish a Training Programme in Innovation and Technology Transfer
- b. Recognise and Reward Innovation
- c. Promote Innovation in Internal Communications
- d. Promote Interaction with the Innovation Community
- e. Facilitate Technology Transfer Activities
- f. Strengthen the Capacities of the IDIBAPS KTT Office
- g. Develop Institutional Relationships with Industry

4. Consolidate and Optimise Technical Infrastructures and Services

To continue driving excellence in research, and to develop new activities in innovation and technology translation, demands will continuously arise for IDIBAPS to renew or acquire new equipment and services and to dedicate additional space for new activities. It is expected that IDIBAPS will acquire some new spaces in the Escola Industrial near its current buildings, that will allow limited growth within the near future. The activities that will benefit from these new spaces will be selected based on very strict criteria of excellence and multidisciplinary as defined in this strategic plan. Finally, IDIBAPS' financial incomes are not expected to increase significantly in the next 5 years so the budget associated with this plan is conservative in respect of growth.

Therefore, the strategy of IDIBAPS to address the aforementioned needs is to carefully optimise current spaces and resources and drive collaboration with its partners, specially with UB with which there is a cooperation agreement to complement the scientific equipments on campus, as well as with other entities in the ecosystem to access spare capacities in their infrastructures and/or collectively invest in new infrastructures that need not be physically located at IDIBAPS.

The following actions are therefore designed to help achieve *Objective 4 – Consolidate and Stabilise Resources and Infrastructures*, as well as contribute strongly to Objectives 1, 2 and 3:

- a. Develop the Infrastructure Roadmap
- b. Pro-actively leverage local institutional relations to gain access to their facilities
- c. Identify and lead community initiatives for Shared infrastructures
- d. Identify and pursue all available infrastructure funding opportunities
- e. Foster a culture of continuous improvement and innovation

5. Grow Communication and Outreach

Whilst IDIBAPS communications have developed significantly over recent years, the SWOT clearly identified weaknesses in both internal and external communications. Currently IDIBAPS lacks an effective intranet and internal communication channels are weak and not well subscribed. Negative effects include inefficiencies and duplications due to lack of knowledge about what other researchers and departments are doing, weak alignment with institutional goals and priorities due to lack of awareness, and reduced motivation as there is very little recognition of progress and successes.

Externally, the IDIBAPS name is virtually unknown outside of academic biomedical circles, although Hospital Clinic Barcelona is a fairly strong brand associated with quality and excellence. IDIBAPS achievements are not well promoted and despite being the largest hospital biomedical centre in Barcelona, it is not a strong reference in the public sphere, with negative effects on talent recruitment and fundraising from donors. In the context of this strategic plan, IDIBAPS has initiated a project to develop a new web page that will help to address this problem.

This strategic action is transversal in that improved internal and external communications to staff, stakeholders and the general public is critical to support all strategic objectives, but in particular, the actions here are expected to help to achieve *Objective 5 – Increase the profile of IDIBAPS*:

- a. Improve internal communication
- b. Be a prestigious brand nationally and internationally
- c. Be a reference in Scientific Outreach

6. Cultivate Institutional and International Links

*“Doing good is unfortunately not enough, to be valued one also must be **seen** to do good.”* IDIBAPS has a need to be visible at Catalan, Spanish and EU levels in academic, political and societal circles. A stronger visibility gives IDIBAPS influence with institutions that determine funding policies and topics, facilitates collaborations with industry and medical centres of repute, and boosts IDIBAPS objectives for talent recruitment and societal impact. It also supports stability and continuity in the face of political and societal uncertainties.

Such visibility requires not only strong communication actions in the press and online, but also direct participation by senior academic and management staff at relevant fora, and pro-active development of institutional and international relations.

One major issue for IDIBAPS is that its brand is overshadowed by that of HCB and is not well recognised outside of academic circles. The issue of branding of both HCB and IDIBAPS is currently the subject of analysis by an external consultancy.

The following actions are designed to help achieve *Objective 5 – Increase the Profile of IDIBAPS*, as well as support generally the other strategic objectives:

- a. Grow the international profile of IDIBAPS and its lead researchers
- b. Promote collaborations with international entities of repute
- c. Develop communications and events that support internationalisation
- d. Secure a voice in key local and international fora of influence
- e. Secure longer-term institutional support through alignment of objectives

A number of these actions are supported via existing funding and resources allocated in other areas such as Communication and Outreach, Excellence in Research, etc.

7. Grow Management and Operational Capacity

IDIBAPS has grown exponentially since its foundation and the managerial structure has organically adapted to this growth without clear planning of current and future needs. Furthermore, reporting and implementation requirements from funding agencies undergo constant change and create increased complexity. The SWOT analysis clearly identified significant opportunities for improvement in organisation, processes and support tools, particularly IT systems.

IDIBAPS must therefore identify current and future management needs and adapt the managerial organisation and operational processes to those needs. This may include reviewing the managerial positions and the required profiles and skills, and selecting and implementing new IT systems to increase productivity and facilitate continued growth in research activity without concurrently growing the management infrastructure.

The SUMA merger of the legal entities of IDIBAPS and FCRB will help reduce some of the underlying systemic complexity, but will not in and of itself address the management organisation issues. These must be dealt with in parallel.

The following actions are designed to help achieve *Objective 4 – Consolidate and stabilise resources and infrastructures*, as well as contribute to Objectives 1 and 2 by increasing operational capacity for research and translation activities:

- a. Optimise the organisation of management and administration departments
- b. Introduce periodic evaluations of IDIBAPS management
- c. Enhance the management information technology systems

8. Implement Merger with FCRB (SUMA)

In 2016, with financial support from the Generalitat de Catalonia, a legal study was performed to analyse possible legal formulae to merge IDIBAPS (a public consortium) with FCRB (a foundation). This was followed in 2017 with a detailed study to analyse the scientific and economic impact of such a merger between IDIBAPS and FCRB. The conclusions of both studies were presented and discussed with the General Direction of HCB and then also with the General Directors of Research from the Catalan Health Department and the Catalan Business and Knowledge Department, as well as with the Director of CERCA. Due to the political instabilities of recent times, the proposal did not reach the corresponding ministries and was therefore never approved. IDIBAPS and FCRB must review and update the documents and restart the negotiation process with the current Catalan government. The objective is to reach agreement within the next two years and implement the merger during the period of this Strategic Plan.

Strategic Actions Budget Summary: IDIBAPS management have made a detailed forecast of future expected earnings and expenses and key balance sheet figures, based on IDIBAPS current operational model and how this will be affected by the proposed SUMA merger with FCRB. This viability plan for the

period 2019-2022 has still to be approved in order to fulfil the requirements of the SUMA programme and for the merger itself to be approved and implemented.

Indicators: As with all research institutions, the time taken for the full impact of any significant policy or operational action to materialise is typically in the 5-10 year timescale. This makes it somewhat difficult to evaluate in real time the success (or not) of the implementation of many of the actions detailed in this Strategic Plan. Nevertheless, there are quantitative and qualitative indicators that can be used to monitor progress along the path to achieving the strategic objectives.

An initial indicative scoreboard is presented below, which will be refined with more detail in the full Strategic Plan and serve to monitor and evaluate the effectiveness and impact of the Plan's implementation.

Action	Indicators
Drive Excellence in Research	Median Impact Factor >5,6; number of Top Decile original articles >30%/year; International co-authorship; Median Citations/article >15; number of highly cited researchers/year > 6; achieve 80% open access publications
Develop Human Resources	Level of alignment in recruitment with HCB; Correction of age and gender profiles; ERCs and ICREAs; quality and number of applicants for open positions; maintain HRS4R logo
Drive Innovation, Valorisation and Transfer of Technology	Number of Spanish and international Clinical Guidelines; number of active (recruiting) Clinical Trials; Patents and licenses; Spin-Offs; Number of staff trained in TT; number of ideas presented to KTT for consideration
Implement Merger with FCRB (SUMA)	Approval by Government; Implementation
Consolidate and Optimise Technical Infrastructures and Services	Roadmap developed; Success in infrastructure funding calls; Access agreements signed with other centres; Leader in developing a singular proposal for the Barcelona area
Grow Communication and Outreach	Press mentions; online followers; citizens engaged; number of staff involved in Outreach; improved internal evaluations of internal communications; new web site
Cultivate Institutional and International Links	Increased number of fora attended; new local and international collaborations; leadership of local initiatives
Grow Management and Operational Capacity	Management restructure presented, approved, implemented. Evaluation process designed and implemented; New IT system scoped and implemented.

2 INTRODUCTION

2.1 GENERAL INFORMATION

Name: Institut d'Investigacions Biomèdiques August Pi I Sunyer (IDIBAPS)

Legal Format: Public consortium

Director: Elías Campo Güerri

Patrons: Generalitat of Catalonia, Hospital Clinic of Barcelona, Universitat Barcelona. Associated entity: Institute of Biomedical Research of Barcelona – CSIC

Year of Creation: 1996

Staff: 777 full-time equivalent (2017 consolidated IDIBAPS+FCRB)

Annual Budget: 54M€ (2017 combined budget IDIBAPS+FCRB)

Address: Carrer del Rosselló, 149, 08036 Barcelona

Tel: 932 27 57 07

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2.2 PRESENTATION

The Institute d'Investigacions Biomèdiques August Pi I Sunyer (IDIBAPS) is a public research center dedicated to biomedical translational research, founded in 1996 as a public consortium whose members are the Catalan Government, the Hospital Clinic of Barcelona (HCB) and the University of Barcelona (UB) with the association of the Institut d'Investigacions Biomèdiques de Barcelona (IIBB) of the Spanish "Consejo Superior de Investigaciones Científicas (CSIC)". The creation of the IDIBAPS was a strategic decision to expand the already excellent clinical research of the HCB to a translational dimension to foster the increasing challenges of the Biomedical Research and its translation into the clinical practice.

The IDIBAPS belongs to the CERCA system of Research Centers of the Generalitat de Catalunya (<http://cerca.cat>) that coordinates their strategic action to improve the positioning, visibility and impact of the Catalan research and facilitate the communication between public and private agents. The CERCA model promotes the development of **top-level research** in the **frontier of knowledge** intended to have a major international scientific and economic impact and to improve the wellbeing of societies and individuals. To ensure these goals the CERCA **management model** is totally flexible and self-monitored, based on multi-year activity programs within the framework of a **Strategic Plan** and **EX-POST supervision** that respects the autonomy of each center. The IDIBAPS is also an "Instituto de Investigación Sanitaria del Instituto de Salud Carlos III". These Institutes were created to develop translational research of high quality to transfer the results of basic, clinical and epidemiological research to the National Health System, the Science and Technology System, and the society in general. These Institutes also are periodically evaluated and one of the requirements is to have a Strategic Plan to guide their Scientific Policy.

In this context, the IDIBAPS has developed the current Strategic Plan 2018-2022 based on the achievements of the previous period, the current situation, and the new challenges raised in the national and international scientific and social context.

2.2.1 CONTEXTUAL SITUATION AND PRIORITIES

IDIBAPS develops a high quality research in different areas of Biomedicine. Its affiliation with the **HCB**, one of the Top Hospitals in Spain and Europe, configures a broad community of researchers with intense **clinical activity** that covers virtually all the spectrum of medical research reflected in the 5 areas and more than 100 groups that vertebrate its organisation (see 2.2.8.7 below). The creation of IDIBAPS fostered the development of intense translational research facilitated by the possibility to incorporate **basic researchers** and the development of **new laboratory facilities and core platforms**. This close association of clinical and laboratory research oriented to solve relevant questions related to human health, determines the creative specificity of the **translational research** of the IDIBAPS that has strong national and international impact.

The **quality and quantity of the research** generated at IDIBAPS has steadily increased over the years with an annual output of more than 1000 original articles published in top-rank journals (around 70% in the first quartile), around 250 opinion manuscripts, and participation in more than 40 national and international clinical guide-lines. More than 50% of these studies are led by IDIBAPS researchers indicating both the international leadership in different fields and the high level of international collaborations. **Innovation** is also a priority with more than 50 patent families and *know-how* protections, 75% licensed, and 9 spin-off companies generated in the last years. IDIBAPS researchers are also very successful raising competitive (> 19M€) and private (> 22M€) annual funding to develop their research (<http://www.idibaps.org/media/upload/memoria2017/>). This high productivity has situated IDIBAPS as one of the Top Biomedical Research Institutions in Spain and among the highest ranks of similar Institutions in Europe:

- *Scimago Institutions Rankings*: IDIBAPS/HCB is the second in Spain and among the top 25 in Europe (<http://www.scimagoir.com>, 2017)
- *European Commission H2020*: According to the funding obtained from H2020 program IDIBAPS is the second Spanish Institution and the first among Health Institutions. It is among the top 50 European Institutions capturing EC funds. (<http://eshorizonte2020.cdti.es/index.asp?MP=9&MS=31&MN=2&TR=A&IDR=1&iddocumento=6804>)
- *Highly cited researchers*: In the last years IDIBAPS has 6-8 researchers among the world 1% highest cited Researchers in Biomedicine, the highest number among the Spanish Biomedical Research Institutions (CLARIVATE ANALYTICS: <https://clarivate.com/hcr/researchers-list/archived-lists/>).

IDIBAPS researchers have strong **international relationships** as highlighted by their collaboration and leadership in more than 50 projects of the European Commission and more than 30 funded by other International Agencies, including the NIH (3 active projects). These projects integrate more than 650 international institutions mainly from Europe and USA from all over the world (https://ec.europa.eu/research/participants/portal/desktop/en/organisations/partner_search.html).

IDIBAPS is committed to foster the **scientific career** (<http://www.idibaps.org/research-career/>) of its researchers with a specific strategy that follows the EC recommendations. This policy was recognized by the European Commission with the logo "Human Resources Excellence in Research" in 2015. More than 100 PhD theses are defended every year. IDIBAPS has specific training programs such as the Stepping-stone for researchers in training that provides non-scientific tools and skills which are key for the development of their careers, and the scientific and educational program with more than 60 annual seminars and lectures.

Although the track of IDIBAPS scientific activity is excellent, when we compare ourselves with most renowned international Health institutions and other national and international Biomedical Research centers, we see that there are possibilities for improvement. Comparisons between institutions have to be analyzed with caution since differences and contexts determining the respective realities are multiple and complex. However, IDIBAPS should seek strategies to further increase the global quality of their scientific outputs, the development of more strategic projects aiming to more breakthrough contributions and promote higher participation in innovative initiatives.

IDIBAPS is facing important **internal and external challenges** to keep this ambitious pace in the rapidly evolving world of Biomedical and Health Science. The analysis of the **age and gender** distribution of the principal investigators (PI) at the IDIBAPS shows some figures that need attention. The gender distribution at PI levels is clearly imbalanced with few women recognized as group leaders and requires dedicated consideration, as reflected by the strong demand of society and recommendations from scientific authorities. On the other hand, more than 65% of the Group leaders are older than 55 years and a substantial number of them with the highest productivity are **clinician scientists**, a profile of physicians that has been a key element in the success of the IDIBAPS. However, the renewal of professionals with this profile is at risk. Their age, the economical difficulties in the health system, and, probably, changes in the culture of medical professionals that do not consider this profile as a priority, are important challenges to maintain this relevant figure. The IDIBAPS needs to design and implement new strategies in cooperation with the HCB to attract and sustain clinician scientist to integrate clinical and basic research that is decreasing all over the world. In parallel, IDIBAPS needs to confront the challenge of **attract and retain the best researchers** in the field, particularly those with the best possibilities to cooperate with strong clinical groups. Again, convergence with the policies of the associated institutions, HCB, UB and CSIC in this human resources policy will be key elements to maintain and improve the excellent track of scientific contributions of the IDIBAPS.

The lingering **economic crisis** has hampered the access of researchers and the Institution to the required funding to maintain and improve the scientific activity at an excellent level in a very demanding and competitive environment. An important problem has been the limited structural funding provided by the Funding Agencies and the Institutions of the Consortium that compromise the consolidation of the basic organization and technological development. The constraints in the Health and Research systems have also had a detrimental effect on resources, research time for physicians, and motivation of the professionals. In this context of economical restrictions, competition for high level funding and diversification of the strategies to obtain resources, national and internationally, are essential to keep the pace of excellence. In this line cooperation between IDIBAPS and private funding as well as develop new fundraising initiatives should be a priority to guarantee the continuous funding required to maintain the excellent level of research. In addition to the economic difficulties, we appreciate a **change in the perception of research as a central value** of the medical activity among new generations of physicians. The relevance of research has been taken for granted in the recent history of the HCB. However, questioning of this value is emerging with a certain subtlety. This change in the culture of research runs in parallel with other modifications in the values of our society that are making more difficult to accept the current complications of a research career in our social context. We need to design and implement novel strategies, particularly in cooperation with HCB, to support and promote motivation among talented researchers taking into consideration all these tendencies.

Last but not least, the **organization of the research at the campus Clinic** is complex. IDIBAPS as research institution relies on the support of the Fundació Clinic per a la Recerca Biomedica (FCRB), an institution created in 1989 that supports most of the administrative structure for the management of the research of IDIBAPS and HCB. Part of the clinical research (clinical trials), innovation of HCB professionals not members of the IDIBAPS and non-University educational activities are managed by the FCRB. Because of that, most of the HCB researchers have funds and activities in both institutions. The analysis of this

complex situation in the past years has clearly led to the recommendation of the fusion of both entities in a unique Institution that would facilitate the management of the research in the campus. This challenging project should provide a forum to consider the contributions of all the Institutions that configure the IDIBAPS (GenCat, HCB, UB, CSIC) to maintain and improve the success and great impact of the Research and Innovation of the researches in the Campus Clinic.

IDIBAPS priorities based on prospective challenges, opportunities and strengths in Biomedical Science

The research activity of IDIBAPS is well aligned with the current strategic priorities of the European Commission and other major national and international funding agencies such as the NIH. However, it is important to monitor the evolution of the scientific challenges in the society and the prospective tendencies of funding agencies.

IDIBAPS should **prioritize actions** that will provide their researchers with the best conditions to generate frontline discoveries and be successful in the search for competitive funding. The driving goals of major funding agencies are oriented to research that improves health and wellbeing and foster economic development through the innovation cycle from discovery to implementation.

Understanding the complexity of the diseases is taking new approaches that emphasize the need of transversal actions integrating multidisciplinary expertise. Cooperative efforts between groups and participation in local, national and international research networks are logical consequences of these expanding strategic lines. Generation of basic knowledge is increasingly using powerful approaches with new technologies such as gene editing, single cell molecular dissection, and image analysis among others. Reproducing experimentally the complexity of diseases is taking innovative approaches with novel 3-D organoid, tissue, animal, biochip, and in silico models that capture different aspects of their biology.

The challenge of generating and understanding biomedical “Big Data”, “Artificial Intelligence” and finding strategies for implementation of the derived knowledge provide new perspectives to develop **precision/personalize medicine**, a common priority in the portfolio of virtually all agencies. In this context, proposed funding instruments are emphasizing the promotion of high quality “data bases” and sample biorepositories, development of new computational tools, digital health data standards and electronic records, systems technologies for information integration and interchange, among others.

An increasing motivation in society is to “**move knowledge into cure**” as fast as possible. In this sense, research on new diagnostic and therapeutic approaches is very relevant. Innovative clinical trials with new strategies are powerful instruments.

Promoting innovation from basic discoveries to validated guidelines, new products and processes are the natural pathway to translate into the practice the value of research. Together with the transforming power of Biomedical research and the value of Open Science policies, also come **legal, ethical and social challenges** that must be addressed with exquisite rigor.

2.2.2 FOUNDING VISION

IDIBAPS contributes significantly to improve the health and quality of life of people through high impact research.

2.2.3 MISSION

IDIBAPS mission is to develop research of excellence that integrates biomedical basic and clinical science to improve the prevention and treatment of health problems in our environment.

2.2.4 VALUES

IDIBAPS values are:

- Integrity
- Accountability
- Care

IDIBAPS Values Statement is:

IDIBAPS should always place first the health and wellbeing of patients and the community above any economic or intellectual advancement. IDIBAPS should exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

2.2.5 KEY OBJECTIVES

As described in IDIBAPS statutes, version approved 2015:

The fundamental objective of the Consortium Institute for Biomedical Research August Pi i Sunyer is the Development of research in the field of biomedical sciences, especially activity-oriented basic and clinical research.

The Consortium's specific purposes are:

- f) To foster research and development related to the various specialties of the health sciences.
- g) To contribute to the resolution of healthcare problems.
- h) To promote the dissemination of knowledge by participating in teaching activities.

The Governing Board may extend the Consortium's aims to those directly or indirectly related to the fundamental objective of the entity and do not contradict these Statutes.

This plan proposes to add the following new objectives:

- i) To promote the transfer of scientific knowledge into innovation.**
- j) To operate with the highest level of scientific and managerial integrity, public accountability, and social responsibility.**

2.2.6 BRIEF HISTORY

At the end of the 1990's, clinical research globally underwent a major change. The traditional model of the second half of the 20th century was based on epidemiological research, in clinical, biological and pathology studies of patient cohorts, and some experimental studies of physiopathology that used rodent experimental models. Nothing else. The advances being made in immunotherapy, genetics and especially in molecular biology, presented exciting new opportunities to address clinical research in different ways. Hospitals like HCB, with a large number of physicians with research vocation, were sensitive to these changes and realized that with the limited infrastructures available at the traditional clinical and pathology labs, they could not face the new challenges. This was the moment when translational research born.

Translational research is the basis for the creation of IDIBAPS. It is about asking the clinical question, the one that arises from the disease, its prevention, diagnostics or treatment, and translating it to the

2.2.8 ORGANISATIONAL STRUCTURE AND GOVERNANCE

2.2.8.1 LEGAL REGIME

IDIBAPS is a **voluntary consortium of indefinite duration**, created under article 55 of Law 13/1989, of December 14, on organization, procedure and Legal regime of the Administration of the Generalitat de Catalunya, in order to develop research in the field of biomedical sciences and to group research groups in biomedicine that carry out their work in the field of Catalonia.

The Consortium regulated in these Statutes is a public entity, with a legal personality that is full and independent of that of its members, with all the legal capacity of public and private law that it needs to achieve its objectives.

2.2.8.2 DECISION MAKING AND GOVERNANCE

According to the IDIBAPS statutes, the Board of Patrons and the Director are the governors of the consortium. Two members of each patron entity belong to the Board of Patrons; these representatives choose the president, the vicepresident and the secretary. The Director attends the meetings with voice but no vote.

The Board of Patrons chooses the members of the Scientific Advisory Board and the Director.

2.2.8.3 BOARD OF PATRONS

The Governing Board of IDIBAPS comprises:

- consortial entities:
 - o Generalitat of Catalonia (2 members)
 - o Hospital Clinic Barcelona (2 members)
 - o Universitat Barcelona (2 members)
- associated entity:
 - o Institute of Biomedical Research of Barcelona – CSIC (2 members)

The membership of the Board as at **September 2018** is shown in the following table:

Position	Name	Title
President	Gómez Pallarès, Joan	Director General of Research. Department of Business and Knowledge.
Vicepresident	Roser Cortés Colomé	Director of IIBB of CSIC
Delegate HCB	Campistol Plana, Josep M.	General Director HCB
Delegate HCB	Castells Garangou, Antoni	Medical Director HCB

Delegate Generalitat	Barberà, Albert	General Director of Research and Innovation in Health. Department of Health.
Delegate UB	Cardellach López, Francesc	Dean of the Faculty of Medicine of the UB
Delegate UB	Espriu Climent, Domènec	Vice-Rector for Research at the UB
Delegate CSIC	Calvo Calvo, Lluís	Institutional Coordinator of the Consejo Superior de Investigaciones Científicas (CSIC) of Catalonia

Secretary*	Rovira Pato, Lluís	Director of ICERCA
Director IDIBAPS*	Campo Guerri, Elías	Director IDIBAPS

* with voice but no vote

2.2.8.4 FCRB GOVERNANCE

Information on the closely linked FCRB is included for reference:

Year of creation: 1989

Legal form: Public non-profit foundation

Mission: Develop and manage research, innovation and teaching of the HCB.

Board of Trustees:

- Universitat de Barcelona (2)
- Hospital Clinic Barcelona (3)
- Independent (1)

Members:

President	Joan Elías Garcia	Rector of UB
Vicepresident	Josep M ^a Campistol i Plana	General Director of HCB
Secretary	Antoni Castells i Garangou	Medical Director at HCB
Delegate	Francesc Cardellach i López	Dean of the Faculty of Medicine of the UB
Delegate and Director	Elías Campo i Güerri	Director of Research and Innovation at HCB
Delegate	Carles Ponsa i Ballart	Independent Member

2.2.8.5 SCIENTIFIC ADVISORY BOARD

The Members of the Scientific Advisory Board as at September 2018

- José M. Mato (President since 2018), Centro de Investigación Cooperativa en Biomateriales (CIC bioGUNE), Derio, Bizkaia y Centro de Investigación Cooperativa en Biomateriales (CICbiomaGUNE), Donostia, Gipuzkoa
- Jesús Ávila (former president), Centro de Biología Molecular Severo Ochoa, Madrid
- Fernando Arenzana-Seisdedos, Institut Pasteur, Paris
- Amparo Cano Garcia, Departamento de Bioquímica de la Universidad Autónoma de Madrid, Madrid

- Francisco Fernández Avilés, Servicio de Cardiología, Hospital Gregorio Marañón, Madrid
- Ramon Gomis de Barberà, Universitat de Barcelona, (former Director)
- José López Barneo, Departament de Fisiologia Mèdica i Biofísica, Facultat de Medicina, Sevilla
- Carlos López Otín, Departamento de Bioquímica y Biología Molecular, Universidad de Oviedo
- Carlos Macaya, Servicio de Cardiología, Hospital Clínico San Carlos, Madrid
- Óscar Marín, King's College London
- Federico Mayor, Centro de Biología Molecular Severo Ochoa, Madrid
- Pura Muñoz-Cánoves, Universitat Pompeu Fabra, Barcelona
- Ángel Pellicer, NYU School of Medicine
- Ciril Rozman, Servei d'Hematologia, Hospital Clínic de Barcelona, Universitat de Barcelona
- Jesús San Miguel, Servicio de Hematología, Hospital Clínico de Salamanca
- Francisco Sánchez-Madrid, Servicio de Inmunología, Hospital La Princesa, Madrid
- Eugenio Santos, Centro de Investigación del Cáncer, Salamanca
- Antonio Vidal-Puig, Department of Clinical Biochemistry, School of Clinical Medicine, University of Cambridge

2.2.8.6 DIRECTION COMMITTEE

- Elías Campo, Director (president)
- Neus Agell, Vice-Dean of School of Medicine and Health Sciences, UB and Head of the IDIBAPS group "Signal transduction and cell cycle"
- Cristina Fillat, Head of the IDIBAPS Group "Gene therapy and cancer"
- Joan Carles García Pagán, Deputy director of research at HCB and Head of the IDIBAPS group "Hepatic hemodynamics and portal hypertension"
- Josep Maria Llovet, ICREA researcher and Head of the IDIBAPS Group "Translational research in hepatic oncology"
- Anna M Planas, CSIC researcher and Coordinator of the IDIBAPS Research Area 4
- Rosa Vilavella, General Manager
- Marga Nadal, Strategy Director (secretary)

2.2.8.7 ADMINISTRATION DEPARTMENTS

Most of the administrative support to IDIBAPS researchers is provided by FCRB.

The General Manager (gerente) of FCRB also acts as General Manager of IDIBAPS. The departments of Legal, Human Resources, Finances, Maintenance and infrastructures and Project Management Office, are under the coordination of the Management Director.

Additionally, IDIBAPS has a Strategy Director that coordinates the Communication, Scientific Coordination, Knowledge Translation and Transfer (KTT), Laboratory Managers and Institutional Actions offices, as well as the Core Facilities.

All these departments effectively function as one unified administration.

2.2.8.8 RESEARCH AREAS

IDIBAPS is organised into 5 Research Areas, 56 Teams and 108 groups. Overall, there are close to 500 accredited principal investigators who are recognized by IDIBAPS for their research and their ability to capture research funds.

2.2.8.8.1 AREA 1 - BIOLOGICAL AGGRESSION AND RESPONSE MECHANISMS

Area 1 is formed by 9 teams that conduct research into the response mechanisms to biological aggressions from different standpoints. This area carries out a wide range of activities, which are divided up into two parts. Firstly, the study of infectious and toxic agents, and secondly, immunological and inflammatory reactions of the body.

- Inflammatory joint diseases (IJDs), Raimon Sanmartí
- Systemic autoimmune diseases, Ricard Cervera
- Infectious diseases and AIDS, Josep M. Miró
- Immune receptors of the innate and adaptive system, Francisco Lozano
- Musculoskeletal repair and plasticity, Joaquim Forés
- Immunogenetics of the autoinflammatory response, Jordi Yagüe
- Emergencies: processes and pathologies, Oscar Miró
- Molecular and cellular bases of inflammation. Structural and biological mass spectrometry, Daniel Closa
- Ocular Inflammation: Clinical and experimental studies, Alfredo Adán

2.2.8.8.2 AREA 2 - RESPIRATORY, CARDIOVASCULAR AND RENAL PATHOBIOLOGY AND BIOENGINEERING

The area has 10 teams and their focus is the study of three vital parts of the body: the respiratory, cardiovascular and renal systems. It deals with the various pathologies and risks affecting these systems, from different standpoints.

- Atherosclerosis, coronary disease and heart failure, Manel Sabaté
- Arrhythmias, resynchronization and cardiac imaging, Josep Brugada
- Nephro-urological diseases and kidney transplantation, Fritz Diekmann
- Cardiovascular, nutrition and aging, Ramon Estruch
- Respiratory biophysics and bioengineering, Ramon Farré
- Applied research in infectious respiratory diseases, critically ill patients and lung cancer, Antoni Torres
- Physiopathological mechanisms of respiratory illnesses, Joan Albert Barberà
- Clinical and Experimental Respiratory Immunoallergy (IRCE), Joaquim Mullaol
- Inflammation and repair in respiratory illnesses, Alvar Agustí García-Navarro

Genetics and urologic tumors, Antonio Alcaraz

2.2.8.8.3 AREA 3 - LIVER, DIGESTIVE SYSTEM AND METABOLISM

Area 3 has 15 teams Area 3 has 15 teams composed of researchers who combine their skills in clinical, experimental and basic research. Its translational research approach has succeeded in contributing important breakthroughs in terms of knowledge, diagnostic techniques and the treatment of pathologies of interest to the groups. The mission of the different teams composing this area is to apply innovative methods to different medical problems: cirrhosis and liver complications, inflammatory and neoplastic diseases of the digestive tract, metabolic disorders in diabetes, metabolic bone diseases and foetal medicine.

- Gynecological endocrinology and human reproduction, Maria Angeles Martínez-Zamora
- Fetal and perinatal medicine, Eduard Gratacós
- Viral, toxic and metabolic hepatopathies, Xavier Forn
- Mechanisms of liver diseases and complications of cirrhosis, Pere Ginès
- Hepatic oncology, Jordi Bruix
- Hepatic hemodynamics and portal hypertension. Hemorrhage from ruptured gastroesophageal varices, Joan C. García-Pagán
- Inflammatory bowel disease (IBD), Julián Panés
- Cholestasis and bone pathology, Albert Parés - Núria Guanyabens
- Mitochondrial regulation of cell death and steatohepatitis, José Carlos Fernández-Checa
- Liver transplantation and graft viability, Miquel Navasa
- Gastrointestinal and pancreatic oncology, Antoni Castells
- Inherited metabolic diseases, Antonia Ribes
- Diabetes: metabolic and molecular networks, Josep Vidal
- Pathogenesis and prevention of diabetes, Anna Novials

2.2.8.8.4 AREA 4 - CLINICAL AND EXPERIMENTAL NEUROSCIENCE

This area of IDIBAPS specialises in the study of neurological and psychiatric diseases. Based on the excellent cooperation between the experimental and clinical units, its 12 teams conduct research into topics ranging from the study of the structure/function relationship in the nervous system and its basic molecular mechanisms for neurotransmission and cell death to the development and evaluation of new experimental therapies. It also includes innovative trends such as systems neuroscience.

- Neuropharmacology and experimental neuropathology, Guadalupe Mengod
- Brain ischemia: Clinical and experimental studies, Ángel Chamorro
- Parkinson disease and other neurodegenerative movement disorders: clinical and experimental research, M^a Josep Martí
- Neurophysiology and functional studies of the nervous system, Alejandro Iranzo
- Muscle research and mitochondrial function, Josep M. Grau
- Pathophysiology and treatment of neurodegenerative disorders, Jordi Alberch
- Translational psychiatry and psychology, Eduard Vieta
- Neuropsychology, Carme Junqué
- Systems neuroscience, Maria Victoria Sánchez Vives
- Clinical and experimental neuroimmunology, Josep Dalmau
- Neurobiology, Ramon Trullàs
- Alzheimer's disease and other cognitive disorders, Raquel Sanchez del Valle

2.2.8.8.5 AREA 5 - ONCOLOGY AND HAEMATOLOGY

The 13 teams composing this area perform basic, experimental and clinical research tasks in the fields of oncology and haematology. Their aim is to improve prevention, prognosis and treatment in a group of diseases that is becoming more and more common in modern-day society: cancer processes.

- Oncological molecular pathology, Elías Campo Güerri
- Diagnosis and therapy in oncology, Francesca Pons
- Molecular Biology of reproduction and development, Rafael Oliva
- Genetics, Montserrat Milà
- Melanoma: imaging, genetics and immunology, Susana Puig
- Hematopoietic progenitor cell transplantation, Álvaro Urbano-Ispizúa
- Hematological oncology, Francisco Cervantes
- Physiopathology and molecular bases in hematology, Dolors Colomer
- Hemotherapy – hemostasis, Ginés Escolar
- Molecular and translational oncology, Pere Gascón
- Cell proliferation and signalling, Oriol Bachs
- Cell compartments and signalling, Carles Enrich
- Translational genomics and targeted therapeutics in solid tumors, Aleix Prat

2.2.8.8.6 TRANSVERSAL RESEARCH GROUPS

Some teams linked to IDIBAPS undergo a transversal research that feeds from various disciplines or provide services to other teams. Here are included researchers in international health, pharmacology, primary care and nursing.

- Clinical pharmacology, Gonzalo Calvo (*provisional pending approval by CCD*)
- Primary Healthcare Transversal Research Group, Antoni Sisó Almirall
- Research in nursing, Adelaida Zabalegui

2.2.9 FINANCIAL RESOURCES

From a financial and managerial perspective, IDIBAPS and FCRB are managed in a global and consolidated manner. The two institutions share the principal investigators (PI) accredited by IDIBAPS, who have funds, projects and resources in both entities. Annually, the research executed by IDIBAPS accredited PIs is almost 90% of the executed research activity, with the remaining 10% executed by non-accredited PIs (PI who have projects in the FCRB but do not fulfill the criteria to become an IDIBAPS researcher).

This section presents consolidated figures, with various breakdowns provided to show more detail. All figures are per consolidated accounts for 2017 unless otherwise stated (*numbers in European dot version*).

The annual results for 2017 IDIBAPS are affected by the impact of a change in VAT methodology for the period 2014 to 2017, which resulted in an almost 1M€ charge in 2017. Were it not for this charge, the financial results for 2017 would have been positive, following on slightly positive annual results since

2014, due to a viability plan that was implemented in 2014. The net retained total of own funds would have also improved by these amounts.

Nonetheless, net equity is positive. The outstanding debt totals 15,6M€ of which 2,1M€ are contributed by the Generalitat. The available cash funds cover all current and future commitments now. There are no overdue debts pending and the payment term to suppliers is 30 days.

In 2017, the two entities recorded 54,4 M€ of income and 54,5 M€ of expenditure, of which 46.2 M€ were directly related to the execution of research projects.

2.2.9.1 EQUITY POSITION

Key Balance Sheet figures:

2017 Results (K euros)	IDIBAPS	FCRB	Consolidated Total
Annual Result	-535	443	-85
Own funds	-3.334	-1.259	-4.593
Net Capital	1.197	24.122	25.319
Debt Pending	6.572	9.125	15.697
Cash Funds	12.927	22.423	35.350

Annual Result: The net surplus (positive) or deficit (negative) between incomes recorded and expenses incurred for the year.

Own Funds: The accumulated surplus/deficit from current and past years.

Net Capital: Total net assets, including buildings and accrued savings.

Debt Pending: Total debts, including short and long term debt.

Cash Funds: Cash funds held in bank accounts. These can be high due to pre-financing of competitive grants where funds are forwarded to IDIBAPS but not yet recorded as income as the funded activities have not yet been performed.

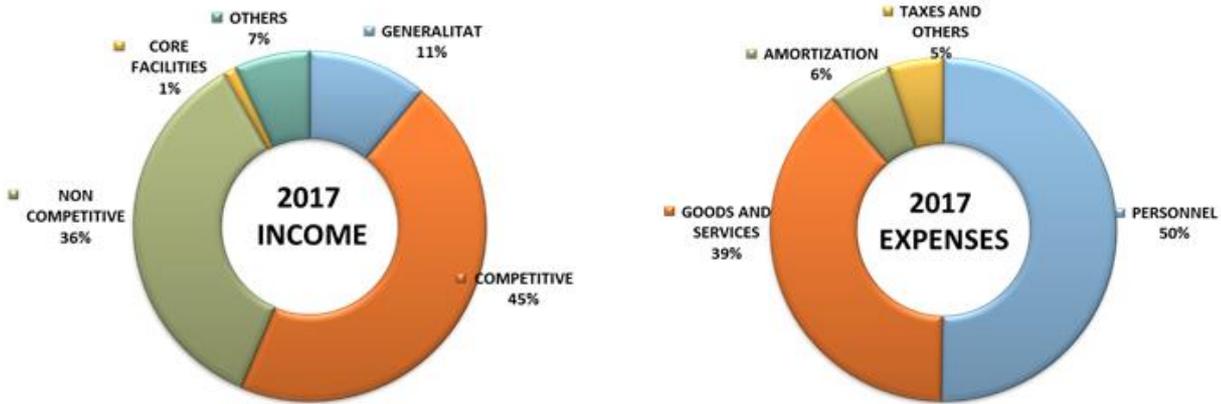
2.2.9.2 INCOME AND EXPENSES

Income and expenses incurred (applied, spent) during the year 2017:

2017 Results (K euros)	IDIBAPS	FCRB	Consolidated Total
TOTAL INCOME	29.695	27.757	54.479
TOTAL EXPENSES	30.230	27.314	54.565
NET RESULT	-535	443	-85

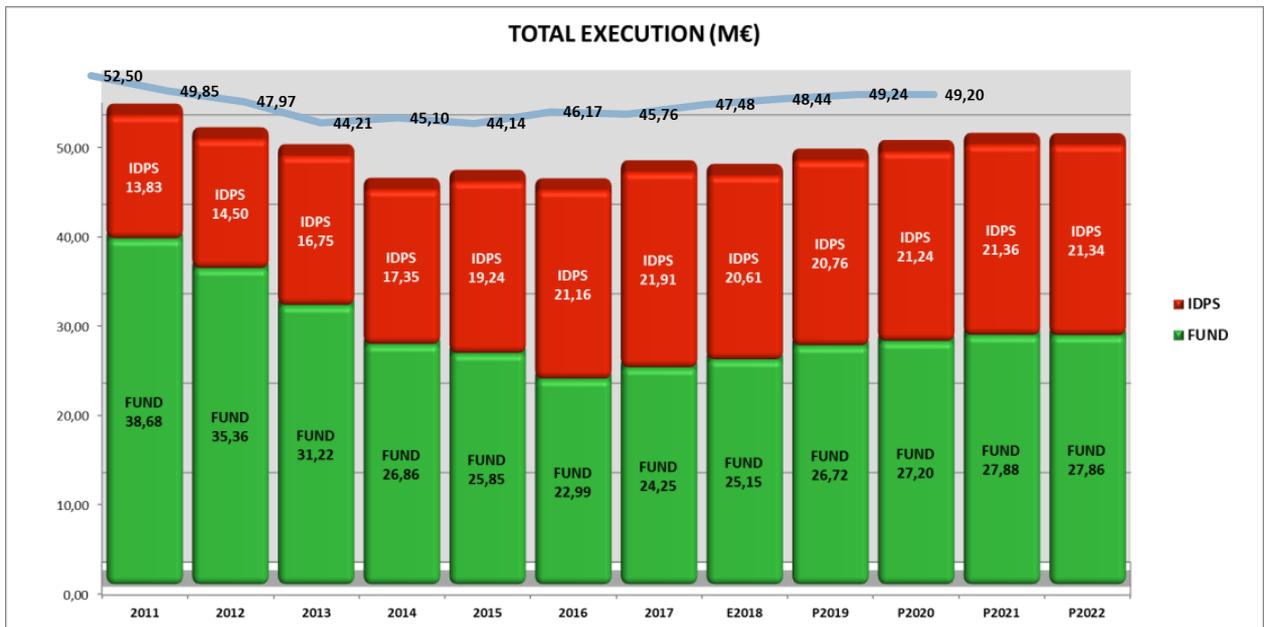
Income: 45% of the total income applied in 2017 was generated from competitive funds, 36% from non-competitive funds and 11% from contributions from the Generalitat of Catalonia.

Expenses: 50% of expenses were spent on personnel, 39% on goods and services, and 5% on taxes (mainly due to the VAT charge).



2.2.9.3 EXECUTION OF PROJECTS AND RESEARCH ACTIVITIES

The research conducted in 2017 totaled 46,17 M€. The evolution from 2011 by institution and by type is shown below, along with projected future funding as per the draft viability plan.





Total research funding and activity has stabilised over recent years, following a progressive decrease in competitive funding due primarily to two key issues:

- Since 2011 one branch of activity (projects and management related to international health and NGO cooperation) has been progressively transferred to another institution, which is currently merged within ISGlobal.
- As the economic crisis affected there was a decrease in the number and funding of publicly funded competitive calls.

Looking forward, the projections for the period 2019-2022 are based on a realistic forecast of gradual increase in funding. IDIBAPS has a high capacity to attract funds as can be measured by the number and size of projects granted and executed each year (in 2017 the executed research activities totalled 42,1 M€) and also with the amount of research funds pending execution in December 2017, which were 91 million euros, consolidated across IDIBAPS and FCRB. This represents two full years of available research capacity in already granted research projects.

Looking at the number currently active projects, as shown in the table to the right, European and international represents almost 17% of the competitive grants. Clinical trials also stand out and represent 45% of non-competitive grants.

	GRANTS
COMPETITIVE GRANTS	605
NATIONAL	504
EUROPEAN	68
INTERNATIONAL	33
NON COMPETITIVE GRANTS	2.133
CLINICAL TRIALS	973
PRIVAT CONTRACTS	742
DONATIONS AND PATRONAGE	248
KNOWLEDGE DISSEMINATION	170
TOTAL RUNNING GRANTS	2.738

2.2.9.4 MANAGEMENT AND SUPPORT

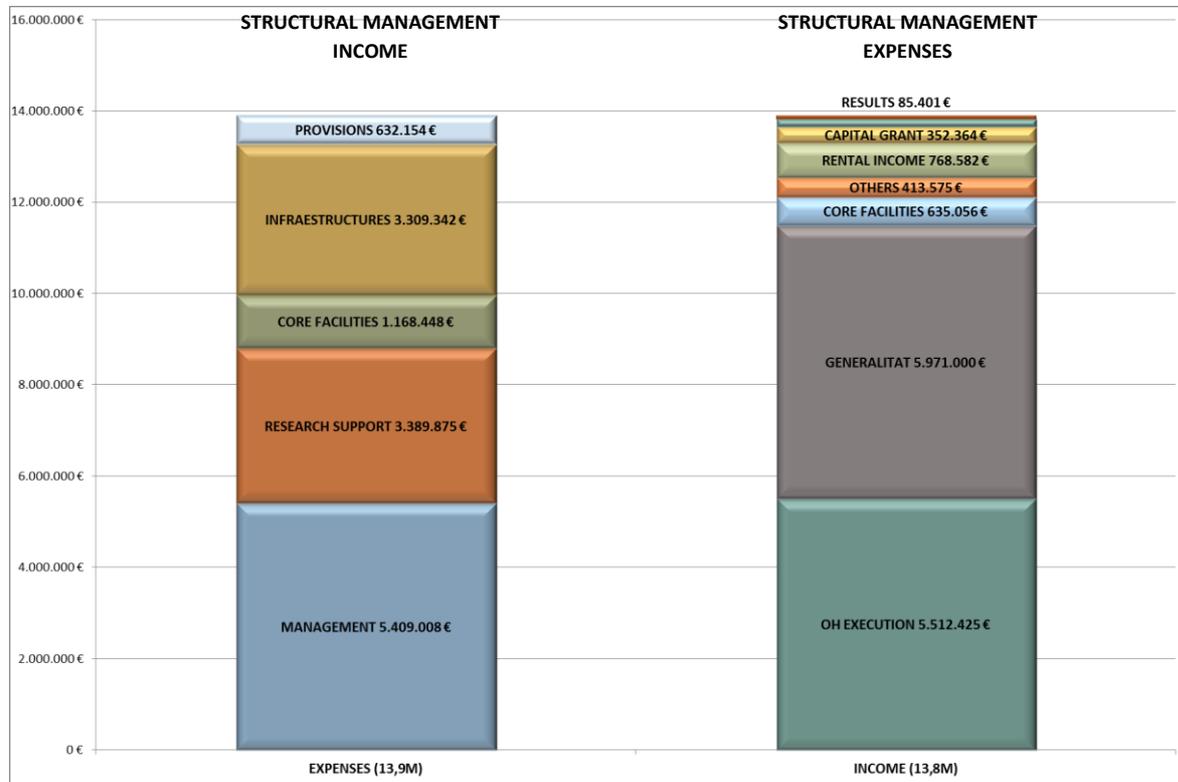
Of the total expenses generated in 2017, 13,9 M€ corresponds to structural management, which represents 26.5% of the consolidated operating budget of the two institutions.

Structural Management encompasses different services, which are:

- Management
- Foster research (activities and resources to support and impulse research)

- Platforms (core facilities)
- Maintenance of infrastructures (buildings, equipment, ...)

The relevance of these structural resources along with the incomes that allow financing them is shown in the table below.



2.2.10 HUMAN RESOURCES

A particular characteristic of IDIBAPS is the range of different labour relationships by which personnel are associated with the Institute.

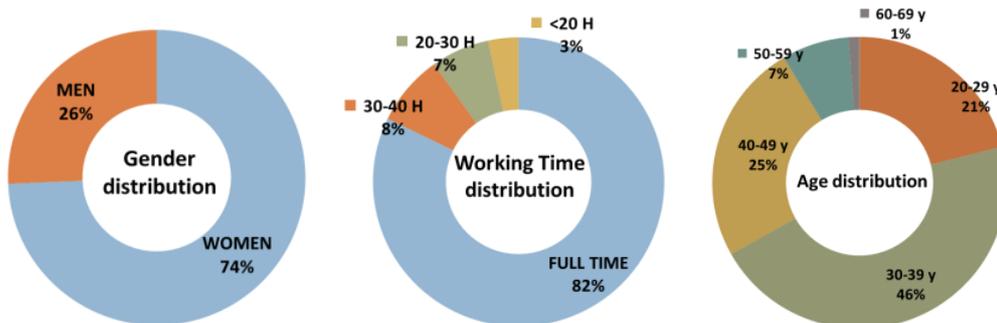
On the one hand are personnel directly employed by IDIBAPS or FCRB via different labour contracts, mainly full-time but occasionally part-time.

On the other hand, there are researchers (principal investigators) who are employed by HCB, UB, CSIC or some other entity and who are accredited or ascribed to IDIBAPS / FCRB in one way or another.

2.2.10.1 PERSONNEL BY LABOUR RELATIONSHIP

In 2017, 1.130 people worked at IDIBAPS / FCRB, representing 777 full-time equivalent positions. The difference between the two figures is due to some part-time positions.

FTE 2017 FULL TIME EQUIVALENT	EMPLOYEE FUNDACIÓ	EMPLOYEE IDIBAPS	TOTAL EMPLOYEE
MANAGEMENT	71,8	10,1	81,9
INFRASTRUCTURES	0,0	9,4	9,4
CORES FACILITIES	1,4	32,5	33,9
RESEARCH	318,4	333,5	651,9
TOTAL FTE	391,5	385,6	777,1

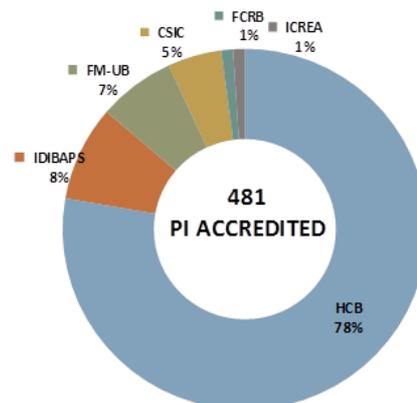


By nationality, 88.6% are Spanish. The other 11.4% come from 37 different and widely distributed countries, with Italy standing out with 3.7%.

2.2.10.2 IDIBAPS ACCREDITED RESEARCHERS

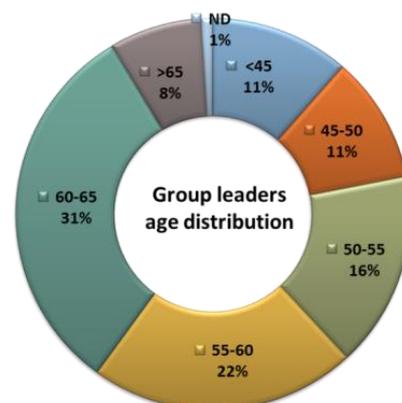
There are a total of 481 accredited IDIBAPS researchers, of whom 46 have an employment contract with IDIBAPS / FCRB and 424 do not have a direct work relationship with IDIBAPS (the majority of these are employees of HCB).

Additionally, there are HCB researchers who do not have the IDIBAPS accreditation, but still direct and manage their research activities through FCRB since they are linked to HCB. The number of these researchers (with research carried out at the FCRB above 1.000 euros which is considered the minimum amount of executed funds to be considered in these figures) was 153 in 2017.



2.2.10.3 GROUP LEADERS AGE DISTRIBUTION

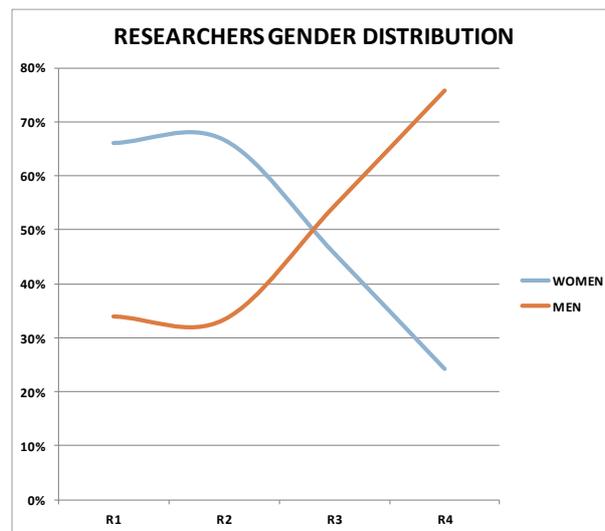
The age distribution of the research group leaders is presented in the following graph. An important feature is the very high percentage in the age band immediately preceding retirement.



2.2.10.4 RESEARCHERS AND LEADERSHIP GENDER DISTRIBUTION

The distribution by gender of researchers at IDIBAPS at different stages of their scientific career is shown below. This highlights the acute shortage of senior female researchers, which is a problem common to many research centres in the health sector in Barcelona.

The gender composition of various management structures at IDIBAPS is also shown below. The general low women representation in the majority of these structures has been identified as a key issue to be addressed.



GENDER IN MANAGEMENT	WOMEN	MEN	%WOMEN
Board of Patrons IDIBAPS	0	8	0%
Board of trustees FCRB	0	4	0%
Board of Patrons FCRB	0	6	0%
Scientific Advisory board	2	15	11,8%
Direction committee	5	3	62,5%
Advisory board of directors	13	17	43,3%
Research technical board (HCB)	5	15	25,0%
Research area leader	2	3	40,0%
Group leader	27	81	25,0%

2.2.11 BUILDINGS AND INFRASTRUCTURE

2.2.11.1 CURRENT BUILDINGS

IDIBAPS has two main buildings.

CEK (Centre Esther Koplowitz) has close to 14.000m² of which 9.200m² are laboratories and core facilities. The rest are areas of parking zones and public equipment. It was opened in October 2010, and part of its cost was covered by a contribution of the Esther Koplowitz Foundation and the Generalitat of Catalonia.

The CELLEX Building is part of the UB Building adjacent to HCB; it was rebuilt in 2013 and has 2.500m² of laboratories. Most of the cost was covered by Fundació CELLEX and Generalitat of Catalonia.

Overall, IDIBAPS occupies 16.500m² to host most of its research groups and core facilities.



Hospital Clínic and School of Medicine-Universitat de Barcelona



CELLEX building



Esther Koplowitz building



Instituto de Investigación Biomédica de Barcelona (CSIC)

2.2.11.2 FUTURE PLANS

CEK and CELLEX buildings have provided IDIBAPS with close to 12.000 square meters to allocate all the research groups in wet and dry labs. However, there is still a shortage of dry benches for bioinformaticians, statistics, administrative support and some investigators who use mostly computers for their work. Some spaces are available at Carrer Mallorca, carrer Còrsega and Urgell, but are not ideal because of the distance from main buildings and lack of natural light.

The Diputació of Barcelona in alliance with the Generalitat of Catalonia are remodelling 15.000m² at the Escola Industrial which is located less than one block from CEK building. 2.500m² will be given to IDIBAPS to allocate researchers working with computers, dry labs, and some more freezers from the IDIBAPS biobank. The renovation works are expected to finish by the beginning of 2020.

2.2.12 TECHNICAL SERVICES AND INFRASTRUCTURE

IDIBAPS has some common research support services, available to all IDIBAPS researchers. Five of these core facilities belong to IDIBAPS but Universitat de Barcelona at the Clinic Campus as well as Hospital Clínic, provide researchers with some complementary infrastructures.

IDIBAPS core facilities:

2.2.12.1 BIOBANK CLÍNIC – IDIBAPS

The Biobank is a centralised institutional support core facility for coordinating the collection, processing, storage and transfer of human biological samples to promote biomedical research of the highest standard. With the aim of optimising human resources and equipment in the Biobank, this facility offers a wide range of services for processing and analysis of samples gathered by research groups. All procedures performed at the Biobank are carried out under ISO9001 certification.

When it was first set up, the Biobank had a dual mission:

1. To provide the scientific community with standard, well characterised biological samples with high added value, in order to promote, foster and develop biomedical research in accordance with current legislation
2. To standardise all the Institute's research sample collections (in accordance with article 67 of Law 14/2007 and the Real Decreto RD1716/2011 related to Biomedical Research with human samples)

The bank's catalogue comprises samples collected by three large banks, each of them with extensive experience in research with human samples and which are available for scientific purposes for the consolidation of personalized medicine:

- a) **Neurological Tissue bank** - A nervous tissue repository (brain and spinal cord) created from donations from cadavers with or without neurological conditions, helping to facilitate research into neurological illnesses in order to improve diagnoses and enhance patient assistance.
- b) **Tumour bank and Anatomical Pathology Collections** - Repository of tumoural and non-tumoural tissue samples from patients affected by a neoplasia, as well as tissue samples from other diseases, all of them being surplus to diagnostic requirements from the Department of Anatomical Pathology in the Hospital Clínic. This material is essential to providing current large-scale tissue research projects with the samples they require.
- c) **Blood and Fluid bank** - This repository contains samples of metabolic, inflammatory bowel, oncologic, digestive, psychiatric and maternal and foetal diseases, among others. It houses a large range of samples of scientific interest, primarily DNA, serum and plasma, which are provided by physicians and laboratories where blood and fluid are taken for lab tests and blood and fluid donation.

2.2.12.2 FUNCTIONAL GENOMICS

The Genomic Unit of IDIBAPS provides access to different genome-wide protocols.

The unit manages samples for genomic projects starting from quantitative and qualitative analysis of nucleic acids up to genome-wide gene expression, genotyping gene dose analysis and sequencing using different platforms including real-time PCR, microarrays, and next-generation sequencing.

Services:

- Quantification of nucleic acids

- Qualitative analysis of nucleic acids
- Expression analysis by Real-time PCR
- Genotyping analysis by Real-time PCR
- Digital PCR (Fluidigm)
- Genome Wide Expression analysis (Affymetrix microarrays)
- Genome Wide Genotyping analysis (Affymetrix microarrays)
- High thought put expression analysis (GeneTitan Affymetrix)
- High thought put Genotyping analysis (GeneTitan Affymetrix)
- CGH-Arrays (Agilent)
- Scanner Axon 4000B
- Pyrosequencing
- Next generation sequencing (Miseq, Illumina)

In addition to these services, the unit offers advice on experimental design for transcriptomic studies, on extracting RNA and on analysis of microarray data.

2.2.12.3 FLOW CYTOMETRY AND CELL SORTING

Flow cytometry is a technique for multiparametric analysis of particles, such as cells, by suspending them in a stream of fluid and passing them through a laser. It allows simultaneous multiparametric analysis of the physical and/or chemical characteristics of up to thousands of particles per second. Each suspended particle passing through the beam scatters the laser, and fluorescent chemicals found in the particle or attached to the particle may be excited into emitting light at a longer wavelength than the light source.

Fluorescence-activated cell sorting is a specialized type of flow cytometry. It provides a method for sorting a heterogeneous mixture of biological cells, one cell at a time, based upon the specific light scattering and fluorescent characteristics of each cell. It provides fast, objective and quantitative recording of fluorescent signals from individual cells as well as physical separation of cells of particular interest.

This technology has applications in molecular biology, pathology, immunology, plant biology and marine biology. It has broad application in medicine (especially in transplantation, hematology, tumor immunology and chemotherapy, prenatal diagnosis, genetics...).

The Facility is subdivided into three rooms: FACS analysis and high resolution images in flow room, data analysis room and cell sorting room.

2.2.12.4 MAGNETIC RESONANCE IMAGING

This core facility is equipped with a PRISMA 3 Teslas for humans and a 7 Teslas for small animals. In 2017, the 3TS machine was upgraded with a more powerful magnet which enables better images.

The main objectives of this Core Facility are:

1. To provide services related to medical imaging techniques for researchers from IDIBAPS and other institutions, and to industries connected with health.
2. To perform first-rate basic and clinical research into medical imaging using structural and functional magnetic resonance imaging, magnetic resonance spectroscopy, molecular imaging, other types of medical imaging and image processing.
3. Researcher training in techniques and basic research to enable them to conduct experimental and clinical studies, thereby allowing them to explore the advantages of translational research.

2.2.12.5 BIOMEDICAL STATISTICS

The Biomedical Statistics core facility provides methodological and statistical support for IDIBAPS research projects and those of allied institutions. Depending on the project and the availability, the core facility may provide support to external public and private bodies.

The main objective is to promote clinical research excellence and facilitate resources to achieve this.

The Biomedical Statistics core facility was created in 2007 and currently collaborates in:

- Projects and assessments: Involvement in 240 projects annually from 125 clients.
- Spanish Clinical Research Network: Coordination of the Methodology, Biostatistics and Data Management Program of the Spanish Clinical Research Network (SCReN), which is financed by the ISCIII to promote independent clinical research.
- Clinical Research Ethics Committee: executive meetings and evaluations of all clinical trials in our center.
- Teaching: Degree courses in Medicine, Biomedicine, Statistics and Science and Food Technology, Autonomous University of Barcelona (UAB). Masters and specific courses on statistical methodology and data management, both for our institutions as well for external organisations.
- European Clinical Research Network: Collaboration with and integration in the ECRIN European network. Spanish representative in the data management group. Participation in the Independent Certification Board (ICB). Permanent external reviewer of ECRIN standard operating procedures.
- Scientific and statistical scientific and regulatory activities: Assessors of the Spanish Medicines Agency (AEMPS). Member of the Scientific Council of the Scientific Advice Working Party (SAWP) and the Biostatistics Working Party (BSWP) of the European Medicines Agency (EMA).
- Scientific journals: Associate Editor of *Trials*. Statistical Advisory Board of *PlosOne*. Peer reviewers of various journals (*Journal of Biopharmaceutical Statistics*, *Clinical Rheumatology*, *Trials*, *European Journal of Clinical Pharmacology*, *Medicina Clínica* (Barcelona), *Archivos de Bronconeumologia*, etc.)

2.2.13 SHARED FACILITIES

IDIBAPS has an agreement with its consortium partners to optimise investments in infrastructures so duplicities are avoided and a wider spectrum of scientific services can be offered to the community. A number of facilities operated by the consortium partners are therefore available to IDIBAPS researchers:

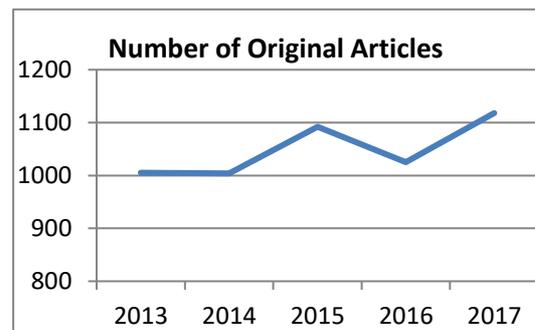
- Advanced Optical Microscopy Unit (CCiT-UB)
- Proteomics Unit (CCiT-UB)
- Animal house (CCiT-UB)

- Library CRAI-UB (Centre de Recursos, Aprenentatge i Investigació)
- Electron microscopy (CCiT-UB)
- Evaluation, Support and Prevention Unit (HCB).

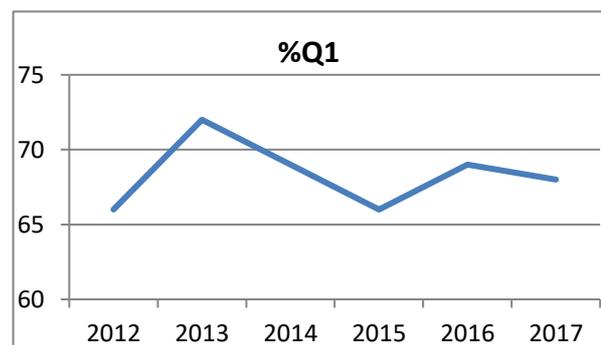
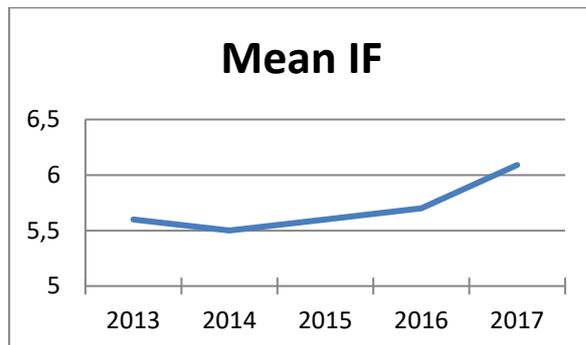
2.3 RESEARCH ACTIVITIES AND RESULTS

2.3.1 SCIENTIFIC PUBLICATIONS

IDIBAPS publishes each year around 10% of all scientific publications of the Catalan region (20.000 articles in the period 2012-2014). On average over the last five years, IDIBAPS published around 1.000 original articles, 200 reviews, 40 editorials, 40 clinical guidelines, 40 case reports, 100 letters and 50 consortium publications each year.



Over the years, the average quality of research published has been increasing as demonstrated by the mean impact factor, the percentage of Q1 and D1 papers and the number of published papers in high impact journals (IF>10). However, IDIBAPS is still some way from achieving the excellence criteria of having at least 75% of published articles in the first quartile (Q1).



In terms of scientific publications, it is worth mentioning that, according to Clarivate Analytics index (2017) which identifies the leaders of the most influential articles, 8 of these scientists belong to IDIBAPS, making it the Spanish institution with the highest number of such scientists in the field of Health.

2.3.2 COMPETITIVE RESEARCH PROJECTS

IDIBAPS' researchers have traditionally been very good at obtaining competitive funding. The success rates are usually above average for the respective calls. As shown in the table, currently there are 605 active competitive grants, both national and international. According to CDTI, IDIBAPS has been the most successful Spanish Research Institution to date in getting H2020 program funds in the Health area (http://eshorizonte2020.cdti.es/recursos/doc/Programas/Cooperacion_internacional/HORIZONTE%2020/43596_235235201716543.pdf).

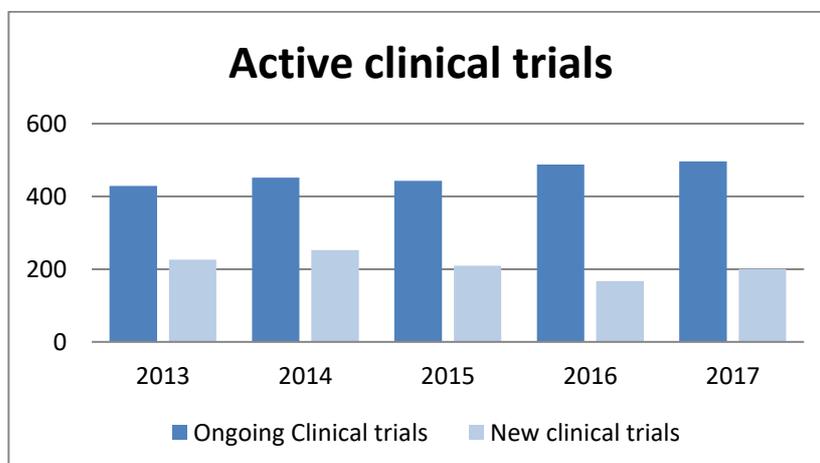
RUNNING PROJECTS	
COMPETITIVE GRANTS	605
NATIONAL	504
FIS	292
MINECO	85
PERIS	32
LA MARATO DE TV3	27
AGAUR	15
AECC	6
ALTRES	47
EUROPEAN	68
H2020	35
FP7	8
EIT	7
IMI	5
ERC	2
OTHERS	11
INTERNATIONAL	33
MICHAEL J. FOX	5
NIH	3
NARSAD	3
MARFAN	2
OTHERS	20

2.3.3 CLINICAL TRIALS

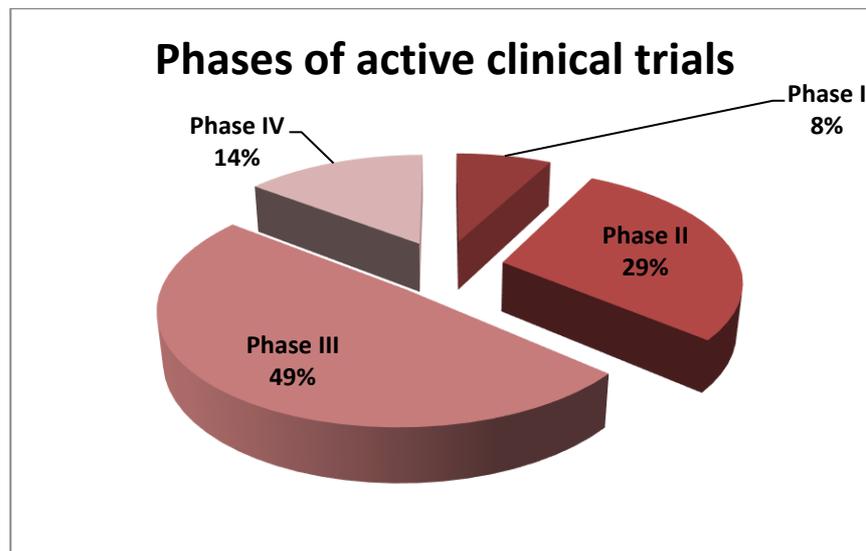
IDIBAPS and HCB constitute the ideal setting for completing a number of crucial steps in the development of new medical products. Basic biomedical research and applied clinical research, together with specialised healthcare practice, are aspects of IDIBAPS that are very useful for the development of new drugs.

Clinical trials promoted by industry are all managed by FCRB.

In the period 2013-2017 around 470 recruiting clinical trials were active. After a slight decrease during 2015 and 2016, in 2017, the number of commencements of new clinical trials started to recover, reaching 201 for the year 2017.



Almost half of all clinical trials performed at IDIBAPS-HCB are of Phase III (63%), whereas phase II represent 29%, phase IV 15% and phase I 7%.



2.4 INNOVATION AND TRANSLATION ACTIVITIES

To date, IDIBAPS innovation and translation of research results into clinical practice and contribution to health innovation have been good, although the potential in such a big community of researchers with such high scientific excellence is enormous and should improve in the coming years.

IDIBAPS has a KTT (Knowledge and Technology Transfer) office that supports researchers in the protection of results by patents or other protection agreements, spin-off creation, IPR policies in their agreements with companies and industry, MTA (Material Transfer agreements) and CDA (Confidential Disclosure agreements), revision of IPR clauses, etc.

Innovation and translation activities tend to be concentrated in relatively few research groups. Therefore, IDIBAPS has identified the need to promote an innovation culture to all research groups. The KTT office should actively participate in this change of culture. Also, IDIBAPS must implement relevant indicators and researchers should be objectively evaluated and rewarded for innovation activities as well as scientific results.

2.4.1 IP PORTFOLIO AND COMMERCIALISATION

As at July 2018, IDIBAPS portfolio comprises:

- 52 patent families
- 38 license agreements
- 9 spin-off companies

During 2017 IDIBAPS researchers filed 12 patent applications (5 priority patents and 7 PCTs) and 1 entered in National Phases in several countries. Additionally, 6 new license agreements were signed with local and international companies.

- Two Patents were licensed to the spin-off FreeOx
- One Patent was licensed to the spin-off BLB
- A Monoclonal antibody was licensed to an international company
- One Patent was licensed to the spin out Galgo Medical
- A proprietary software was licensed to a national company

PORTFOLIO OF SPIN-OFFS

The activity of IDIBAPS researchers gave rise to 2 new companies in 2017 based on the knowledge from IDIBAPS/HCB: FreeOx and BLB.

IDIBAPS researchers have founded 10 spin-offs since 2008, 9 of which are active companies that together employ more than 50 people. Most of these companies are initially funded through competitive strategies such as Caixaimpulse from La Caixa; Llabor, Producte from the Generalitat de Catalunya or programs such as those promoted by Biocat and if successful, by venture capital companies such as La Caixa Capital Risk and private companies. It is worth mentioning that one of the companies, Transplant Biomedicals, raised more than one million Euros in 2017. However, to date, none of these companies have generated revenues to IDIBAPS.

2.4.2 CLINICAL GUIDELINES

As a translational biomedical research center in consortium with HCB, IDIBAPS considers the development of Clinical Guidelines to be a significant transfer of knowledge into clinical practice.

IDIBAPS has a strong track record of generating clinical guidelines with strong impact factors.

Clinical Guidelines

	Number	%Q1	Average IF
2013	38	50	5,9
2014	27	48	4,5
2015	22	50	5,9
2016	39	64	5,9
2017	39	69	7,67

2.5 COMMUNICATION AND OUTREACH ACTIVITIES

Following 3 years of vacancy, IDIBAPS reopened the Communication Office in September 2016 responding to the need to disseminate research results, make science closer to citizens, make IDIBAPS results better known among society and stakeholders and improve internal communication. Since then many activities have been organised.

2.5.1 INTERNAL COMMUNICATION

- A new corporate email was created: IDIBAPS.comunicacio@idibaps.org to disseminate all the official news and events.
- A weekly newsletter called *IDIBAPS al dia* was launched. The newsletter is sent by email every Friday (45 issues in 2017). This newsletter informs about internal news, scientific interesting news and agenda.
- In 2017, a *Welcome pack* was designed and distributed to all the scientific community. This small guide, shows who is who in the organisation and is a brief guideline to the scientific and management organization of IDIBAPS. In 2018 this welcome pack has been updated and will be distributed to all new people.
- Scientific seminars are continuously organised at IDIBAPS. There are several types of seminars: the institutional ones, the *IDIBAPS seminars* are given by external scientists whereas the *In House seminars*, are given by internal researchers. Other seminars are more area specific: *IDIBAPS core facilities seminars*, *Campus Clinic Cancer seminars*, *IDIBAPS neuroscience seminars* and *IDIBAPS Liver seminars*. The number of seminars has increased progressively for the last five years. In 2013, 11 seminars were held and in 2017 the number increased to 42. Attendance to these seminars remains constant, around 65 for the IDIBAPS seminars and 50 for the rest.

2.5.2 SOCIAL MEDIA

IDIBAPS has accounts in Facebook, Twitter and LinkedIn.

- Facebook: 1.236 likes in 2016; 1.739 likes in 2017
- Twitter: 4.759 followers in 2016; 6.456 followers in 2017
- LinkedIn: 394 followers in 2016; 937 followers in 2017

2.5.3 PRESS

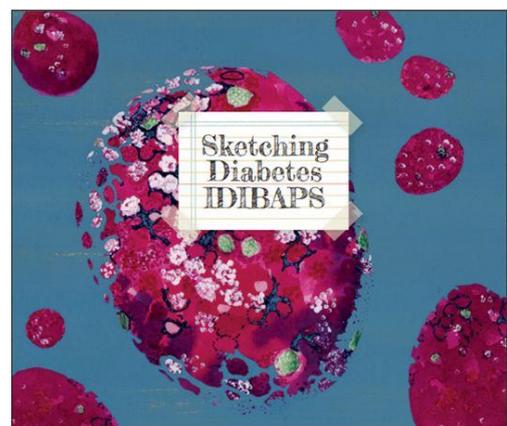
IDIBAPS disseminates its work to the media through press releases (38 in 2017) and through specialised reports. In 2017, 51 press petitions were attended making IDIBAPS appear in more than 500 news (this number is approximate because IDIBAPS does not have a clipping tool).

2.5.4 OUTREACH ACTIVITIES

High School Students: IDIBAPS opens its doors to students through the program Escolab promoted by Ajuntament de Barcelona. In 2017, 6 visits were organised so nearly 200 young students from several high schools could visit the laboratories and facilities. Also, through the program *Bojos per la ciència* from Fundació La Pedrera, 60 young students attended a series of seminars on the most important topics of biomedicine during 11 saturday mornings. Finally, during Brain Week, 42 students visited IDIBAPS.

Adults: IDIBAPS organises every year an Open Day for families and friends of its employees. In 2017, 300 people of all ages visited IDIBAPS. Also, three times per year, IDIBAPS with la Fundació La Marató de TV3, organises a visit for citizens so they can visit the laboratories and one of the researchers benefiting from a project of Marató, shows them the results from the project he or she is doing. Overall, in 2017, more than 800 citizens visited IDIBAPS and got close to science and scientists.

Seminars for citizens: Many scientists from IDIBAPS



participate in several seminars and round tables all around Barcelona. IDIBAPS leads one of the programs organised by Centre Civic Urgell, a civic center located closeby. In 2017, the program called *A la recerca de la salut*, comprised 10 seminars about good habits to promote prevention of diseases.

Sketching: IDIBAPS has edited two sketching books to show citizens what IDIBAPS is and also explain Diabetes and what research is being performed in IDIBAPS to better treat this disease. To make the drawings, several sketchers were invited to make their drawing while scientists were working. IDIBAPS is now working on a new sketching book about Parkinson and Alzheimer diseases.

2.6 KEY COLLABORATIONS AND NETWORKS

As a Spanish public research institution, IDIBAPS belongs to all the national public research networks:

2.6.1 NATIONAL

The Instituto de Salud Carlos III (ISCIII) funds two kinds of networks to promote national collaborations and synergies among researchers of the same scientific area. Those networks are the RETICs (Redes temáticas de investigación cooperativa en salud): which are networks of centers and Research groups, of multidisciplinary nature, to promote cooperative Research, and the CIBERs. IDIBAPS researchers belong to several of these networks.

CIBERs: these are networks under the form of independent consortia, to promote excellent research from public Research centers in those prioritised scientific areas in the public Health system. IDIBAPS researchers belong to many CIBER and one of its researchers is the director of the CIBEREHD (Hepatology) and another is director of CIBERSAM. Overall 32 PI are leading CIBER groups.

- Enfermedades hepáticas y digestivas (Ciberehd).
- Enfermedades raras (Ciberer).
- Epidemiología y salud pública (Ciberesp).
- Bioingeniería, biomateriales y nanomedicina (Ciberbbn).
- Diabetes y enfermedades metabólicas (Ciberdem).
- Fisiopatología de la obesidad y la nutrición (Ciberobn).
- Salud mental (Cibersam).
- Enfermedades respiratorias (Ciberes).
- Fragilidad y Envejecimiento saludable (Ciberfes)
- Enfermedades Cardiovasculares (Cibercv)
- Oncología (Ciberonc)
- Enfermedades neurodegenerativas (Ciberned).

Participation of IDIBAPS groups in Spanish RETICs:

- Red Española de Esclerosis Múltiple (REEM)
- Red de investigación en inflamación y enfermedades reumáticas (RIER)
- Red de Salud Materno Infantil y del Desarrollo (REDSAMID)
- Red de Terapia Celular (TERCEL)
- Red de Investigación en Enfermedades Infecciosas (REIPI)
- Red de Enfermedades Oculares (OFTARED)
- Red de enfermedades Vasculares Cerebrales (INVICTUS)
- Red de investigación en Asma, reacciones alérgicas y adversas (ARADYAL)

Also, IDIBAPS participates in other national networks promoted and funded by ISCIII: ITEMAS (Medical Technology Innovation Platform), RED NACIONAL DE BIOBANCOS (National network of biobanks) and SCREN (Spanish Clinical Research Network).

SCReN is a support structure for clinical research and, in particular, multi-center trials, consisting of 29 research units (UICECs) distributed by hospitals across the NHS, which provides services in the methodological support, pharmacovigilance, statistics and data management as well as overall project management, monitoring and administrative management.

ITEMAS is the Medical Technology Innovation Platform which aims to integrate innovation within the Research centers in the context of the national Health System to make it more sustainable.

RED NACIONAL DE BIOBANCOS was created to promote the quality of science. 52 entities belong to the network making it the largest network. Hospital biobanks, regional networks, Biomedical Research institutes and university biobanks all along the country belong to this network.

2.6.2 LOCAL

At the regional level IDIBAPS was distinguished with the TECNIO seal from the ACCIO agency from the Catalan Government as an entity that facilitates innovation in the health research system. Also, IDIBAPS belongs to, and acts as a coordinator of the local Xarxa de bancs de tumors (Catalan network of tumor biobanks).

2.6.3 INTERNATIONAL

At the international level, all recognition is due to the individual or group internationalisation of IDIBAPS researchers, many of whom are very well known and respected, as may be seen by the great amount of international collaborations that appear in their publications.

IDIBAPS has identified the need to improve its international institutional promotion and positioning.

2.7 EDUCATION ACTIVITIES

Even though IDIBAPS was not originally meant to be an educational centre, its educational role is significant. This has developed due to the synergies between IDIBAPS and its consortium partners, in particular the UB's School of Medicine and Health Sciences whose campus is located close to HCB and to IDIBAPS. Many principal investigators at IDIBAPS are clinician scientists with clinical practise at HCB, and are also teachers at the UB School of Medicine.

In the context of these synergies, IDIBAPS hosts around 400 predoctoral students who defend more than 100 doctoral theses every year.

Predoctoral students are offered their scientific education in the research groups of IDIBAPS. Additionally, an educational programme in non-scientific skills called Stepping Stones was created for them in 2016.

The UB also offers the IDIBAPS mentoring program for predoctoral students to all its predoctoral biomedical students.

IDIBAPS research groups also host more than 100 master students every year.

2.7.1 STEPPING STONE PROGRAM

The Stepping Stone program (<http://www.idibaps.org/research-career/steppingstone.html>) is a training programme that seeks to provide predoctoral (R1) and postdoctoral (R2) researchers at IDIBAPS with non-scientific tools and skills which are key for the development of their careers. Courses offered in 2016-17 include:

- Making the most of your presentation- 13/12/2016
- Career options beyond the bench and after the PhD- 25/01/2017
- Job seeking in Barcelona 360º- 28/02/2017
- Get ready for your job interview! – 06/04/2017; 19/04/2017; 24/04/2017
- Tools for efficient scientific writing - 25/05/2017
- Fundamentals on Knowledge and Technology Transfer- 29/06/2017
- Programme 2017-2018:
- Time management for researchers - 18/12/2017
- Effective team playing- managing relationships in the workplace - 06/02/2018
- Grant and proposal writing for scientists - 18/04/2018; 19/04/2018; 20/04/2018
- Research integrity: can we scientists trust ourselves? - 12/06/2018
- Why and how to increase the social impact of your R&I?-15/10/2018

This programme has been warmly received by the IDIBAPS community with a high number of attendees and high level of satisfaction (a satisfaction survey is performed at the end of each session).

2.7.2 SCIENTIFIC SEMINAR PROGRAM

IDIBAPS hosts six different types of seminars for all the scientific community:

- Institutional seminars or IDIBAPS seminars: relevant national and international scientists are invited every month to give a plenary session.
- In-House seminars: IDIBAPS researchers give a plenary session
- Core facilities seminars: coordinators of each core facility give a seminar to show new services or new technological advances
- Cancer Seminars, Neurosciences Seminars and Liver Seminars are topic specific seminars organized by each scientific area.

Overall, in 2017, IDIBAPS hosted 42 seminars.

2.7.3 SCIENTIFIC CAREER MENTORING AND SUPPORT

IDIBAPS has a **Mentoring Committee** to support researchers in their tenure track to improve their scientific productivity, international visibility and leadership skills. Each researcher meets the committee once a year and receives an Evaluation Summary Report summarising their strengths and weaknesses.

IDIBAPS also has a **Physicians and Research Committee** to support young clinician scientists. All the members of this committee are clinician scientists, one being emeritus, one junior, and the others seniors. This committee was created in 2017 to address the need of young clinician scientists who are not expected to achieve the same goals as the young translational/basic researchers devoting only part time to research. Each young clinician scientist (50/50 programme) meets the committee once a year and receives an Evaluation Summary Report summarising their strengths and weaknesses.

3 ANALYSIS

3.1 SWOT ANALYSIS

A summary of the analysis of strengths, weaknesses, opportunities and threats (SWOT) is given here. A detailed account of each of the factors is provided in Appendix 1: SWOT Analysis.

In summary, the main strengths of IDIBAPS come from its consolidated excellent research teams, world-class infrastructure, and strong reputation. Weaknesses arise mainly from institutional and internal organisational complexity and the aging profile of leading researchers. The main threats are potential failure to attract young, renovating talent and difficulties in maintaining funding levels. The main opportunities are potential ways to address the aforementioned weaknesses and threats.

3.1.1 STRENGTHS

1. High critical mass of motivated and experienced researchers
2. Consolidated groups with international leadership
3. Multidisciplinary across strategic research lines
4. Consolidated scientific leadership
5. National leadership in capturing international competitive funding
6. Excellent operating environment with world-class facilities
7. Good governance and professional management

3.1.2 WEAKNESSES

1. Imbalanced age, gender and profile distribution of researchers
2. Difficulty in capturing / retaining talent
3. Low institutional capacity to manage contracts and stays of international researchers
4. Need to improve the number of publications in high rank journals Institutional complexity
5. Low institutional internationalisation and low international recognition of Clinic trademark
6. Research group organisation
7. Overloaded management
8. Shortage of laboratory spaces and aging equipment

3.1.3 OPPORTUNITIES

1. Promote talent and excellence
2. Synergies from institutional reform and merger

3. Secure new resources

3.1.4 THREATS

1. Conceptual and technological changes in biomedical research to which IDIBAPS has limited capacity to adapt (Big-data, open-data, new technologies, animal research, ...)
2. Loss of talent and leadership
3. Political actions and environmental conditions affecting funding for scientific research
4. Increasing complexity and responsibility of management

3.2 INTERNATIONAL COMPARISON

The objective of the international comparison is to compare IDIBAPS with relevant international centres of reference, both as a benchmarking exercise to determine the relative performance, and also to identify world-leading best practise in these international centres in order to emulate or adapt such best practise into IDIBAPS.

Although a superficial international comparison can be made by comparing publicly available information, such as that contained in publication records, annual reports and websites, the most useful comparison is made through a bidirectional dialogue with the management of the reference centres, which permits sharing of more confidential and detailed information. Ideally this should also involve a physical visit to the reference centre in order to see first hand how best practise methodologies are developed and implemented.

The information presented here is a compilation of previously performed international comparisons based on desktop studies. While certain conclusions may be drawn from these, it is evident that a more comprehensive comparison would be of significant benefit. An action of this strategic plan is to explore a more detailed comparison with key international reference centres, so that some additional insights will be available for the next strategic planning period.

3.2.1 BIBLIOMETRIC BENCHMARKING

Two different bibliometric analyses are available to compare IDIBAPS scientific publications with other health research centres in Spain and internationally:

- the SCImago rankings based on the Scopus database, and
- an analysis performed on data from World of Science (WOS) for the period 2013-2017 to compare biomedicine research institutions from two bibliometric points of view: the percentage of articles with no citations and the mean of citations by article. These indicators show the impact of the scientific publications in the worldwide Science community.

3.2.1.1 INTERNATIONAL RANKING

Some years ago, institutional performance rankings were available at SCImago and individual indicators could be compared amongst institutions. Currently, SCImago only makes available the ranking but not the individual indicators.

According to SCImago institutional ranking of 2018 (Note: data from 2018 correspond to the first semester), Hospital Clinic of Barcelona ranks 367 among the health research centers of the world and

IDIBAPS ranks 390. Both have trended increasing in ranking over recent years (<https://www.scimagoir.com/institution.php?idp=61665>).

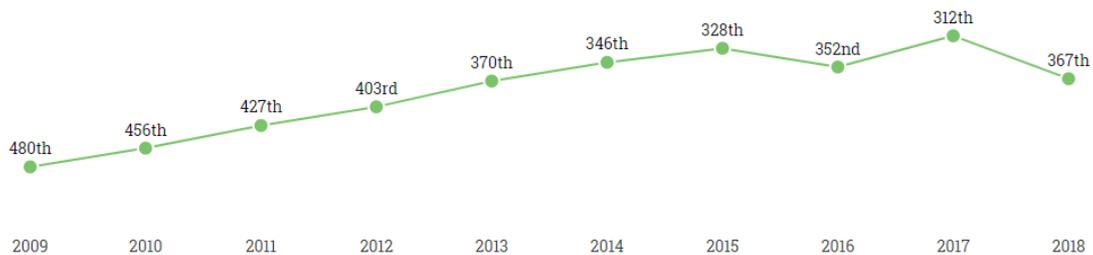
IDIBAPS Scimago World Rank Evolution

Overall Rank



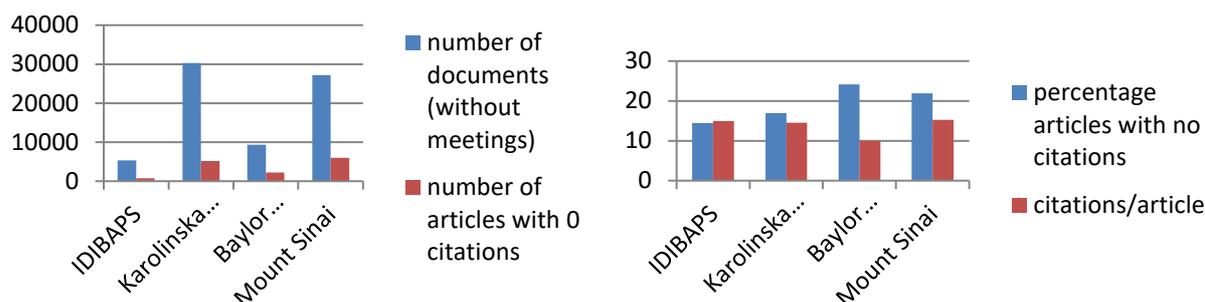
Hospital Clinic Barcelona Scimago World Rank Evolution

Overall Rank



The WOS analysis for 2013-2017 included a number of reference International centres. The comparison with IDIBAPS is presented in the table and chart below. In terms of quality of its scientific publications, IDIBAPS measures very favourably against all the reference institutions.

Institution	number of documents (without abstracts)	number of articles with 0 citations	percentage articles with no citations	citations/article	H index
IDIBAPS	5302	766	14.45	14.93	102
Karolinska (science technology)	30329	5147	16.97	14.55	91
Baylor College of Medicine	9353	2259	24.15	9.94	95
Mount Sinai	27220	5961	21.89	15.27	97



3.2.1.2 NATIONAL RANKING

According to the WOS analysis for 2013-2017, at the national level IDIBAPS ranks first in scientific publications amongst the Accredited Institutes (IIS) being those research institutes linked to a hospital, and fourth if research centres not associated to a hospital are considered also (CNIO, CRG and IRB are the best three performing institutions).

Institution	number of documents (without abstracts)	number of articles with 0 citations	percentage articles with no citations	citations/article	H index
CNIO	1024	126	12.3	22.96	64
CRG	1209	181	14.97	15.07	57
IRB	618	69	11.6	15.91	44
IDIBAPS	5302	766	14.45	14.93	102
IDIPAZ	1732	355	20.49	11.28	53
GREGORIO MARAÑÓN	3876	1121	28.92	8.31	62
Fund. Jiménez Díaz	2039	538	26.38	11.58	53

3.2.1.3 REGIONAL RANKING

If all Catalan CERCA centres that perform at least some biomedical research are compared, IDIBAPS is still the centre that publishes the highest number of articles but the basic science oriented centres (CRG, IRB, ICIQ, ICFO) and VHIO perform better in terms of citations per article as seen in the following table:

Institution	Period	Number of documents (without meeting abstracts)	Number of articles with 0 citations	percentage of articles with 0 citations	citations/article	H Index
IDIBAPS	2013-2017	5302	766	14.45	14.83	102
IDIBELL	2013-2017	2784	396	14.22	11.63	61
VHIR	2013-2017	1577	275	17.44	12.97	55
IGTP	2013-2017	266	55	20.67	8.36	23
IIB Sant Pau	2013-2017	2949	664	22.52	12.37	65
IMIM	2013-2017	3816	659	17.26	14.16	77

VHIO	2013-2017	310	34	10.96	25.14	45
CRG	2013-2017	1209	181	14.97	15.07	57
IRB	2013-2017	618	69	11.16	15.91	44
ICIQ	2013-2017	804	40	4.97	15.84	63
ICFO	2013-2017	1231	130	10.56	19.61	68

3.3 SUSTAINABLE COMPETITIVE ADVANTAGES

IDIBAPS has a number of sustainable competitive advantages that need to be maintained, promoted, and improved, particularly in a context of social and economic changes:

3.3.1 CAMPUS CLINIC

- Strong complementarity of the institutions in the Campus Clinic working in Health Sciences (Clinical assistance, Education and Research):
 - Integration of IDIBAPS with HCB, School of Medicine and Health Sciences of the UB, CSIC, and Primary Medicine Centers (Centre d'Atenció Primària en Salut Barcelona Esquerra, CAPSBE) that facilitated the constitution of IDIBAPS as one of the first Institutos de Investigación Sanitaria (IIS) del Instituto de Salud Carlos III.
 - Close collaboration between the Executive Management and Boards of the different Institutions.
 - Complementarity of the Research Core Facilities managed by IDIBAPS and UB.
- Association with HCB, a Hospital that was pioneer in Spain promoting biomedical research activity and has a long established culture of considering research as an essential feature of clinical practice:
 - 1% of the salaries of physicians is donated for two programs of post-residency research, the post-residency awards and 3-year research contract, and for Extramural Sabbaticals for permanent staff professionals.
 - Professional career that considers research achievements as an essential element for promotion.
 - High motivation of professionals to develop clinical and research activities of high quality
 - Large repositories of clinical data and samples, frequently included in clinical cohorts fully annotate. Increasing improvement of electronic access to the data.
- HCB has a high quality clinical activity that generates large amount of information and biological samples from patients that are a privileged resource for biomedical research.
- High number of professional in IDIBAPS considered with national and international leadership in their respective fields.
 - High number of collaborations in publications and grant applications.
 - Participation in high number of guidelines and key opinion publications.
- Strong and experienced organisation (FCRB) in the management of Science.

3.3.2 CATALONIA AS A BIOMEDICAL RESEARCH HUB

Catalonia, and particularly Barcelona metropolitan area, has a strong organisation of research centers (CERCA) that, together with the regional health system, provides a complementary environment fostering biomedical research. Strategic alliances with some of these institutions (e.g BSC, CNAG, ALBA, among others) may enhance the research performance of IDIBAPS.

3.4 SOCIO-ECONOMIC IMPACT ANALYSIS

As socio-economic impact analysis of biomedical and hospital research centres in Catalonia was performed by the Chamber of Commerce and AQuAS in 2014. This showed that the sector as a whole was having significant impact, with IDIBAPS one of the leading performers in both volume and quality of impacts.

However, the level of detail of the analysis was insufficient to draw any significant conclusions that would affect operational decisions. During the period of this Strategic Plan, IDIBAPS will work with CERCA, AQuAS and other relevant entities to develop more systemic methodologies to measure impact and thereby focus activities in order to maximise it.

4 STRATEGIC PLAN 2018-2022

4.1 STRATEGIC OBJECTIVES

Considering IDIBAPS' overall Mission and Vision, the strategic direction of HCB, International and Spanish R&D priorities, the current context of institutional organisation and priorities of the Catalan government, IDIBAPS' core strategic objectives for the period of this plan are:

4.1.1 CONSOLIDATE EXCELLENCE IN TRANSLATIONAL BIOMEDICAL RESEARCH

To drive a culture of excellence throughout the organisation in order to achieve internationally recognised scientific impact and technology translation, with particular focus on effective organisation and management of people and resources, leadership in project consortia, optimisation of processes, and quality training of young scientists.

4.1.2 ATTRACT AND RETAIN TALENT IN ALLIANCE WITH HCB

To provide an internationally attractive and competitive work environment, creating an inspiring workplace with a strong sense of community, that offers recognition and career advancement for achievement in both research and translational activities and thereby attracts and retains talent at a global level. To work on long-term strategies with HCB to achieve a sustainable and stable profile of researcher cohort, with particular regards to age, experience and gender.

4.1.3 ACHIEVE IMPACT IN CLINICAL PRACTICE THROUGH INNOVATION AND TECHNOLOGY TRANSFER

To foster a culture of innovation, in particular as regards to improving clinical practice, to achieve positive impacts in healthcare both locally and worldwide. To create an operational environment that facilitates innovation and technology transfer, including reducing administrative barriers for licensing and spinoff activities, and extending collaborations with leading companies.

4.1.4 CONSOLIDATE AND STABILISE RESOURCES AND INFRASTRUCTURES

To extend and stabilise funding sources to facilitate long term planning for human resources and technical infrastructures, in particular through securing longer-term structural funding commitments and diversifying funding sources, including donations and untapped funding schemes. In parallel, to optimise internal processes, organisational structures and the allocation of resources to improve productivity and support the achievement of other objectives.

4.1.5 INCREASE THE PROFILE OF IDIBAPS

To grow and consolidate the IDIBAPS-HCB profile locally, nationally and internationally, proactively developing strategic alliances with relevant complementary reference centres and taking leadership roles in national and international fora, thereby establishing IDIBAPS' authority as a reference for cutting-edge advancements and information on health technologies.

4.1.6 PLAN AND IMPLEMENT THE MERGER WITH FCRB (SUMA)

To agree, plan and implement the organisational merger of IDIBAPS and FCRB in a positive atmosphere that drives improved staff moral and performance across the two entities and with minimal disruption to ongoing activities.

4.2 STRATEGIC ACTIONS

Priorities: The above objectives will be achieved by implementing the following actions, in broad order of priority. The last action, related to the merger between FCRB and IDIBAPS, will be progressed with priority at the political level in parallel with the other actions.

Timeline and Budget: Each action has an expected timeline and, where needed, indicative additional budget required for implementation. Given that IDIBAPS is currently not able to fix future budgets with any certainty beyond a one-year timeframe, all actions that require additional resource are regarded as provisional until such time as adequate resource can be assigned to them.

4.2.1 DRIVE EXCELLENCE IN RESEARCH

The challenge for IDIBAPS is to improve research and its reflection in key scientific indicators and to consolidate its scientific leadership in national and international fora, both of which are crucial to accessing national and international resources, whilst fostering strong multidisciplinary and translational characteristics in its research activities. This directly addresses *Objective 1 – Consolidate Excellence in Translational Biomedical Research* and contributes to all the other objectives.

There is no one simple action that will on its own deliver these outcomes. This plan sets out a series of actions that in the mid-term should drive towards strong improvements in these key areas.

4.2.1.1 RECOGNISE AND REWARD EXCELLENCE

A well-established mechanism for driving institutional goals is to recognise and reward the desired behaviours/actions. Although excellence criteria have always been involved in processes at IDIBAPS, their implementation in a systemic and consistent manner across the full range of decision making at IDIBAPS is expected to, over time, drive the development of a much stronger culture of excellence.

4.2.1.1.1 IMPLEMENT CRITERIA OF EXCELLENCE CONSISTENTLY ACROSS THE ORGANISATION

The generic criteria to be applied (with adaptation as appropriate for each situation) to any proposed action or evaluation shall be:

1. How will the action contribute to improving IDIBAPS' scientific excellence (publications, other metrics?)
2. How will the action contribute to improving IDIBAPS' ranking in key performance metrics (number of ERCs, patents, competitive funds, etc ... i.e. what do CERCA? SEVERO OCHOA? CarlosIII? etc require?)

3. How will the action contribute to positioning IDIBAPS as a leader in the relevant area?
4. How will the action generate impact (clinical, scientific, social)?

These questions will be incorporated into all internal decision making processes and committees, including spending approvals, performance evaluations, organisational restructure, travel requests, events, etc.

Activities which do not contribute to these criteria will not be supported institutionally, and in some cases may be actively discouraged. This may include publishing in lower-ranked journals, hosting visitors of mediocre profiles, etc.

Timeline: the criteria should be incorporated into all key decision making processes with 6 months of approval of this Strategic Plan.

Responsibility: IDIBAPS Director's Office.

4.2.1.1.2 COMMUNICATE CULTURE OF EXCELLENCE ACTIONS

The implementation of the above criteria into decision making at IDIBAPS, and other related actions, are not an end in themselves, but rather a mechanism to drive cultural change. They must therefore be introduced in a manner in which the end objective is well understood and accepted.

An internal communication plan must therefore be developed and implemented to explain the reasoning behind the changes and ensure that the actions derive in positive and constructive behaviours and not negative and defensive behaviours.

The communication plan should also celebrate success, ensuring that any news on highly cited publications, new grants, or other high impact results are widely known and publicly lauded.

Timeline: The Culture of Excellence communication plan should be prepared in parallel to the development of this strategic plan, and commence implementation as soon as this Strategic Plan is approved.

Responsibility: Communication Department.

4.2.1.1.3 INTEGRATE EXCELLENCE CRITERIA INTO THE RESEARCHER CAREER AT IDIBAPS

The current systems for evaluation and promotion at IDIBAPS have formed over the years in a somewhat organic manner. Whilst they are in principle sound and have produced good results, there is common perception that there is significant room for improvement. Furthermore, the HSR4R certification requires a number of improvements to be implemented.

As defined in the HR actions in this Strategic Plan, a working committee will be formed to specifically revise the researcher career at IDIBAPS and foster the implementation of the OTMR (Open Transparent, Merit-based Recruitment) according to HRS4R. This committee shall ensure that the new processes reward excellence as defined by the aforementioned criteria, in particularly at the following points:

1. When researchers are accredited to IDIBAPS,

2. When researchers are qualified as Group Leaders, both junior and senior,
3. When researchers are evaluated for any promotion or allocation of resource,
4. When affiliated researchers who are not employees (ICREA, CIBER, UB, etc) are given privileges and/or resources,
5. When the “Emeritus Researcher” position is granted and the characteristics of this appointment.

Timeline: The working committee should develop the new researcher career programme during the first year after this Strategic Plan is approved. This should be presented and approved at appropriate levels and then implemented.

Responsibility: HR Department.

4.2.1.2 PROMOTE SCIENTIFIC LEADERSHIP

A key metric of scientific excellence is the national and international scientific profile of researchers. This is reflected in number of invited keynotes, number of led consortia, invitations to sit on boards and panels, influence in strategic research roadmaps, etc. Whilst all these activities have as a basic requirement the innate scientific merit of a researcher, this alone will not achieve leadership. The researcher must also be pro-active, a good networker, a good manager, able to execute, and have influence both within and outside their home entity.

Scientific leadership can, and does, emerge organically, but it can also be cultivated and supported. IDIBAPS will promote scientific leadership via the following actions:

4.2.1.2.1 PROMOTE PROMISING JUNIOR LEADERS

Scientific and leadership skills are crucial for developing a successful research career. IDIBAPS will consider these features in the selection of Junior Group Leaders. To facilitate the development of these skills in their career, IDIBAPS will assign a mentor from more senior leaders to Junior Group Leaders, with particular emphasis in young researchers of “Clinician Scientist” programs such as 50/50 or “Juan Rodes”. Particular attention to these skills will be considered in educational programs such as the “Stepping-stone”. IDIBAPS will facilitate and promote the participation of Junior Leaders in national and international fora always maintaining an appropriate balance to avoid putting at a risk the development of their own scientific production.

Timeline: These actions will be started in 2019 and will continue throughout the whole period. The Direction Committee of the IDIBAPS will monitor and evaluate annually the results of these measures.

Responsibility: IDIBAPS Director’s Office.

4.2.1.2.2 SUPPORT SENIOR LEADERS

IDIBAPS should consider the national and international leadership of their senior researchers (senior defined as Group Leaders and higher) as relevant criteria in the prioritisation of resources. At the same time IDIBAPS should evaluate the possibility to devote logistic support (e.g secretarial resources, travel

budget, consulting advice) to facilitate the participation of senior researchers in international activities, particularly research projects in which IDIBAPS could achieve a leading role.

Timeline: The Finance team will analyse the possibility to devote resources to support international leadership activities from late 2019. The Direction Committee will evaluate the strategic actions in which these resources could be more successful. International leadership visibility will be included as relevant criteria for the assignment of resources to the groups from the first year.

Responsibility: IDIBAPS Director's Office.

4.2.1.3 PROMOTE MULTIDISCIPLINARY AND BASIC-APPLIED CONNECTIONS

Translational research requires multidisciplinary both within teams and amongst teams. HCB professionals develop clinical research with some researchers fully trained in translational research. Some teams have incorporated basic scientists. IDIBAPS, UB and CSIC basic researchers provide science expertise addressing disease oriented problems and some of them have strong collaborations with clinicians. IDIBAPS will promote this translational research **by prioritising integration and complementarities of basic and clinical researchers in recruitment strategies and Clinical Scientist programs**. Distribution of wet and dry lab space will consider the integrative approach of the groups. Internal funding for small actions, when available, should promote scientific activities that promote interactions between groups. IDIBAPS will promote participation in MD/PhD programs.

Timeline: Multidisciplinary and integration will be considered a priority in IDIBAPS recruitment strategies from the first year in all human resources initiatives. Discussion with HCB for promotion of Clinical Scientist programs will start in 2019.

Responsibility: IDIBAPS Director's Office.

4.2.1.4 OPTIMISE RESEARCH ORGANISATIONAL STRUCTURES

The SWOT identified a number of deficiencies in the current organisational structure of research groups, teams and areas. These must be revised to define a more functional structure with implications in research and management activities, and resource allocations. Special attention must be given to provide career progression opportunities for young and/or female researchers, fostering a culture of innovation, collaboration and excellence, and operational efficiency.

The strategic working committee on this subject has suggested a number of actions:

1. Redefine more exigent criteria to approve formation of a new IDIBAPS research group that takes into consideration scientific quality and minimises fragmentation into small groups.
2. Periodic evaluations of groups should be implemented.
3. Redefine current organisation in "areas" and "teams" in order to achieve more scientific and management coherence
4. Consider the possibility of new organisational structures (research lines or programs) as intermediate structures between groups and areas.

5. Evaluate the implications of the new organizational structures in the IDIBAPS Directive Committee and the Director Advisory Committee

Timeline: This is a complex task that requires a designated working committee that will be appointed in the first quarter of 2019 and will be composed of representative researchers, junior and senior team leaders.

Responsibility: IDIBAPS Director's Office.

4.2.1.5 ATTAIN THE HSR4R ACCREDITATION

Excellence in research can only be achieved and maintained if the centre has excellence in the recruitment and management of its research staff. IDIBAPS has endorsed the Charter and Code for Excellence in Researcher Recruitment and Career Development and must now progress to attaining and maintaining the HSR4R certification.

The specific actions related to this are defined in the Human Resources section of these Strategic Actions.

Timeline: HSR4R accreditation has been submitted. Full accreditation should be achieved in 2020.

Responsibility: HR Department and Scientific Coordination Office.

4.2.1.6 IMPROVE EXCELLENCE IN SCIENTIFIC PUBLICATIONS

IDIBAPS recognises the challenges to be faced in order to increase the quality and impact of publications in a multidisciplinary health research centre. Publications reflect the quality of the research and improvement of the impact of the publications should be a natural consequence of the measures promoting the quality of research. However, IDIBAPS should promote quality and impact while trying to maintain quantity. The target is that a majority of groups attain 75% of articles in Q1 with a reasonable quantitative production. Those are indicators used to qualify for recognition of Excellence of Units and Research Centers in Spain.

Actions to promote these aspects include:

1. To prioritise groups and teams that reach these standards in the distribution of resources.
2. Include training in skills relevant to publications in the IDIBAPS educational programs.

Timeline: Discuss and communicate these goals in the first part of 2019. Evaluate the number and distribution of groups that fulfil these indicators in the first part of 2019 and see the evolution in the first year to estimate the possible impact in the distribution of resources.

Responsibility: IDIBAPS Director's Office.

4.2.2 DEVELOP HUMAN RESOURCES

As identified in the SWOT, the key challenges around HR are to correct the skewed age and gender profiles of the IDIBAPS researcher cohort, and to continue to attract and retain talent from around the

world in a very competitive environment with limited ability to match international salaries (especially northern Europe and non-EU OECD countries.)

Recognising that most IDIBAPS researchers are contractually employed by HCB, any and all actions must be coordinated with HCB

The following actions are designed to directly achieve *Objective 2 – Attract and Retain Talent in Alliance with HCB*, as well as contribute to Objectives 1, 3 and 5.

4.2.2.1 ESTABLISH THE IDIBAPS TALENT WORKING GROUP AND DEFINE THE TARGET DISTRIBUTION OF PROFILES

Actions relating to improved talent attraction, promotion and retention are crucial. The creation of a Talent Working Group with the participation of HCB is proposed to define the target profiles (clinician scientist, young researchers and women in positions of scientific leadership) and design and ensure good implementation and follow-up of the HR programmes and actions.

The Talent Working group will comprise: the IDIBAPS Director, the IDIBAPS Strategy Director, the HCB Medical Director, one top senior clinician scientist HCB-IDIBAPS and one representative of the Physicians and Research Committee.

Timeline: Q1, 2019.

Responsibility: IDIBAPS Director's Office.

4.2.2.2 ENSURE TALENT PROMOTION AND RETENTION

4.2.2.2.1 IMPROVE THE 50/50 PROGRAMME

50/50 is a strategic programme that IDIBAPS implemented to tackle the clinician scientist figure and the generational turnover in scientific leadership. Following evaluation of some awardees after the first 5-year period, some corrective actions are proposed: 1) consider the young full-time physicians of HCB as potential candidates; 2) improve the follow-up and mentoring actions and 3) change category in the research career for the first 5-year period (R3A researchers instead of R3B).

Timeline: Q2, 2019 (design and preparation of the calls); Q4, 2019 (publication of the call and evaluation of candidates); Q1-Q2, 2020 (start of the positions).

10 positions of the 50/50 program should be active by 2022 (there are currently 7 active positions).

(Cost: each 50/50 position costs 35.000€/year)

Responsibility: IDIBAPS Director's Office.

4.2.2.2.2 LAUNCH THE 80/20 JUNIOR PROGRAMME

In order to address the current deficiency in young leaders (<45 years) within the clinician scientists, an 80/20 junior programme is proposed with R3B consideration in the research career strategy.

Timeline: Q2, 2020 (definition of the profile and preparation of the calls); Q4, 2020 (publication of the call and evaluation of candidates); Q1-Q2, 2021 (start of the positions).

Responsibility: IDIBAPS Director's Office.

4.2.2.2.3 IMPROVE THE 80/20 SENIOR PROGRAMME

This is a necessary program to consolidate senior researchers and retain talent. Some modifications to the original programme may be considered such as: revisit the eligibility criteria and duration of the programme, increase the number of available positions, limitations in the age of candidates, etc.

Timeline: Q2, 2020 (design and preparation of the calls); Q4, 2020 (publication of the call and evaluation of candidates); Q1-Q2, 2021 (start of the positions).

Responsibility: IDIBAPS Director's Office.

4.2.2.2.4 GIVE VALUE TO COMPETITIVE SCIENTIFIC HR PROGRAMMES

Currently, to have been a Juan Rodés awardee (or similar competitive HR programme oriented to clinician scientists) does not give extra credit to candidates applying for IDIBAPS or HCB clinical positions. The addition of this scientific recognition as a critical merit to access the 50/50 programme should be considered. This will be reflected in the next 50/50 call, but should also be introduced as a merit in any clinical position call at HCB.

Timeline: Q1, 2019.

Responsibility: IDIBAPS Director's Office.

4.2.2.3 PROMOTION OF SABBATICAL STAYS

IDIBAPS will facilitate sabbatical stays abroad of its researchers. All applications for sabbaticals will be evaluated by the Directors committee. Researchers' salary will be maintained while they are away, but no budget is allocated for mobility.

Timeline: ongoing

4.2.2.4 ENSURE TALENT ATTRACTION AND IDENTIFY ALTERNATE FUNDING MECHANISMS

Given that current budgetary pressures are likely to remain for the foreseeable future and competing for top talent on salary and lab conditions will remain difficult, alternative mechanisms for recruiting and retaining talent are proposed.

4.2.2.4.1 ICREA RESEARCH PROFESSORS

Promote the recruitment of ICREA funded research professors with a translational-oriented career track. This opportunity may be boosted if ICREA realises its ambition to expand the ICREA programme to cover also Innovation-track professionals.

4.2.2.4.2 R3B AND R4 RESEARCHERS WITH PRESTIGIOUS PROJECTS

Promote the recruitment of R3B or R4 researchers who are principal investigators of highly competitive international projects such as H2020 or ERC.

4.2.2.4.3 JOINT APPOINTMENTS WITH OTHER CENTRES

Consider criteria for joint appointments with other leading research centres of top quality group leaders (R4 researchers), with part or all of their research group located at IDIBAPS.

Timeline: Progressively implement from 2020.

Responsibility: IDIBAPS Director's Office.

4.2.2.5 ENSURE GENERATIONAL TURNOVER IN SCIENTIFIC LEADERSHIP

Some 44% of IDIBAPS group leaders are currently older than 60. This percentage goes up to 52% if one looks only at those group leaders undertaking clinical research. IDIBAPS must develop a substitution strategy for those group leaders expected to retire in the next four years. If the research group is considered of strategic value for the institution, then a replacement group leader will be sought via an open recruitment process. Promoting "internal" PIs of renowned prestige might also be considered.

Timeline: Q3, 2019.

Responsibility: IDIBAPS Director's Office.

4.2.2.6 UPDATE THE RESEARCHER CAREER STRATEGY

The IDIBAPS researcher career strategy should be periodically updated every 2-3 years. A revised version will be available by the end of 2018 as the HR Strategy for Researchers Updated Action Plan (2017-2020) foresees. Creation/revision of the Emeritus researcher category and integration of affiliated researchers who are not employees (CIBER) will be addressed in the coming versions.

Timeline: Q4, 2018; Q4, 2020; Q4, 2022.

Responsibility: IDIBAPS Scientific Coordination Office.

4.2.2.7 DEVELOP AND IMPLEMENT CAREER SUPPORT MECHANISMS FOR FEMALE RESEARCHERS

As stated in the IDIBAPS HR Strategy for Researchers Updated Action Plan (2017-2020), one of IDIBAPS HR strategic objectives is to offer a positive work environment with special emphasis on gender equality.

Timeline: a detailed timeline is provided in the Action Plan, which may be consulted upon request.

Responsibility: HR Working Group.

4.2.2.8 IMPLEMENT AND OPEN, TRANSPARENT AND MERIT-BASED RECRUITMENT (OTM-R) POLICY

As stated in the HR Strategy for Researchers Updated Action Plan (2017-2020), one of IDIBAPS HR strategic objectives is to promote and enhance recruitment policies aligned with the OTM-r principles. For this reason, a standard protocol to recruit new staff based in the Code of Conduct for the Recruitment of Researchers is already in preparation.

Timeline: see Appendix 2: HR Strategy for Researchers Updated Plan (2017-2020)

Responsibility: HR Office and HR Working Group.

4.2.2.9 EVALUATE ALTERNATIVE MECHANISMS TO SECURE TALENT

Given that current budgetary pressures are likely to remain for the foreseeable future and competing for top talent on salary and lab conditions will remain difficult, alternative mechanisms for recruiting and retaining talent will be evaluated.

Examples include recruiting promising junior researchers and offering fast-track career development options to compensate lower salaries with more seniority and research resources, or creating joint appointments with other leading research centres, so the high cost of top class group leaders are shared.

Timeline: HR and Direction will evaluate different options and produce recommendations to the Board of Patrons at the end of year 2.

Responsibility: Director's Office and HR Working Group.

4.2.3 DRIVE INNOVATION, VALORISATION AND TRANSFER OF TECHNOLOGY

In order to improve the innovation culture at IDIBAPS it is necessary for more researchers be engaged in TT activities and in particular to disclose their discoveries to the KTT office. We do not expect that every researcher or even every group become active in TT, but those with inclination should have access to training and resources to do so, and be recognised and rewarded for success. Therefore, a general basic level of knowledge is required throughout the whole organization, and pockets of specialised expertise must be fostered.

There are several activities and courses on TT already implemented by other entities in Barcelona, so IDIBAPS could leverage its position to secure training modules and other resources quickly and cheaply via one or more strategic alliances.

The following actions are designed to help realise *Objective 3 – Achieve Impact in Clinical Practice through Innovation and Technology Transfer*, as well as contribute to Objectives 4 and 5.

4.2.3.1 ESTABLISH A TRAINING PROGRAMME IN INNOVATION AND TECHNOLOGY TRANSFER

In order for IDIBAPS staff to innovate effectively they must have the skills and methodologies to do so. Given that the majority do not have technology transfer or innovation backgrounds, a programme of modular training is required to equip different profiles of different levels of advancement with the necessary skills. Relevant training must be made available to all staff – research, technical, and administration – as all profiles are involved in the innovation process.

Given that innovation skills are transversal and that many other research centres in Barcelona are engaged in developing similar programmes, IDIBAPS will try to leverage off similar actions by third parties (UB, Parc Cientific, etc.) The objective is that at least one person in each research / technical / admin group achieves an acceptable level of knowledge.

Timeline: the programme should be developed during 2019 and progressively implemented from year 2020.

Responsibility: KTT Office with support from HR Office.

4.2.3.2 RECOGNISE AND REWARD INNOVATION

Metrics and incentives, such as personal promotion or allocation of space and resources, must be carefully designed to promote innovation activities while maintaining balance with research activities. The objective must not be to try to convert all researchers to be innovators, but rather to allow individuals to pursue their own particular path and advance also in the innovation stream as well as, or instead of, the research stream.

Direction, Human Resources and KTT will work together to develop well-defined career development paths and other incentives to provide full recognition and compensation for innovation activities.

Timeline: initial planning and deliberations to be undertaken in 2019, with some simple measures implemented in the same year. Implementation to be gradually effected from 2020, with the objective of full implementation by end of 2021.

Responsibility: Director's Office with support from KTT Office and HR Office.

4.2.3.3 PROMOTE INNOVATION IN INTERNAL COMMUNICATIONS

The KTT and Communications department will jointly develop an internal communications plan to support innovation.

This should highlight IDIBAPS success stories as well as best practices and case stories from other reference centres internationally.

Basic information about IPR and spin-off creation should be summarised in the INTRANET/ INTERNET with work-flow diagrams to help PIs understand all the process and actors. It should include PIs rights and responsibilities, and serve to facilitate the commercialisation process and engage with the PIs.

Timeline: the plan should be developed during 2019 and progressively implemented from 2020.

Responsibility: Communication Department with support from KTT Office.

4.2.3.4 PROMOTE INTERACTION WITH THE INNOVATION COMMUNITY

Innovation and technology transfer require extensive interaction with multiple external actors, and these interactions are greatly facilitated by personal relationships and mutual trust.

In order to promote the interaction of IDIBAPS personnel with these various actors in the wider community, a series of third party events will be identified (Biocat, CataloniaBio, etc.) and will be widely promoted and advertised to IDIBAPS personnel. Furthermore, IDIBAPS will invite speakers to teach and share their own experience in a series of open sessions (BIO-Business Day/Week). Both activities have the objective to facilitate IDIBAPS personnel to interact with the innovator and technology transfer community.

A key aspect of interacting with the innovation community is disseminating to the wider community the opportunities arising from IDIBAPS discoveries and improving IDIBAPS profile in technology transfer. The IDIBAPS portfolio of projects must be clearly displayed in the new web (INTERNET) to facilitate any company or partner to have an overview of IDIBAPS innovation activities and opportunities. Successful deals should be highlighted and presented as case studies to inspire further similar developments.

Timeline: initial trial events should be developed during 2020 and progressively increased in scope and number from 2021. The contents for the web should be prepared during year 2019.

Responsibility: KTT Office.

4.2.3.5 FACILITATE TECHNOLOGY TRANSFER ACTIVITIES

A number of deficiencies have been identified at IDIBAPS that impede the smooth and efficient progress of technology transfer activities at the centre. These must be remedied.

- Third party IPR framework agreements should be signed in order to clarify the IPR policies of all actors in Campus Clinic (IDIBAPS, FCRB and Hospital Clinic). This will help to define the processes and protocols to manage all activities related to IPR.

- Define spin-off creation protocols and policies in more detail, as well as the preferred relationship between IDIBAPS and the spin-off companies.

Timeline: Signature of agreements, protocols and creation of documents during year 2019. Communicate the information to all staff from year 2020 onwards.

Responsibility: KTT Office.

4.2.3.6 STRENGTHEN THE CAPACITIES OF THE IDIBAPS KTT OFFICE

If the ambition of IDIBAPS to become a reference centre in knowledge and technology transfer is to be realised, then the capacities of the KTT office must be strengthened accordingly.

Several areas in particular need increased budgets:

1. An increased budget is needed for the KTT office to invest in patenting, legal advice, and other professional services required for the protection of IP.
2. A dedicated budget is required to support the training programme for staff (as described above).
3. A budget is required to facilitate attendance at relevant national and international events where IDIBAPS technologies can be promoted to biomedical investment communities (e.g. Bio Europe and others).

Detailed budget projections must be prepared, but an initial estimate for these activities is €50K (for protection, legal and travel/promotion costs) in 2019, rising to €100K in year 2022.

One source of future budget for the KTT office could be the reinvestment of revenues generated by commercialisation of IDIBAPS IP. Current policy defines that IDIBAPS retains 1/3 of such revenues, however the protocol and workflow with the Finance Department needs to be precisely defined.

Another source of future budget for the KTT could be the allocation of KTT costs in the application to competitive calls. IDIBAPS should identify these calls and help the PIs to prepare the applications including, for example, patent and travel costs to partnering events. Examples of relevant calls include VALUNI, Gínjol, CaixaImpulse, etc.

Timeline: The identification of new resources should start during year 2019 and increase of budget should start from year 2020 through year 2022.

Responsibility: KTT Office with support from Projects Office.

4.2.3.7 DEVELOP INSTITUTIONAL RELATIONSHIPS WITH INDUSTRY

Closer relationships with key medical device and pharmaceutical companies is likely to have multiple benefits for IDIBAPS innovation capacity, including better insights of clinical and market needs, stronger relationships for requesting partnering and sponsorship of innovation activities, and possibly the development of joint innovation laboratories.

The KTT office will develop a list of priority target companies and VC funds and Direction will then develop individualised strategies to engage with them.

Timeline: Two new target companies to be engaged each year.

Responsibility: KTT Office.

4.2.4 CONSOLIDATE AND OPTIMISE TECHNICAL INFRASTRUCTURES AND SERVICES

To continue driving excellence in research, and to develop new activities in innovation and technology translation, demands will continuously arise for IDIBAPS to renew or acquire new equipment and services and to dedicate additional space for new activities. However, it is not expected that IDIBAPS will acquire new spaces beyond those already planned in the Escola Industrial nor that its financial incomes will increase significantly in the next 5 years.

Therefore, the strategy of IDIBAPS to address the aforementioned needs is to carefully optimise current spaces and resources and drive collaboration with other entities in the ecosystem to access spare

capacities in their infrastructures and/or collectively invest in new infrastructures that need not be physically located at IDIBAPS.

The following actions are therefore designed to help realise *Objective 5 – Consolidate and Stabilise Resources and Infrastructures*, as well as contribute strongly to Objectives 1, 2 and 3.

4.2.4.1 DEVELOP THE INFRASTRUCTURE ROADMAP

As described in 2.2.10, the current space and facilities are limited but the most urgent needs are being addressed by additional spaces that will be available from 2020. Partial evaluations of space distribution will be implemented in 2019 for CELLEX, 2020 for Escola Industrial (provide the plans fulfil the expected timeline and 2021 for CEK.

There is no current expectation that IDIBAPS will acquire further laboratory spaces in the near/mid term. It is expected that IDIBAPS will acquire some new spaces in the Escola Industrial near its current buildings, that will allow limited growth within the near future. The activities that will benefit from these new spaces will be selected based on very strict criteria of excellence and multidisciplinarity as defined in this strategic plan.

Therefore, future needs of both space and equipment must be met by optimising the use of existing facilities and/or accessing or jointly operating facilities belonging to other relevant entities in Barcelona.

IDIBAPS must therefore create a roadmap for future facilities development and plan how to finance and implement them. The roadmap should future needs of key research lines in terms of space and equipment for the next 5+ years, with associated estimates of cost, and prioritisation.

A working committee will be formed to create the roadmap, identify the expected funding sources and plan any relevant local alliances.

Timeline: the committee will develop the roadmap during the first year and continue to refine and update it annually thereafter.

Responsibility: Strategy Office.

4.2.4.2 PRO-ACTIVELY LEVERAGE LOCAL INSTITUTIONAL RELATIONS TO GAIN ACCESS TO THEIR FACILITIES

IDIBAPS must pursue stable alliances with other research institutions which have facilities that are not available at Clinic campus. These alliances must consider institutions with complementary facilities and also singular large-scale facilities such as the Barcelona Supercomputing Center, CNAG and Sincrotró ALBA.

Timeline: Contacts should be initiated with research centres having animal facility space available, BSC, CNAG and ALBA, all by the end of 2018. Agreements with these institutions should be signed during 2019. On the other hand, a survey of IDIBAPS researchers should be performed during 2019 to identify other needed infrastructures.

Responsibility: Director's Office.

4.2.4.3 IDENTIFY AND LEAD COMMUNITY INITIATIVES FOR SHARED INFRASTRUCTURES

IDIBAPS has some infrastructures that are unique: mainly, the BTN biobank (Brain Tissue) and the 7 Teslas (MRI for small animals). IDIBAPS must make more effort to publicise them to the external research community in order to maximise their use. Other infrastructures are not unique per se, but have associated know-how which makes them valuable services to external researchers. All IDIBAPS infrastructures must be well known by other research institutions, both private and public, to increase the number of services on offer and improve IDIBAPS' positioning.

Timeline: Each core facility coordinator and the IDIBAPS Core facilities director must design a program to increase visibility of the technological equipment and know-how by 2019. Programs should start by 2020 and by 2021, the increase in the use of infrastructures should be measurable.

Responsibility: Strategy Office.

4.2.4.4 FOSTER A CULTURE OF CONTINUOUS IMPROVEMENT AND INNOVATION

Researchers are best placed to be continuously aware of cutting-edge technologies and methodologies that may represent an improvement of current technologies or the possible acquisition of new ones to support excellent research. Also, continuous innovation in processes and management must be in the agenda if excellence and optimisation of resources is to be achieved.

Most suggestions for improvement and innovation are expected to come from researchers, technicians and management staff. The working committee described in 4.2.3.1 above shall also be responsible to prompt, receive and evaluate proposals from researches and management, coordinate their implementation and/or integrate them into the Infrastructure Roadmap.

Timeline: By 2021, both commissions should be fully operative and proposals presented to the Director in a regular basis.

Responsibility: Strategy Office.

4.2.5 GROW COMMUNICATION AND OUTREACH

Whilst IDIBAPS communications have developed significantly over recent years, the SWOT clearly identified weaknesses in both internal and external communications. Currently IDIBAPS lacks an effective intranet and internal communication channels are weak and not well subscribed. Negative effects include inefficiencies and duplications due to lack of knowledge about what other researchers and departments are doing, weak alignment with institutional goals and priorities due to lack of awareness, and reduced motivation as there is very little recognition of progress and successes.

Externally, the IDIBAPS name is virtually unknown outside of academic biomedical circles, although Hospital Clinic Barcelona is a fairly strong brand associated with quality and excellence. IDIBAPS achievements are not well promoted and despite being the largest hospital biomedical centre in Barcelona, it is not a strong reference in the public sphere, with negative effects on talent recruitment and fundraising from donors.

This strategic action is transversal in that improved internal and external communications to staff, stakeholders and the general public is critical to supporting all strategic objectives, but in particular the actions here help achieve Objective 5 – Increase the profile of IDIBAPS.

4.2.5.1 IMPROVE INTERNAL COMMUNICATION

Currently IDIBAPS does not have a powerful internal communication tool. This, together with the fact that many professionals belong to several institutions and / or travel a lot or do not work in front of the computer, means that they do not receive IDIBAPS news. This means that sometimes professionals do not know what others are doing and that there is very little internal and external recognition of successes. It also makes it difficult for the institution to promote projects, etc. (For example, 4.2.1.1.2 Communicate Culture of Excellence actions or 4.2.3.3 Promote Innovation in Internal Communications)

4.2.5.1.1 CREATION OF THE IDIBAPS INTRANET

A potent intranet shall be established where research staff can perform all administrative tasks (ask for material, vacations, consult payroll), find protocols and documents of interest and access all institutional news. Also, the intranet should facilitate encounters between staff so people get to know each other and organise non-scientific activities, for instance. The ideal would be a space in the intranet of the Clinical Hospital to replace the current "Portal of the Researcher" of the Fundació Clínic.

Timeline: 2020-2022

Responsibility: Communication Department.

4.2.5.1.2 WELCOME PACK AND WELCOME DAY

A welcome pack with practical institutional information for new recruits will be created and regularly updated by communication, and distributed by HR as appropriate.

A 'welcome day' will also be organised twice a year to welcome new recruits to IDIBAPS and give them guided tours of the facilities.

Timeline: 2019

Responsibility: Communication Department.

4.2.5.1.3 INTERNAL BULLETIN

Create a more attractive and visual internal newsletter to disseminate IDIBAPS news. Maintain the database with all the research staff of the Campus Clínic that should receive the newsletter.

Timeline: Launched 2018-2019

Responsibility: Communication Department.

4.2.5.1.4 INSTALLATION OF INFORMATION SCREENS

The installation of informative screens is proposed for the dining room of the Esther Koplowitz Center and CELLEX buildings to promote latest research results, internal news, institutional communications, seminars, calendar of activities, etc.

Timeline: 2022

Responsibility: Communication Department.

4.2.5.2 BE A PRESTIGIOUS BRAND NATIONALLY AND INTERNATIONALLY

4.2.5.2.1 EVALUATE A CHANGE OF NAME

Analyse the possibility of changing the name of the 'IDIBAPS' to one that better identifies the research centre with Hospital Clínic, since they currently have no connection. The IDIBAPS name is virtually unknown outside of the strictly scientific scope, while that of Hospital Clinic is known by a large part of society and is associated with quality and excellence.

Develop a proposal for name change and an implementation plan, and present it to senior management for approval.

Timeline: 2019

Responsibility: Communication Department.

(Budget: no additional funds required. HCB is undertaking the external consultancy)

4.2.5.2.2 CREATE A NEW WEBSITE

Create a modern, attractive, agile and effective website that serves as a showcase for the research groups and the institution and that is a reference and example for other institutions.

Timeline: Launch 2018-2019

Responsibility: Communication Department.

4.2.5.2.3 PROMOTE IDIBAPS IN NATIONAL AND INTERNATIONAL MEDIA

Prepare a media engagement plan to promote the appearance of IDIBAPS scientific results in national and international media.

Hire a clipping service to collect all news that is published about IDIBAPS and other local and/or international reference centres in the media, in order to measure and compare IDIBAPS' performance in these channels.

Evaluate the potential cost-benefit of hiring an international press agency to promote the appearance of IDIBAPS in international media.

Timeline: 2021-2022

Responsibility: Communication Department.

4.2.5.2.4 MAKE IDIBAPS MORE WELL-KNOWN IN THE CAMPUS CLINIC

Carry out information actions on IDIBAPS mission and activities for students and for hospital visitors.

Create an exhibition at HCB and information brochures to distribute to patients, students and families.

Timeline: 2020

Responsibility: Communication Department.

4.2.5.3 BE A REFERENCE IN SCIENTIFIC OUTREACH

Implementation of this strategic action requires the hiring of a full-time junior communications person to support all the sub-actions detailed below. Full cost estimated at 32K€/year.

4.2.5.3.1 TRAINING OF RESEARCHERS

Identify a pool of researchers interested in public outreach and provide them with tools and carry out training courses to teach them techniques to be more effective in their outreach and dissemination activities.

Timeline: 2019-2022

Responsibility: Communication Department.

4.2.5.3.2 CREATION AND/OR ACQUISITION OF OUTREACH MATERIALS

Create and/or buy kits, stands, brochures, panels and other support material for carrying out outreach and dissemination activities addressed mainly to schools Funding opportunities (FECYT, Ajuntament de Barcelona, FCRI) to buy this material will be identified and projects will be presented from the Communication Office.

Timeline: 2020

Responsibility: Communication Department with support from Projects Office.

4.2.5.3.3 MORE ACTIVE PRESENCE IN DIVULGATION ACTIVITIES

IDIBAPS must actively participate, either by researchers talks, institutional presentations and exhibits or distribution of flyers, in outreach initiatives organised in Barcelona / Catalonia / Spain: Beers for science, Researcher´s Night, Parking day, Science festivals, YOMO, Science Week, etc.

Timeline: 2019-2022

Responsibility: Communication Department.

4.2.5.3.4 ORGANISE A SCIENCE FESTIVAL AT IDIBAPS

To make known the research carried out by IDIBAPS, a party is planned during Science Week in the inner courtyard of the CEK. Schools are invited in the morning and activities are planned for the users of the interior courtyard in the afternoon. This science festival should be performed annually and should evolve into a community annual event. Sponsors will be sought to minimise costs.

Timeline: 2018-2022

Responsibility: Communication Department.

4.2.5.3.5 OPEN DAY FOR THE PUBLIC

Organize an annual open day so that citizens can get to know IDIBAPS first-hand.

Timeline: 2020

Responsibility: Communication Department.

4.2.6 CULTIVATE INSTITUTIONAL AND INTERNATIONAL LINKS

*“Doing good is unfortunately not enough, to be valued one also must be **seen** to do good.”* IDIBAPS has a need to be visible at Catalan, Spanish and EU levels in academic, political and societal circles. A stronger visibility gives IDIBAPS influence with institutions that determine funding policies and topics, facilitates collaborations with industry and medical centres of repute, and boosts IDIBAPS objectives for talent recruitment and societal impact. It also supports stability and continuity in the face of political and societal uncertainties.

Such visibility requires not only strong communication actions in the press and online, but also direct participation by senior academic and management staff at relevant fora, and pro-active development of institutional and international relations.

One major issue for IDIBAPS is that its brand is overshadowed by that of HCB and is not well recognised outside of academic circles. The issue of branding of both HCB and IDIBAPS is currently the subject of analysis by an external consultancy.

The following actions are designed to help realise *Objective 5 – Increase the Profile of IDIBAPS*, as well as support generally the other strategic objectives.

A number of these actions are supported via existing funding and resources allocated in other areas such as Communication and Outreach, Excellence in Research, etc.

4.2.6.1 GROW THE INTERNATIONAL PROFILE OF IDIBAPS AND ITS LEAD RESEARCHERS

An internationalisation plan will be developed to give IDIBAPS visibility at European and global levels. This plan will include a promotion strategy of international direct contacts with other biomedical research institutions and also participation by leading IDIBAPS researchers in international lobbies of decision making in health research agendas and funding. It may also include communication actions such as seminars with editors of international journals or co-hosting meetings and congresses of key international biomedical associations.

Timeline: The internationalisation plan should be written by 2019 and the strategy should be implemented from 2020 on.

Responsibility: Strategy Office.

4.2.6.2 PROMOTE COLLABORATIONS WITH INTERNATIONAL ENTITIES OF REPUTE

This action comprises two sub-actions:

4.2.6.2.1 PRIORITISATION OF SUPPORT RESOURCES FOR INTERNATIONALISATION.

Similar to the action 4.2.1.1 Recognise and Reward Excellence, when allocating support resources such as travel budgets, projects office support, etc., priority will be given to supporting researchers who are developing collaborations (project proposals, co-authored papers, joint workshops, joint summer schools) with international entities of repute. There is no absolute metric for measuring the reputational profile of an international entity, but independent rankings, recognised leadership in a particular area, and/or total impact factor of publications may be used to comparatively rank proposed collaborations.

The first stage will be to decide which support resources should implement this criterion in their prioritisation of allocation, and to communicate the change and the reasoning behind it to all researchers. The second stage will be to begin to apply the policy.

Timeline: The internationalisation priority policy should be developed and communicated in 2019 and implemented from 2020 on.

Responsibility: Strategy Office.

4.2.6.2.2 DRIVE INSTITUTIONAL PROJECTS TO FUND INTERNATIONALISATION

IDIBAPS will drive at institutional level the presentation of proposals under the H2020 Marie Curie programme and similar funding schemes, that are not topic specific but rather finance researcher mobility and international collaboration.

An example: in 2017, the H2020 Marie Curie Cofunded an IDIBAPS initiative to attract young excellent clinician-scientists to IDIBAPS. The initiative is a three-year program to enrol scientists from all over the world willing to perform part of a research project at IDIBAPS and concurrently work in an international prestigious center. The program will enrol 10 young investigators and recruitment will be based solely on excellence.

Timeline: The number of internationalisation applications submitted shall progressively rise from one institutional submission in 2019 to at least 3 in 2022.

Responsibility: Strategy Office.

4.2.6.3 DEVELOP COMMUNICATIONS AND EVENTS THAT SUPPORT INTERNATIONALISATION

The Strategy Office will consult with senior researchers to identify key target international entities, events and fora, and will then work closely with the Communications department to develop a suite of communications resources to support its actions. These include:

- Case studies of successful collaborations
- Institutional presentations
- Promotion of job positions to international partners
- Institutional presence (stands, keynotes, etc) at key international events

Timeline: resources to be progressively produced and continuously updated, but with a stronger dedication of time and resource in 2020.

Responsibility: Strategy Office supported by the Communication Department.

4.2.6.4 SECURE A VOICE IN KEY LOCAL AND INTERNATIONAL FORA OF INFLUENCE

IDIBAPS has sufficient critical mass and international prestige to support having a voice in key local and international bodies and associations responsible for research funding policies and regulations that directly impact IDIBAPS. Whilst IDIBAPS is present at some of these, there has not to date been a coordinated institutional focus to send consistent and strong messages. More can also be done to work in collaboration with other scientific centres in order to present a stronger voice.

Senior academic and management staff should be nominated to represent IDIBAPS at relevant forums, and should be appropriately briefed by the Director's Office in order to ensure that institutional priorities are effectively communicated.

Timeline: Target fora to be identified and senior staff representatives assigned during 2019, with progressive increase in representational activity from 2020.

Responsibility: Director's Office.

4.2.6.5 SECURE LONGER-TERM INSTITUTIONAL SUPPORT THROUGH ALIGNMENT OF OBJECTIVES

IDIBAPS Director's Office must work with Patrons and Donors to ensure that objectives and priorities are well-aligned, thereby creating a basis for securing longer-term stability of planning and financing, which in turn will enable IDIBAPS to plan and execute more effectively.

In practise, this will be implemented by programming regular meetings, both formal and informal, with key representatives of the Patrons and Donors and key decision makers within HCB and IDIBAPS.

Timeline: Meetings should be gradually planned from 2019 onwards.

Responsibility: Director's Office.

4.2.7 GROW MANAGEMENT AND OPERATIONAL CAPACITY

IDIBAPS has grown exponentially since its foundation and the managerial structure has organically adapted to this growth without clear planning of current and future needs. Furthermore, reporting and implementation requirements from funding agencies undergo constant change and create increased complexity. The SWOT analysis clearly identified significant opportunities for improvement in organisation, processes and support tools, particularly IT systems.

IDIBAPS must therefore identify current and future management needs and adapt the managerial organisation and operational processes to those needs. This may include reviewing the managerial positions and the required profiles and skills, and selecting and implementing new IT systems to increase productivity and facilitate continued growth in research activity without concurrently growing the management infrastructure.

The SUMA merger of the legal entities of IDIBAPS and FCRB will help reduce some of the underlying systemic complexity, but will not in and of itself address the management organisation issues. These must be dealt with in parallel.

The following actions are designed to help realise Objective 4 – Consolidate and stabilise resources and infrastructures, as well as contribute to Objectives 1 and 3 by increasing operational capacity for research and translation activities.

4.2.7.1 Optimise the Organisation of Management and Administration Departments

The SWOT analysis clearly identified a number of internal organisation and process issues that are considered to be cumbersome and inefficient. Also identified were a number of unmet managerial and support needs. An analysis of current and future managerial and administrative needs will be performed, and alternative organisational structures and processes will be evaluated to design a more competitive, efficient and agile managerial structure. This action will be performed in conjunction with FCRB which is currently providing the majority of managerial services to IDIBAPS researchers.

Timeline: The analysis should be conducted during 2019, with the proposal put forward to Patrons and approved during 2020 for progressive implementation thereafter.

Responsibility: General Manager.

4.2.7.2 Introduce Periodic Evaluations of IDIBAPS Management

IDIBAPS, like all CERCA centres of the Generalitat of Catalonia, has in place an independent scientific advisory board that periodically evaluates the overall scientific performance of the centre as well as the senior group leaders. This periodic evaluation has proven to work very well and has contributed significantly to the continuous improvement of the scientific excellence at IDIBAPS.

IDIBAPS intends to introduce a similar external, periodic evaluation of its management and administration functions, to promote the adoption of best practice and continuous improvement by senior management. IDIBAPS will work with CERCA to ensure alignment in the definition of criteria and process.

Timeline: Criteria and process should be proposed and agreed in 2019, the external evaluators identified and convened in 2020 for a first evaluation in 2020/21.

Responsibility: General Manager.

4.2.7.3 Enhance the Management Information Systems

IDIBAPS has to manage a complex and massive array of information, including managing data for administrative, HR, legal, project, financial and intellectual property functions, in addition to data generated by research activities. The legislations governing requirements around the storage and use of this data, especially private and ethically sensitive data, is complex and constantly changing.

Furthermore, reporting requirements to patrons, donors and funders are also subject to regular change and can vary significantly in format and level of detail.

IDIBAPS therefore requires advanced and flexible information systems in order to meet managerial, legal and reporting requirements effectively and efficiently, and to support rapid and good decision making.

The SWOT analysis identified numerous weaknesses in IDIBAPS current systems, which must be progressively addressed. An IT systems roadmap will be developed to prioritise the selection and implementation of new software and hardware. Given the limited managerial and financial resources available, wherever possible standard software or implementations already adapted by other similar research centres will be used.

Timeline: The IT systems roadmap will be developed and approved during 2019 so that first phase implementation can be budgeted in 2020.

Responsibility: IT Department and General Manager.

4.2.8 IMPLEMENT MERGER WITH FCRB (SUMA)

In 2016, with financial support from the Generalitat de Catalonia, a legal study was performed to analyse possible legal formulae to merge IDIBAPS (a public consortium) with FCRB (a foundation). This was followed in 2017 with a detailed study to analyse the scientific and economic impact of such a merger between IDIBAPS and FCRB. The conclusions of both studies were presented and discussed with the General Direction of HCB and then also with the General Directors of Research from the Catalan Health Department and the Catalan Knowledge and Economics Department, as well as with the Director of CERCA. Due to the political instabilities of recent times, the proposal did not reach the corresponding ministries and was therefore never approved. IDIBAPS and FCRB must review and update the documents and restart the negotiation process with the current Catalan government. The objective is to reach agreement within the next two years and implement the merger during the period of this Strategic Plan.

Timeline: Finalise the merger plan during 2019 and get formal approval from Patrons and related government departments by 2020, for implementation during 2021-2022.

Responsibility: Director's Office.

4.3 RESOURCES AND FUNDING

4.3.1 REQUIREMENTS

4.3.1.1 INCREASE FINANCIAL SUSTAINABILITY

IDIBAPS depends on two main funding sources: around 11% of the consolidated budget is provided directly by the public administration of the Generalitat of Catalonia and the remaining 89% is raised through competitive research grants and clinical trials.

IDIBAPS and FCRB core support structures and common services are financed by the Catalan administration funding and the overheads generated by the execution of research projects. If research activity increases, more overheads will be generated and additional actions to support researchers can be implemented.

However, ideally the contribution by Patrons to IDIBAPS should be increased to maintain and increase stable support structures for researchers and management. A viability plan for the coming years is being developed along these lines.

Timeline: The viability plan should be complete by the end of 2018 and its implementation and follow-up should occur during 2019-2022.

4.3.2 SOURCES

4.3.2.1 SPONSORSHIP AND FUNDRAISING POLICY

In 2018 a Fundraising Unit was created in cooperation with HCB. This Unit is responsible for managing all charitable donations, and most importantly, is charged with working with donors to increase the number and amount of donations.

Timeline: The objective for 2019, is to raise at least an additional 120 k€. This amount should progressively increase in the coming years.

4.3.2.2 STABLE ALLIANCES WITH THE PRIVATE SECTOR

As both direct and competitive public funding becomes progressively more difficult to obtain due to the constraints of the Spanish and European economies, public-private collaborations appear increasingly attractive as a new way of providing stable cofunding for institutions such as IDIBAPS.

IDIBAPS must look for stable, longer-term collaborations with the private sector beyond individual collaborative projects. This may include, for example, joint laboratories for innovation in medical technologies and drug development.

Timeline: By 2020, develop a roadmap to identify and contact companies with which to establish stable collaborations.

4.3.2.3 IDENTIFY AND PURSUE ALL AVAILABLE INFRASTRUCTURE FUNDING OPPORTUNITIES

Although IDIBAPS has been benefiting from competitive calls for infrastructures over many years, most of them come from FEDER funds and therefore, IDIBAPS has to contribute 50% of the cost. These opportunities have permitted to upgrade some infrastructures such as the 3 Teslas MRI, but still are too costly for the Institution.

An effort should be made to get funds from charities, associations or donations to overcome the shortage of funds from government or other public sources.

Timeline: IDIBAPS should make an infrastructure renewal plan by 2019. Once the prioritisation is made, together with the patronage office, the Direction of IDIBAPS should start engaging patrons by the end of 2019 and during the whole period of this strategic plan.

4.3.3 LOCAL AND REGIONAL COORDINATION

IDIBAPS must do more to derive benefit from its location in the center of Barcelona and especially from the concentration of high performance institutions around Hospital Clinic. Although many managerial initiatives and some resources (such as informatics support and health prevention) are already performed in cooperation with Hospital Clinic and there is a cooperation agreement with UB in terms of complementarity of infrastructures, more alliances should be built to optimise resources and build excellence in translational biomedical research.

Also, further afield but still within the Barcelona area are a number of outstanding research institutes and scientific infrastructures, offering capacity for both basic and translational research. Key examples include CNAG and the ALBA synchrotron. Scientific and managerial coordination strategies should be designed so that resources across the local area are optimised and synergies realised in investments and utilisation.

Timeline: Collaboration agreements should be signed to facilitate the scientific cooperation between IDIBAPS and ALBA, BSC and CNAG by year 2020.

A study of the best alliances between research centers in the Barcelona area should be performed by 2020 and collaborations agreements progressively signed thereafter.

4.4 CHRONOGRAM AND MILESTONES

Although some actions of this strategic plan have already been initiated, a full planning of all the actions has been calendarised for the full five years period (see Appendix 2). Due that some uncertainties can not be currently solved, the chronogram and milestones will be reviewed in the year 2020 when all the strategic plan will be reviewed.

5 APPENDICES

5.1 APPENDIX 1: SWOT ANALYSIS

5.1.1 STRENGTHS

5.1.1.1 HIGH CRITICAL MASS OF MOTIVATED AND EXPERIENCED RESEARCHERS

Talent is a key pillar of success for any research organisation. In its 20 years of existence, IDIBAPS has succeeded in concentrating a critical mass of good researchers who have created a high-performance research environment. This is demonstrated in the excellent performance of the centre in attracting competitive funds from National and International programmes, clinical trials and contract research from private companies.

Implication: *This strength must be maintained. A pro-active HR programme to recruit and retain talent and commitment to maintaining HRS4R certification must be central to the Strategic Plan.*

5.1.1.2 CONSOLIDATED GROUPS WITH INTERNATIONAL LEADERSHIP

IDIBAPS has a number of well established, consolidated research Groups led by very distinguished researchers with high international profile. These Groups contribute strongly to the overall reputation of IDIBAPS and underpin the capacity of the Institute to take leading roles in collaborative projects with leading international institutions, and in securing competitive funds at the national and European levels.

Implication: *This strength must be maintained. Leading groups must be further supported to increase their international projection, and promising younger groups must be mentored and nurtured to ensure renewal of leadership as the existing international leaders eventually retire.*

5.1.1.3 MULTIDISCIPLINARITY ACROSS STRATEGIC RESEARCH LINES

The research lines at IDIBAPS are naturally dependant on the pathologies treated at HCB. This results in a very large number of research areas covering a broad array of heterogeneous topics. Nevertheless, IDIBAPS researchers have managed to build multidisciplinary teams to successfully address the many and varied technological and scientific challenges, and have created a critical mass of key competencies required to produce real impact across the portfolio of research lines.

This multidisciplinary, in particular the aspects spanning the usual divide between basic and clinical research, is considered a key strength of IDIBAPS. However, there is a sense that this strength is being threatened as the research profile of many newer recruits in HCB and IDIBAPS are not as transversal as that of retiring researchers.

Implication: *Multidisciplinary interaction amongst research teams is dependent both on the profile of the researchers, but also on the incentives and motivations to collaborate versus the barriers that may inhibit collaboration. If multidisciplinary is to be maintained and strengthened, then the recruitment strategies of both IDIBAPS and HCB must include appropriate selection criteria, but IDIBAPS must also foster a collaborative research environment, ensuring that different researchers have adequate*

opportunities to meet and discuss, and that support mechanisms exist for those wanting to try to work together in new ways.

5.1.1.4 CONSOLIDATED SCIENTIFIC LEADERSHIP

Since its creation in 1996, IDIBAPS has been the leader in scientific metrics of Spanish biomedical research centres linked to hospitals. One of the fundamental reasons for this continuous leadership has been the strong commitment of HCB to research, guaranteeing protected research time for clinicians and recognising and valuing research in its human resources policies. Another important reason for this success has been the leadership provided by its directors who have strongly promoted good science and recruited top talent over many years.

Implication: *Leadership amongst the Spanish institutions must be maintained although some societal changes are envisioned such as increasing difficulties in motivating young clinician scientists to pursue a scientific career. Also, international leadership should be considered an achievable challenge and should be considered in all institutional and individual decisions.*

5.1.1.5 NATIONAL LEADERSHIP IN CAPTURING INTERNATIONAL COMPETITIVE FUNDING

IDIBAPS is amongst the leading biomedical research entities in Spain in terms of number and value of European competitive funding attained. The resources sustained by these funds have been critical to achieve the scientific and clinical successes of recent years.

Implication: *Sustained success in securing EU competitive funding relies not just on having excellent PIs with strong international networks, but also on strong institutional support in strategically planning for and targeting different funding programmes, and on administrative support in project proposal preparation and project implementation. Success can also bring with it organisational stress as capacity to manage the awarded projects and associated administration with limited personnel is stretched. To maintain and improve on the attainment of European competitive funds, IDIBAPS must continue to streamline support systems and processes.*

5.1.1.6 EXCELLENT OPERATING ENVIRONMENT WITH WORLD-CLASS FACILITIES

The founding vision when IDIBAPS was created in 1996, was to create a research centre to boost translational research and thereby fulfil the needs of clinician scientists to bring together basic and clinical research in order to answer clinical questions. The environment of the time and the stakeholders involved were ideal to create an independent research centre with important characteristics:

- Independent legal entity with its own governance and executive management;
- An institutional environment facilitating integrated basic / clinical research with a focus on innovation;
- Innovative programs establishing new professional profiles bridging basic research and clinical practise;
- Access to world-class facilities in HCB and UB, as well as the subsequent development of own laboratories and core facilities;

The success of IDIBAPS over the last 20 years is credited in great part to the operating environment that has been created, allowing researchers across the spectrum to conduct excellent research with cutting-edge facilities as well as collaborate extensively transversally with others in a culture of innovation.

Nevertheless, funding cuts over recent years due to the financial crisis have impacted on the renovation and upgrade schedules of core facilities and if not addressed, could see a deterioration in the overall operating environment.

Implication: *The characteristics that have been key to the successful operating model of IDIBAPS should be defended and strengthened. Scientists must maintain access to cutting-edge core facilities, transversal and multidisciplinary interaction and collaboration must remain fluid and easy, and the culture of innovation must be continuously fostered.*

5.1.1.7 GOOD GOVERNANCE AND PROFESSIONAL MANAGEMENT

Good science is not possible without good governance and effective management.

The objectives of IDIBAPS, HCB and their patrons have been well aligned and there has historically been good common understandings of objectives and challenges, with excellent collaboration amongst the institutions involved in addressing them.

The internal governance of IDIBAPS is collegiate, transparent, executive, and applies criteria of excellence. This has generated confidence and stability amongst staff, management and the governing board.

IDIBAPS has established a professional management team that has overseen continual growth of the centre and improvement of systems and processes. Although much work remains to optimise and achieve world best standard, the management team are highly valued by the scientific staff and there is a very positive culture of continual improvement.

Implication: *The good governance of the centre must be strengthened and improved, in particular through proactive management of institutional relations with HCB and the institutions on the Board of Patrons. The quality of management must also be maintained and strengthened, in particular through supporting professional training and development of staff, and open and regular internal communication between management and scientific staff.*

5.1.2 WEAKNESSES

5.1.2.1 IMBALANCED AGE, GENDER AND PROFILE DISTRIBUTION OF RESEARCHERS:

5.1.2.1.1 AGE - GENERATIONAL IMBALANCE IN SCIENTIFIC LEADERSHIP, PARTICULARLY IN THE PROFILE "CLINICAL SCIENTIST"

A large number of clinician scientists are retiring or close to do so. In quite a few cases there is currently no programmed replacement of similar calibre to the retiring researcher. The main reason for this situation is simply a historical lack of strategic planning in recruitment, resulting in the current skewed distribution of age.

Implication: A comprehensive, long-term recruitment and career management strategy must be put in place that provides management with the tools to develop a more balanced age distribution profile over the mid- to long-term. As the majority of scientists are recruited by HCB, this strategy must be developed in close collaboration between IDIBAPS and HCB.

5.1.2.1.2 GENDER - DEFICIENCY IN FEMALE LEADERSHIP RATES

Only 25% of group leaders are females. Although this is a common issue in most research institutions, improvements in this area are required by the EU, Spanish and Catalan authorities, and in particular, by IDIBAPS patrons. Given that there is a general shortage of senior female researchers in the workforce, this problem cannot be solved only via recruitment, but must also involve a strong element of promoting young female researchers to advance to senior levels in their research careers.

Implication: IDIBAPS, in close collaboration with HCB, must develop strong career support mechanisms for promising female researchers.

5.1.2.1.3 PROFILE - PROGRESSIVE DISSOCIATION BETWEEN BASIC (IDIBAPS) AND CLINICAL (HCB) RESEARCHERS

The success of IDIBAPS to date is credited to a large extent to the historical ability of IDIBAPS and HCB researchers to bridge between basic and clinical research activities. However, the increasing complexities of research along the entire translational spectrum, which leads to increased specialisation of the researcher, coupled with recruitment policies at HCB that in recent years have been more oriented to expertise in clinical practise, with decreased importance to translational research capability, are placing this model in jeopardy.

If it is not possible to retain the previously successful model based on a strong cohort of researchers capable of fully translational research, then an alternative model will need to be developed. This may be a model of dual leadership with basic and clinician researchers. This alternative model may imply the risk of not reaching the basic-clinical synergy necessary to achieve similar levels of success as in the past.

Implication: Whichever model is adopted; its successful implementation will depend very heavily on the recruitment policies of HCB. Therefore, HCB senior management must be involved from the outset in defining the future model and then enacting appropriate recruitment policies to implement the model.

5.1.2.1.4 PROFILE - INNOVATIVE CULTURE (MENTALITY) IS WELL DEVELOPED ONLY IN SOME RESEARCH GROUPS

In the past, biomedical research success was measured by the generation of new knowledge as published in high impact journals. However, today, the patrons of IDIBAPS are increasingly measuring success as the translation of research results into clinical practice. This may be achieved not just through publication in journals, but also by the publication of clinical guidelines that change clinical paradigms, the licencing of patents or the creation of spin-off companies. Many researchers at IDIBAPS and HCB have not yet assimilated the change of focus from pure research to research and innovation, and this is hampering IDIBAPS from achieving its full potential impact on clinical practice. Recruiting in young researchers who have been educated in more innovative environments helps somewhat, but when

these new recruits enter environments dominated by established researchers set in the old paradigm, the effect is limited.

Implication: *IDIBAPS, in close collaboration with HCB, must develop policies that facilitate and promote an innovative culture.*

5.1.2.2 DIFFICULTY IN CAPTURING / RETAINING TALENT

More than 70% of IDIBAPS group leaders are physicians from HCB, the rest are researchers directly contracted by IDIBAPS or ICREA, CSIC, UB. For the first group, their ability to conduct research is limited by the time they are permitted to dedicate to research, which is always in conflict with their clinical practise and teaching workload. The ability of HCB to provide adequate time for research has been negatively affected by funding pressures in recent years, and this impedes attracting clinicians who want to undertake top-quality science.

For the second group, directly recruited by IDIBAPS, the attractiveness of working in association with a leading hospital environment is insufficient on its own to attract top talent; competitive working conditions and salaries are also required in order to attract the best researchers in the market. Funding pressures at IDIBAPS have also negatively affected capacity to offer attractive packages. The lack of international recognition of IDIBAPS as a brand is also a negative factor.

Exacerbating the above, a large number of leading clinician researchers at both HCB and IDIBAPS are close to retirement. If they are not replaced with equivalent junior talent, then the capacity of IDIBAPS to maintain the quantity and quality of scientific output will be severely compromised.

Implication: *A strategy to deal with these issues comprehensively across both IDIBAPS and HCB is urgently required. If there is insufficient financial capacity to competitively recruit senior researchers, then alternatives must be sought, such as recruiting promising junior researchers and offering fast-track career development options to compensate lower salaries with more seniority and research resources, or creating joint appointments with other leading research centres, so the high cost of top class group leaders are shared. Further alternatives need to be considered and evaluated.*

5.1.2.3 LOW INSTITUTIONAL CAPACITY TO MANAGE CONTRACTS AND STAYS OF INTERNATIONAL RESEARCHERS

Complexities in the legalities and management of hiring international researchers (e.g. work visas) and limitations in terms of remuneration and other benefits, can make it difficult to attract international talent and dealing with the issues adds significant administrative overhead.

Implication: *Although legal impediments cannot be directly resolved by IDIBAPS, IDIBAPS can use its influence to lobby at Catalan and Spanish levels to ensure that future changes to relevant laws are positive in respect to supporting international talent attraction. Internally, IDIBAPS must develop flexibility and capacity to manage the contractual issues as best as possible.*

5.1.2.4 NEED TO IMPROVE THE NUMBER OF PUBLICATIONS IN HIGH RANK JOURNALS

Although not the only metric of scientific production and excellence, publications are a key measure and one that is used frequently by external evaluating bodies. Although IDIBAPS is still leader in these metrics among the Institutos Sanitarios ISCIII, IDIBAPS does not currently obtain the **highly excellent** category of at least 75% of publications in the top quartile (Q1). Furthermore, the lack of focus on publishing in high ranked journals is widespread, with only some 20% of research groups attaining more than 75% of publications in Q1.

The weakness in this metric is an impediment to IDIBAPS achieving top marks in important external evaluations, such as Severo Ochoa awards and CERCA evaluations.

Implication: *While recognising that it is a significant challenge to attain 75% in Q1 and a normalized impact index >1.5 related to the world median in the respective areas for such a large and multidisciplinary centre, a significant focus must be placed on increasing the publication ranking. IDIBAPS researchers must be discouraged from submitting to lower ranked journals, and provided with support and training in scientific writing, presentation, graphics and other related figures in order to increase success rates when submitting to higher ranked journals.*

5.1.2.5 INSTITUTIONAL COMPLEXITY

Although IDIBAPS as an operational institution has been highly successful, the legal institutional complexity behind the scenes causes multiple points of inefficiency and directly impedes certain activities. In particular:

5.1.2.5.1 TWO LEGAL ENTITIES (IDIBAPS / FCRB) WITH COMPLEMENTARY AND OVERLAPPING PURPOSES.

Although significant effort has been made in recent years to avoid duplication of management activities carried out by IDIBAPS and FCRB, still many inconveniences emerge from having two different entities of distinct types, with IDIBAPS a consortium and FCRB a foundation. The merger of the two entities has been attempted, but so far has not been executed, mainly due to financial issues.

Implication: *The SUMA merger process must be pursued with urgency.*

5.1.2.5.2 LOW LEVEL OF STABLE FINANCING IN RELATION TO ACTIVITY AND PRODUCTION

Measured by outputs and institutional dimension, if compared to other high performing research centres such as CRG or IRBB, IDIBAPS/FCRB should be one of the Generalitat's top-funded institutions. However direct government funding of IDIBAPS is much lower (both in absolute and % terms) than that received by these other centres, in large part due to the institutional complexity of presenting all its activities in a consolidated total. Furthermore, as there is no multi-year funding plan agreed with the Generalitat, there is no forward stability in budgeting. IDIBAPS' ability to seek finance, despite its low debt and high equity, is also very restricted both for this reason as well as the current difficult economic situation of the Generalitat. Contributions in funds and/or resources from HCB and UB are generally

limited to the salaries of the ascribed researchers and occasionally committed on an action-by-action basis rather than as part of a long-term common strategic plan.

The low level of core funding and its uncertain stability impact negatively on IDIBAPS adequately addressing operational issues that require long-term planning and implementation, such as HRS4R, IT systems, open access, gender policies, outreach activities, etc.

Implication: *IDIBAPS should open discussions with its Patrons to secure a multi-year funding commitment to support its multi-year strategic plan.*

5.1.2.5.3 RESEARCHER'S INABILITY TO SOLELY MANAGE THEIR OWN RESOURCES

An example of institutional complexity affecting daily operations is when an HCB employed researcher is using FCRB project funds in an IDIBAPS laboratory. It is impossible for the researcher to have a complete vision of the resources engaged in a project and they must use multiple different processes for approvals, recruitment, management and reporting.

Implication: *A key benefit of the SUMA merger must be streamlined management and reporting of research resources.*

5.1.2.5.4 CONFUSION OVER THE ROLE OF EACH ENTITY AND LACK OF EXTERNAL BRAND RECOGNITION

Even within the IDIBAPS/FCRB/HCB environment, many staff are confused as to which entity is responsible for which activities. Externally, there is very little recognition of IDIBAPS, while HCB is relatively well known internationally as a leading research and teaching hospital.

The lack of external recognition of IDIBAPS is a weakness when dealing with new academic or industry partners, and when seeking media coverage and/or social impact. This subservience of IDIBAPS to the HCB brand has also impeded the development of international relationships at an institutional level (in contrast to the strong international relationships developed via individual relations of IDIBAPS researchers through EU projects and other international programmes).

Implication: *The SUMA merger will not resolve the dilemma of the IDIBAPS vs HCB brand. In any case, the legal names and structures do not need to be directly reflected in what brand is presented to the public. The long-term vision for branding and international relations must be carefully considered in order to significantly increase overall brand recognition and capital of HCB and its research, and a marketing and communications plan developed to support the attainment of this vision.*

5.1.2.6 LOW INSTITUTIONAL INTERNATIONALISATION AND LOW INTERNATIONAL RECOGNITION OF CLINIC TRADEMARK

The IDIBAPS name is not well recognised outside of the circle of immediate collaborators, and even the Hospital Clinic trademark is relatively unknown given its very strong ranking among leading research hospitals in Europe. This lack of recognition presents daily barriers to IDIBAPS researchers seeking to develop international networks and collaborations, in attracting international talent, and in commercialising IDIBAPS intellectual property.

Implication: A strong effort must be made to definitively resolve the question marks over the IDIBAPS brand, and once this is in place, to develop a marketing strategy in collaboration with HCB to achieve international recognition commensurate with IDIBAPS size and performance.

5.1.2.7 RESEARCH GROUP ORGANISATION

The current organisation of research groups is not functional and lacks logical consistency and coherence. Research areas are too broad, the structure of teams are not well understood internally, let alone externally, and the structure does not readily lend itself to integrating researchers from UB, CSIC or other third parties. Presentations of organisational structures on the web and in institutional brochures are extremely confusing and outdated.

Implication: The internal structure must be reorganised. However, this must be carefully managed to ensure that the resulting structure meets requirements for supporting key strategic objectives, such as providing career progression opportunities for young and/or female researchers, fostering a culture of innovation, collaboration and excellence, and operational efficiency.

5.1.2.8 OVERLOADED MANAGEMENT

Several factors are contributing to significant work overload in the management staff, which in turn leads to stress and low morale that has resulted in very capable staff leaving the institute. These include:

- Institutional complexity, as described above, which generates inefficient work processes;
- Increased complexity of dealing with multiple and new competitive funding sources, with associated application preparation, project control and reporting overheads;
- Lack of sophisticated financial, project, relationship, IP and management IT systems, that would reduce the burden of common and repetitive clerical tasks;
- Shortage of guaranteed structural funds to support management, restricting capability to recruit additional staff when workloads rise and to offer competitive salary packages to attract and retain quality staff.

Implication: Specific actions must be developed to address these issues: process complexity must be reduced (this should be a key objective of the SUMA merger); a program of IT systems upgrades must be presented, approved and financed; professional career development plans should be implemented for all management staff, to ensure they receive appropriate training and to manage workloads, life-work balance, career expectations and overall morale; the level of funding for management must be appropriately dimensioned to forecast centre levels of activity.

5.1.2.9 SHORTAGE OF LABORATORY SPACES AND AGING EQUIPMENT

Although IDIBAPS has more than 8.000m² of wet labs, the forecast increase in research activity requires more space, particularly for clinical research, which will not be possible within current buildings. Furthermore, IDIBAPS faces significant difficulties in the renovation of facilities and infrastructures, mainly due to the lack of core budget for infrastructure renewal and the dramatic reduction in recent years of competitive national calls to acquire expensive equipment. The requirements are particularly

acute in a number of key platforms such as the animal facility and bioinformatics. This situation in lab space is further compounded by the dramatic limitations in space for clinical research at HCB.

If the situation is not rectified, IDIBAPS is likely to lose its competitiveness and will find it increasingly difficult to retain talent and maintain scientific output.

Implication: IDIBAPS must first optimise existing allocations of laboratory spaces and develop a well-defined roadmap of future requirements for both space and equipment. Based on this roadmap, IDIBAPS must seek to secure additional funds for laboratories and equipment renewal, via direct contributions from Patrons, via competitive calls, and via strategic alliances with other local entities.

5.1.3 OPPORTUNITIES

5.1.3.1 PROMOTE TALENT AND EXCELLENCE

Although talent attraction has been identified as a current weakness of IDIBAPS, it also presents a significant opportunity. If IDIBAPS can successfully leverage its leadership and competitive advantage to attract top talent, both basic and translational, nationally and internationally, then it will set itself up for a very successful future. Strong talent is capable of winning high levels of competitive funding, and the improved outputs and impact will also help secure core funding and investment by Patrons. Various mechanisms exist which IDIBAPS has not fully tapped into, including ICREA, BITRECS, 50/50, 80/20, etc. Coordination with the talent recruitment process of the HCB is required and the future discussion of the Direction of the HCB with the HCB association of physicians is an excellent opportunity to consider the relevance of research in recruitment criteria and the value of various programs to promote the figure of clinician scientist career (e.g Rio-Hortega, Juan Rodes, BITRECS) for permanent positions at HCB.

Implication: Actions relating to improving talent attraction and retention must have high priority in the strategic plan and coordination with HCB must be promoted

5.1.3.2 SYNERGIES FROM INSTITUTIONAL REFORM AND MERGER

The planned SUMA merger of IDIBAPS and FCRB is a major opportunity to simplify management and optimise resources. If done properly, significant synergies may be realised with a notable impact on the performance, quality and quantity of impact of the centre's activities.

However, the process of the merger itself will generate significant extra workload while it is in progress, and if not planned and executed properly, many of the expected synergies may fail to be realised.

Implication: The SUMA merger must be very carefully planned, and adequately resourced, to ensure the desired outcomes are achieved.

5.1.3.3 SECURE NEW RESOURCES

Although there is the threat of IDIBAPS failing to maintain current resourcing levels from patrons and competitive funds, there is also the opportunity to secure significant new resources. Well planned and

positioned initiatives could deliver significant benefits to IDIBAPS and cement its leadership position for the coming decade.

These include, amongst others: alliances with complementary institutions and research centres in strategic infrastructures (BSC, Estabulari, CNAG, ALBA, etc); recruitment of junior researchers with strong potential for ERC and other prestigious EU grants; stronger commitment from patrons; a revival of Spanish national funding for R&D; proactive and strategic pursuit of clinical trials; gains from optimisation of spaces and services; etc.

Implication: *Future income and resources must not be left to chance. Future needs must be carefully mapped, and proactive strategies developed to ensure that funding sources are diversified and effort is focused on those sources with highest potential.*

5.1.4 THREATS

5.1.4.1 CONCEPTUAL AND TECHNOLOGICAL CHANGES IN BIOMEDICAL RESEARCH TO WHICH IDIBAPS HAS LIMITED CAPACITY TO ADAPT (BIG-DATA, OPEN-DATA, ANIMAL RESEARCH, ...)

Technologies for biomedical research are evolving very quickly, and the potential exists for IDIBAPS to make significant investments in research infrastructures that become outdated before they are amortised.

Implication: *IDIBAPS must develop its future infrastructure roadmap with care and ensure to involve significant external input from both leading researchers and technology provider companies.*

5.1.4.2 LOSS OF TALENT AND LEADERSHIP

Talent has been the primary strength of IDIBAPS, especially talent of the clinician scientist profile. If this talent is not renewed as the current aging leadership retire, IDIBAPS will lose leadership and positioning both in translational and clinical research.

Implication: *IDIBAPS must focus strongly on long-term HR planning and seek to maintain an attractive work environment that is internationally competitive.*

5.1.4.3 POLITICAL ACTIONS AND ENVIRONMENTAL CONDITIONS AFFECTING FUNDING FOR SCIENTIFIC RESEARCH

IDIBAPS, as with any research centre, is highly dependent on both direct public funding and funding through competitive public calls. At a local and national level, the economic crisis and political instability has had a significant negative impact on levels of funding available. This has been partially offset by the success of IDIBAPS in securing EU competitive funds. However, securing EU funds is increasingly difficult due to intense competition, and with a new framework programme due in 2021 combined with Brexit, risks exist that IDIBAPS will not find as many relevant calls as it has in the past.

The uncertainty and instability is as much of a risk as the level of funding itself, in that it impedes forward financial planning and deters potential recruits from coming to IDIBAPS.

Implication: *IDIBAPS must maintain a strong lobby and presence at Catalan, Spanish and EU levels in order to ensure it continues to get fair and reasonable access to research funding.*

5.1.4.4 INCREASING COMPLEXITY AND RESPONSIBILITY OF MANAGEMENT

Despite frequent talks of simplification, in practise the operating environment for research centres is becoming increasingly complex, with ever increasing demands for reporting and justifications related to societal concerns over transparency, ethical conduct and good financial management. Compliance with each new reporting requirement comes at a cost, both financial and in terms of managerial effort and responsibility.

The threat is that the overhead and restrictions become so great that they significantly impede the capability of the centre to operate.

Implication: *IDIBAPS must join with the rest of the scientific community and form a strong lobby to Catalan, Spanish and EU authorities in order to ensure that the burden of regulations remain reasonable.*

5.2 APPENDIX 2: CHRONOGRAM AND MILESTONES

(in progress, to be finished)

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.1	Drive Excellence in Research	Director							
4.2.1.1	Recognise and Reward Excellence	Strategy							
4.2.1.1.1	Implement criteria of excellence consistently across the organisation	Strategy							
4.2.1.1.2	Communicate Culture of Excellence actions	Communication							Comm. Plan
4.2.1.1.3	Integrate Excellence Criteria into the researcher career at IDIBAPS	SCO							research career doc updated
4.2.1.2	Promote Scientific Leadership	Director							
4.2.1.2.1	Promote Promising Junior Leaders	Director							
4.2.1.2.2	Support Senior Leaders	Director							

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.1.3	Promote Multidisciplinary and Basic-Applied Connections	Director		█	█	█			
4.2.1.4	Optimise Research Organisational Structures	Strategy			█	█			
4.2.1.5	Attain the HSR4R accreditation	SCO			█	█	█	█	
4.2.1.6	Improve Excellence in Scientific Publications	Strategy			█	█			
4.2.2	Develop Human Resources		█	█	█	█	█	█	
4.2.2.1	Ensure Talent Promotion and Retention	Director			█				Group
4.2.2.1.1	Increase the 50/50 Programme	Director							positions covered
4.2.2.1.2	Launch the 80/20 Junior Programme	Director			█	█	█	█	positions covered
4.2.2.1.3	Improve the 80/20 Senior Programme	Director				█	█	█	Positions
4.2.2.1.4	Give Value to Competitive Scientific HR Programmes	Director					█	█	document of scientific career valorization

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.2.2	Promotion of Sabbatical Stays	Director							
4.2.2.3	Ensure Talent Attraction and Identify Alternate Funding Mechanisms	Director							
4.2.2.4	Ensure Generational Turnover in Scientific Leadership	Director					S1 S2	S1 S2	Deliverable or result
4.2.2.4.1	ICREA Research Professors	Director							
4.2.2.4.2	R3B and R4 Researchers with Prestigious Projects	Director							
4.2.2.4.3	Joint Appointments with other Centres	Director							Recruitments
4.2.2.5	Update the Researcher Career Strategy	Director							Recruitments
4.2.2.6	Develop and Implement Career Support Mechanisms for Female Researchers	SCO							Recruitments
4.2.2.7	Implement and Open, Transparent and Merit-Based Recruitment (OTM-r) Policy	Strategy							

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.2.8	Evaluate alternative mechanisms to secure talent	Director							Gender plan
4.2.2.9	Support to other actions	Director							
4.2.3	Consolidate and Optimise Technical Infrastructures and Services	Strategy							
4.2.3.1	Develop the Infrastructure Roadmap	Strategy							
4.2.3.2	Pro-actively leverage local institutional relations to gain access to their facilities	Director							
4.2.3.3	Identify and lead community initiatives for shared infrastructures	Core Facility director							Commission and Roadmap
4.2.3.4	Foster a culture of continuous improvement and innovation	Adhoc commission							Signed agreements BSC, CNAG ALBA
4.2.4	Drive Innovation, Valorisation and Transfer of Technology	KTT							Signed agreements
4.2.4.1	Establish a training programme in Innovation and Technology Transfer	KTT							Document of proposed innovations

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.4.2	Recognise and Reward Innovation	Director							
4.2.4.3	Promote Innovation in Internal Communications	Communication							Training program
4.2.4.4	Promote Interaction with the Innovation Community	KTT							
4.2.4.5	Facilitate Technology Transfer Activities	Director							
4.2.4.6	Strengthen the Capacities of the IDIBAPS KTT Office	Strategy							Deliverable or result
4.2.4.7	Develop Institutional Relationships with Industry	KTT							Events IPR, Spin-off documents Agreements
4.2.5	Communication and Outreach								
4.2.5.1	Improve Internal Communication	Communication							
4.2.5.1.1	Creation of the IDIBAPS Intranet	IT							
4.2.5.1.2	Welcome Pack and Welcome Day	Communication							
4.2.5.1.3	Internal Bulletin	Communication							

Ref	Actions	Responsible	2018		2019				2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	S1	S2	
4.2.5.1.4	Installation of Information Screens	IT									
4.2.5.2	Be a Prestigious Brand Nationally and Internationally	Communication									Intranet
4.2.5.2.1	Evaluate a Change of Name	Communication									Welcome pack and events
4.2.5.2.2	Create a new Website	Communication									Bulletin
4.2.5.2.3	Promote IDIBAPS in National and International Media	Communication									Screens
4.2.5.2.4	Make IDIBAPS More Well-Known in the campus clinic	Communication									
4.2.5.3	Be a Reference in Scientific Outreach	Communication									Report
4.2.5.3.1	Training of Researchers	HR									Website and annual updates
4.2.5.3.2	Creation and/or Acquisition of Outreach Materials	Communication									
4.2.5.3.3	More Active Presence in Divulcation Activities	Communication									
4.2.5.3.4	Organise a Science Festival at IDIBAPS	Communication									

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.5.3.5	Open Day for the Public	Communication							Training program
4.2.6	Cultivate Institutional Relations								Materials
4.2.6.1	Protect the good governance of IDIBAPS								
4.2.6.2	Secure voice on key lobbies								Events
4.2.6.3	Secure longer-term commitments for funding								Events
4.2.7	Expand Internationalisation								
4.2.7.1	Establish the Internationalisation Committee	Strategy							
4.2.7.1.1	Develop the Internationalisation plan	Strategy							
4.2.7.1.2	Organise events with international focus	Communication							Deliverable or result
4.2.7.1.3	Prioritise and allocate resources for Internationalisation activities	Management director							

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.7.2	Seek funding that supports internationalisation	Director							
4.2.7.3	Develop Communications that support Internationalisation	Communication							
4.2.8	Grow Management and Operational Capacity								Committee established
4.2.8.1	Rethink the management organization to be more competitive, more efficient and better aligned to the projects								Internationalisation plan
4.2.8.2	Enhance the management information technology system								Events program
4.2.8.3	Identify and pursue all available infrastructure funding opportunities	Patronage office							Budget
4.2.9	Implement Merger with FCRB (SUMA)								Applications
			2018		2019		2020		Presentations
Ref	Actions	Responsible	S1	S2	S1	S2	S1	S2	
4.2.1	Drive Excellence in Research	Director							

Ref	Actions	Responsible	2018		2019		2020		Deliverable or result
			S1	S2	S1	S2	S1	S2	
4.2.1.1	Recognise and Reward Excellence	Strategy							
4.2.1.1.1	Implement criteria of excellence consistently across the organisation	Strategy							
4.2.1.1.2	Communicate Culture of Excellence actions	Communication							

5.3 APPENDIX 3: HR4SR ACTION PLAN

HR STRATEGY FOR RESEARCHERS– UPDATED ACTION PLAN (2017-2020)

Name Organisation under review: Institut d'Investigacions Biomèdiques August Pi i Sunyer

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Web-link to published version of organisation's HR Strategy and Updated Action Plan:

<http://www.idibaps.org/research-career/hrs4r.html>

SUBMISSION DATE: 25/09/2017

IDIBAPS HR STRATEGY FOR RESEARCHERS

The August Pi i Sunyer Biomedical Research Institute (IDIBAPS) is a centre for research of excellence that tackles high-prevalence, high-morbidity and high-mortality diseases in the field of biomedicine. Founded in 1996, it is a public consortium whose members are the Catalan Government, the Hospital Clínic of Barcelona, the University of Barcelona's School of Medicine and the CSIC Biomedical Research Institute in Barcelona. The Institute gathers 1.400 research professionals in 110 research groups publishing around 1.000 original articles each year with over 6,000 points of impact factor.

In 2011, IDIBAPS signed a commitment to the principles of "The European Charter for Researchers" and "The Code of Conduct for the Recruitment of Researchers". Moreover, it became a member of the Third Cohort of institutions aiming to implement its own "Human Resources Strategy for Researchers". In 2015 after conducting an internal gap analysis and delivering its 2015-2018 Action Plan, IDIBAPS was awarded with the logo "HR Excellence in research".

Currently, IDIBAPS has been working on its interim assessment. As a result, an updated Action Plan (2017-2020) is presented.

HR Vision

IDIBAPS aims to attract, retain and integrate talent by implementing good recruitment practices and offering a highly motivating working environment to guarantee professional growth for the researchers and scientific excellence in biomedicine.

HR Strategic Objectives 2015-2020

1. Promote and enhance recruitment policies aligned with OMT-r principles
2. Support talent by offering training and mentoring to the next generation of scientists
3. Offer a positive work environment with special emphasis on gender equality

4. Ensure the highest standards for professional conduct including the review the Code of Good Practice in Research and IPR policy for research integrity

UPDATED ACTION PLAN (2017-2020)

The actions proposed as part of the 2017-2020 Action Plan have been approved by the Executive board and will enable to fulfil the HR vision and HR Strategic Objectives for the period 2015-2020 in alignment with the European Charter and Code principles. These actions have been grouped in the 4 thematic areas: Ethical and professional aspects, Recruitment, Working conditions and social security and Supervision. The same HRS4R Monitoring Committee as in the first Action Plan (HRS4R Manager, HSR4R Coordinator, Director of Strategy and Head of the Human Resources Office) will keep on working in the implementation, follow-up and reporting of the actions. All achievements and possible adjustments will be reported to the Executive Board.

I. Ethical and professional aspects			
Actions (A)/New Action (NA)	Timeframe	Deliverables (D) / Key Performing Indicators (KPIs)	Coordinator
NA1. Integrate the HRS4R vision and strategy into the institutional Strategic Plan (2018-2021)	2017. Q4	IDIBAPS Strategic Plan	Director of Strategy
A2. Design and organize the “IDIBAPS Welcome Day”	2017. Q4	D 2.1 Event programme	Institutional Actions Office
A3. Dissemination of the Welcome Pack	2017. Q4	KPI 3.1 Number of packs delivered KPI 3.2 Number of downloaded versions (new KPI)	Communication Office
A4. Run periodically the “IDIBAPS Welcome Day”	2018. Q1	D 4.1 Satisfaction survey KPI 4.1 Number of attendants versus number of new employees KPI 4.2 Level of attendants’ satisfaction	Institutional Actions Office
NA2. Update the “Code of Good Practice in Research”	2018. Q2	Updated version approved by the Board of Governors (D); Number of downloaded versions (KPI); Number of dissemination actions (KPI)	Institutional Actions Office
NA3. Design and deliver a farewell pack	2019. Q2	Farewell pack (D); Number of packs delivered vs. number of people leaving IDIBAPS (KPI); Number of dissemination actions (KPI)	Scientific Coordination Office

NA4. Review the institutional policy for IPR	2019. Q1	IDIBAPS IPR reviewed Policy approved by the Board of Governors (D); Number of downloaded versions (KPI)	KTT Office
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II. Recruitment			
Actions (A)/New Action (NA)	Timeframe	Deliverables (D) / Key Performing Indicators (KPIs)	Coordinator
A9. Establish a standard process to recruit new staff based in the Code of Conduct for the Recruitment of Researchers	2018. Q2	D 9.1 Protocol	Human Resources Office
A10. Design the templates required to implement the standard process	2018. Q3	D 10.1 Templates	Human Resources Office
A11. Recruit staff using the new standard process	2019.Q1	D 11.1 Up-date of the protocol and/or the templates (if needed) KPI 11.1 Number of job positions published and managed according to the new protocol KPI 11.2 Researchers' level of satisfaction (researchers who open the job positions)	Human Resources Office
NA5. Specific training on conducting interviews for potential interviewers as part of the annual training Plan offered by IDIBAPS and FCRB employees	2019. Q2	Number of participants to the training sessions (KPI) & Level of satisfaction (KPI)	Human Resources Office

III. Working conditions and social security			
Actions (A)/New Action (NA)	Timeframe	Deliverables (D) / Key Performing Indicators (KPIs)	Coordinator
A13. Up-date of the Research Career Document	2018. Q2	D 13.1 Document up-dated	Scientific Coordination Office
A14. Disseminate the document "Research Career at IDIBAPS" up-dated	2018. Q3	KPI 14.1 Number of dissemination actions KPI 14.2 Visits to the section "Research Career at IDIBAPS" in the IDIBAPS website or newsletter	Communication Office
NA6. Definition of standard professional categories	2019. Q2	Standard professional categories approved by the Board of Governors (D)	Human Resources Office
NA7. Definition of salary scales	2019. Q2	Salary scales approved by the Board of Governors (D)	Human Resources Office
NA8. Design a gender policy	2018. Q2	Gender policy approved by the Board of Governors (D)	Institutional Actions Office
NA9. Design an awareness campaign on the importance of gender equality and perform a short-term impact assessment	2019. Q1	List of key messages of the dissemination actions/activities (D); Degree of the personnel's social perception (at the Institute level and for each professional category) before the campaign (KPI); Number of dissemination actions/activities for the campaign (KPI); Degree of the personnel's social perception (at the Institute level and for each professional category after the campaign (KPI)	Institutional Actions Office
NA10. Giving visibility and promoting women's scientific careers (communication campaign, scientific seminars and programmes/prizes opportunities)	2019. Q3	Number of dissemination actions within the campaign (KPI); Ratio of women vs. men/ seminar (KPI) & Participants in disseminated programmes vs. total candidates (KPI)	Scientific Coordination Office

IV. Supervision			
Actions (A)/New Action (NA)	Timeframe	Deliverables (D) / Key Performing Indicators (KPIs)	Coordinator
NA11. Support the creation of a platform for predoctoral researchers	2017. Q4	List of support actions (D)	Scientific Coordination Office
NA12. Perform an impact assessment of the Stepping- Stone programme	2019. Q2	Survey to the R1 and R2 research community (D) & Impact assessment report (D)	Scientific Coordination Office
NA13. Supervision of the mentoring programme for R1 researchers	2018. Q2	Creation of an IDIBAPS- UB commission to supervise the mentoring (D); Number of meetings (KPI)	Direction of Strategy

5.4 APPENDIX 4: LIST OF ABBREVIATIONS

BSC	Barcelona Supercomputing Center
CDTI	Centro para el Desarrollo de Tecnología Industrial (Centre for the Development of Industrial Technology)
CEK	Esther Koplowitz Centre
CNAG	Centro Nacional de Análisis Genómico (National Centre for Genomic Analysis)
CSIC	Consejo Superior de Investigaciones Científicas (Spanish Superior Council for Scientific Investigation)
EC	European Commission
EU	European Union
FCRB	Fundació Clínic per a la Recerca Biomèdica (Clinic Foundation for Biomedical Research)
FTE	Full Time Equivalent
GenCat	Generalitat of Catalonia (the government of the autonomous community of Catalonia)
H2020	Horizon 2020 (the major funding programme of the European Union for 2014-2020)
HCB	Hospital Clínic Barcelona
HR	Human Resources
HR4SR	Human Resources Strategy for Researchers (a programme of the European Commission)
ICREA	Institució Catalana de Recerca i Estudis Avançats (Catalan Institute for Research and Advanced Studies)
ISCIII	Instituto de Salud Carlos III (Charles 3rd Institute of Health)
IT	Information Technology
KTT	Knowledge and Technology Transfer
NGO	Non Governmental Organization
OECD	Organisation for Economic Co-operation and Development
OTMR	Open Transparent and Merit Based Recruitment
PI	Principal Investigator
SWOT	Strengths, Weaknesses, Opportunities and Threats
TT	Technology Transfer
UB	University of Barcelona
VAT	Value Added Tax