

# **STRATEGIC PLAN**

**2018–2021**

**FUNDACIÓ INSTITUT D'INVESTIGACIÓ EN  
CIÈNCIES DE LA SALUT  
GERMANS TRIAS I PUJOL**



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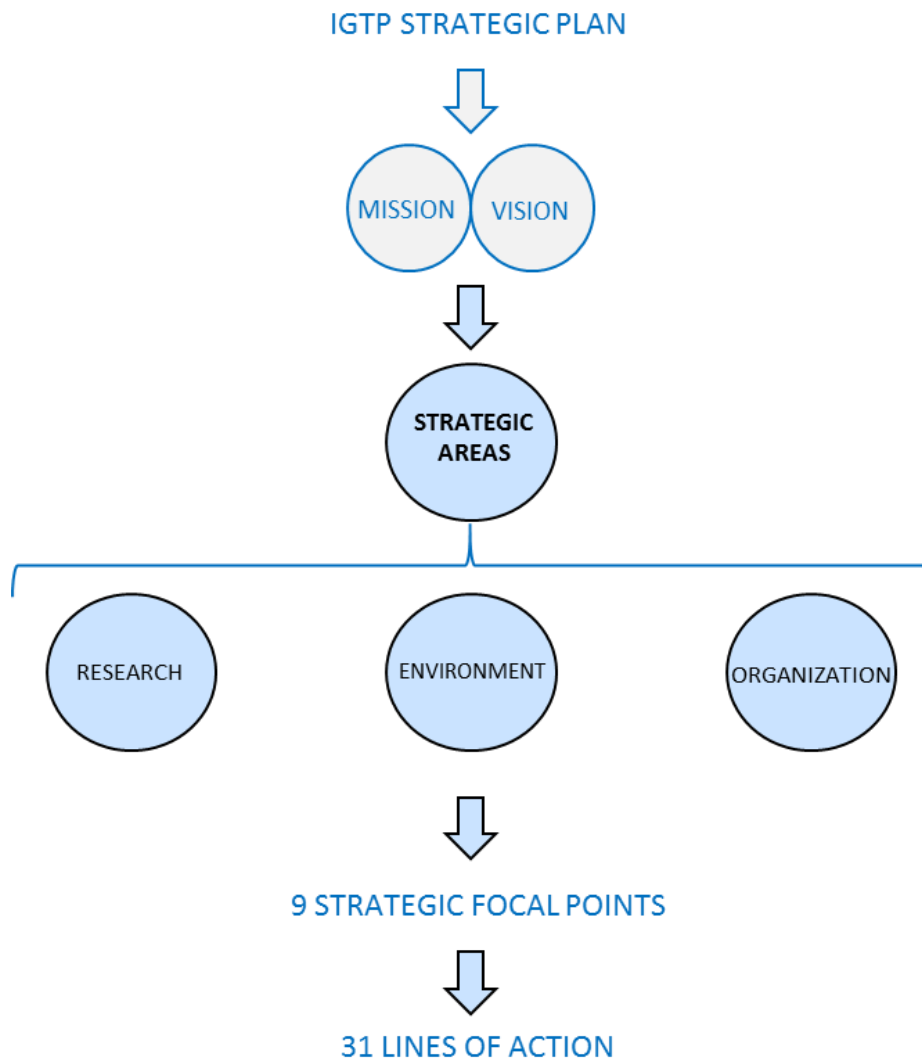
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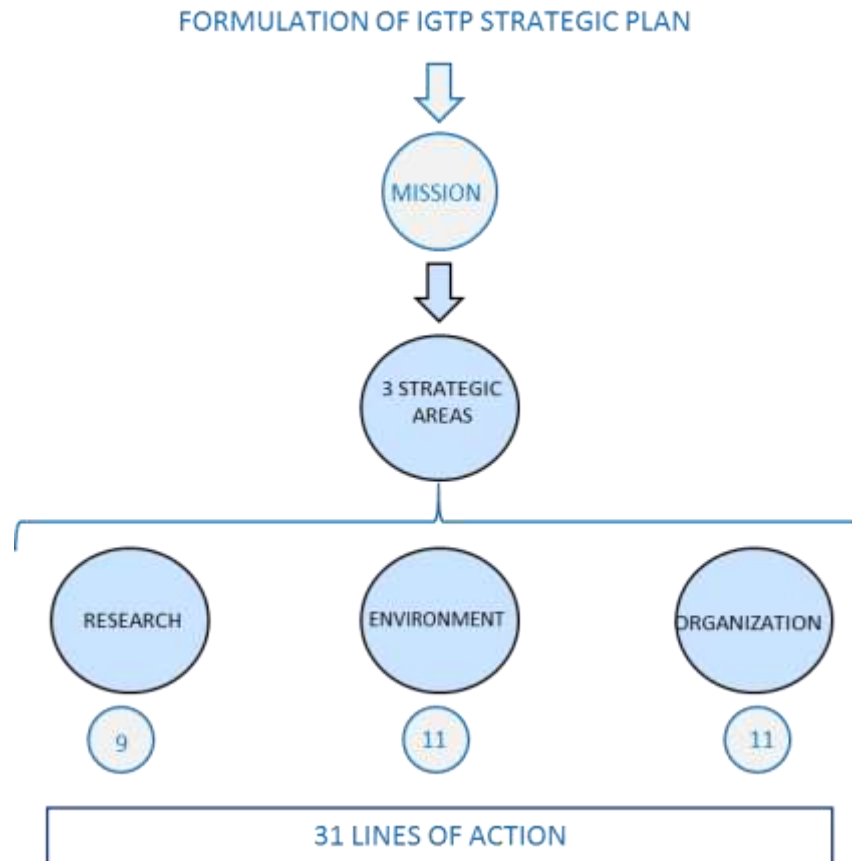
## Executive Summary

### Structure of the Strategic Plan





## Formulation of the Strategic Plan



*IGTP's Mission* is to carry out **translational research** with maximum efficiency in order to improve **people's health and quality of life**.

### Strategic Focal Points:

#### AREA 1: RESEARCH

- Define a **research** model focused on the interaction between specialization fields in the campus and translational research
- Foster the recruitment and preservation of **talent**
- Promote **innovation**, the transfer of knowledge and the development of new business models

#### AREA 2: ENVIRONMENT

- Promote the active and effective **dissemination** of research and results, as well as the services and activities of the institution

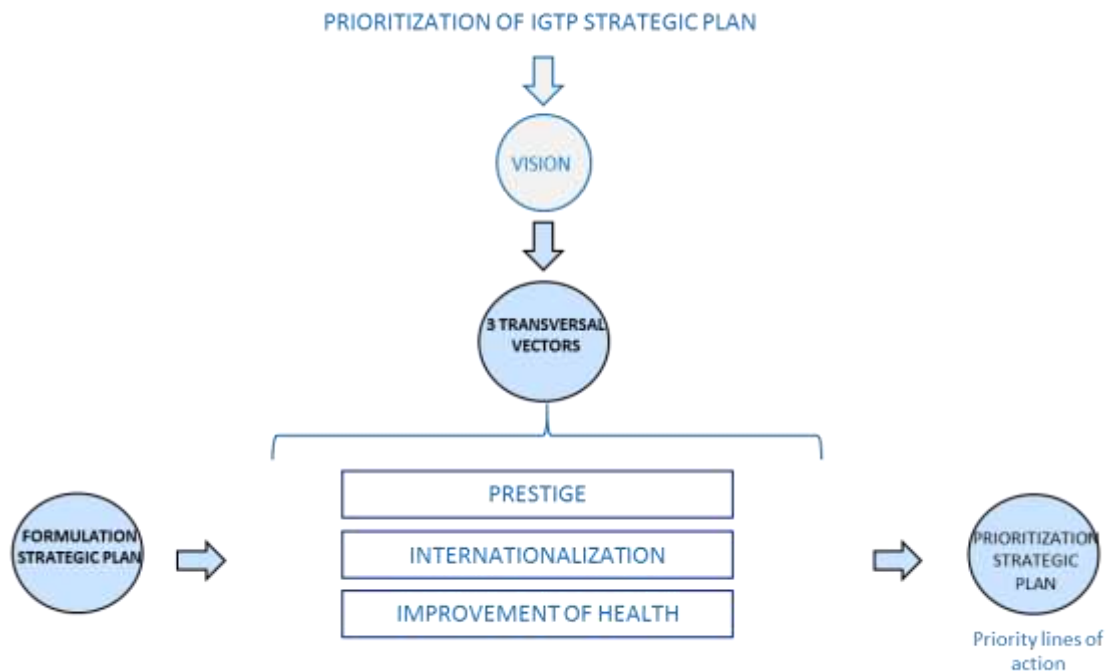


- Increase technological and thematic **relationships** with regards to high-potential transversal programmes between the campus and the national and international level
- Promote **teaching** as a strategy for training in research and for its translation to the different stakeholders of the health system

*AREA 3: ORGANIZATION, RESOURCES AND SERVICES*

- Achieve a good management model in all the **processes** and activities of the institute
- Instrumentalize **training** as a tool for developing skills, talent and research capacity
- Establish a strategy for the scientific and technical **services** of the institution that consolidates, strengthens and sustains them

### Prioritization of the Strategic Plan



*IGTP's Vision* is to be a **prestigious** biomedical research centre, a benchmark for Catalonia and the world, which contributes to the **improvement** of people's **health and quality of life** through the **valuation** of its research.



## Introduction

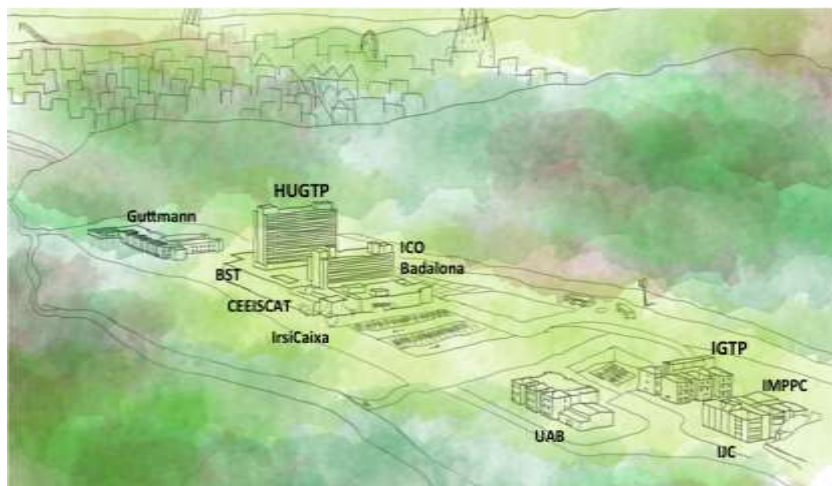
### Justification and Premises for the Strategic Plan

The *IGTP* is a research centre associated with a university hospital in a biomedical campus. The Institute needs to have its strategic objectives perfectly defined and at the same time have an organizational culture shared by the people that work there so that they can achieve the objectives set. Now that the 2014–2017 Strategic Plan has ended, a new Plan is needed for the 2018–2021 period, which responds to the *IGTP*'s needs and which meets society's obligations and expectations.

The Can Ruti Campus, where the *IGTP* is located, is unique in that it is made up of numerous prestigious research institutions, many of which are recognized as *CERCA* centres. All these institutions, and others, not physically located on the Can Ruti Campus, form part of the *IGTP*. This fact is an enriching and differential element compared to other biomedical research institutes, which is capable of generating many synergies but which at the same time makes the global management of the campus and the institute itself somewhat complex, with the *IGTP* historically acting as the umbrella organisation and the institute accredited with the Carlos III Institute of Health (*ISCIII*) and the Research and Innovation in Health Strategic Plan (*PERIS*) of the *Generalitat de Catalunya*. At present, the *IGTP* has the function, among others, of providing transversal service and facilitating a coordinated operating dynamic that is useful for all campus researchers, of whatever institution, to achieve maximum development of their research potential as applied to health.

The *IGTP* is made up of the following institutions:

- Germans Trias i Pujol University Hospital (*HUGTiP*)
- Catalan Institute of Oncology (*ICO*)
- IrsiCaixa
- Fight AIDS Foundation (*FLS*)
- Josep Carreras Leukaemia Research Institute (*IJC*)
- Guttman Institute
- Maresme Health Consortium (*CSdM*)
- *IDIAP*/Jordi Gol i Gurina Foundation
- Diagnostic Image Institute (*IDI*)
- Blood and Tissue Bank (*BST*)
- *Universitat Autònoma de Barcelona* (*UAB*)





The Strategic Plan is, additionally, an instrument that allows corporate culture to be created and is the backbone of the Can Ruti Campus, strengthening the organization and responding to the expectations of the researchers that use the *IGTP*'s services. In addition, the realization of a strategic plan with a participatory methodology, as has been done in this case, has allowed relevant information to be acquired and permitted channels of communication to be established between all the institutions that make up the *IGTP*, generating a strong multidisciplinary component between them and between their key people.

The Strategic Plan for 2014–2017 was concluded in 2017, and it is therefore pertinent and necessary to rethink what the next stage will be that the *IGTP* needs to address, based on a review of the strategic formulation made in 2014 and the future challenges that the Institution must confront.

Strategic planning is a process through which the condition of an organization and its fit in the environment is made, setting out where the institution needs to go in the field of research and establishing the actions that must be taken to achieve desired goals and scenarios.

The Management of the *IGTP* considered it necessary to elaborate the new Strategic Plan participatively, using the revision of the previous Strategic Plan on the one hand, but also carrying out a dynamic process that took into account the current and future or foreseeable reality, something that has an impact on the setting of priorities that are to be defined. This was done in a shared way, marking the results and goals that the *IGTP* must achieve in the coming years.

The Strategic Plan, once discussed and approved by the *IGTP*'s Board of Trustees, needs to be an instrument which guides the functioning of the institute, which is practical and which can be implemented by the Management and the people responsible for each of the organizational units of the institution.





## Structure of the Strategic Plan

The present Strategic Plan has been developed based on the information and approaches contained in the previous Strategic Plan in order to provide continuity, and on the meetings held by the different work committees to update the challenges and strategic scenarios of the coming years.

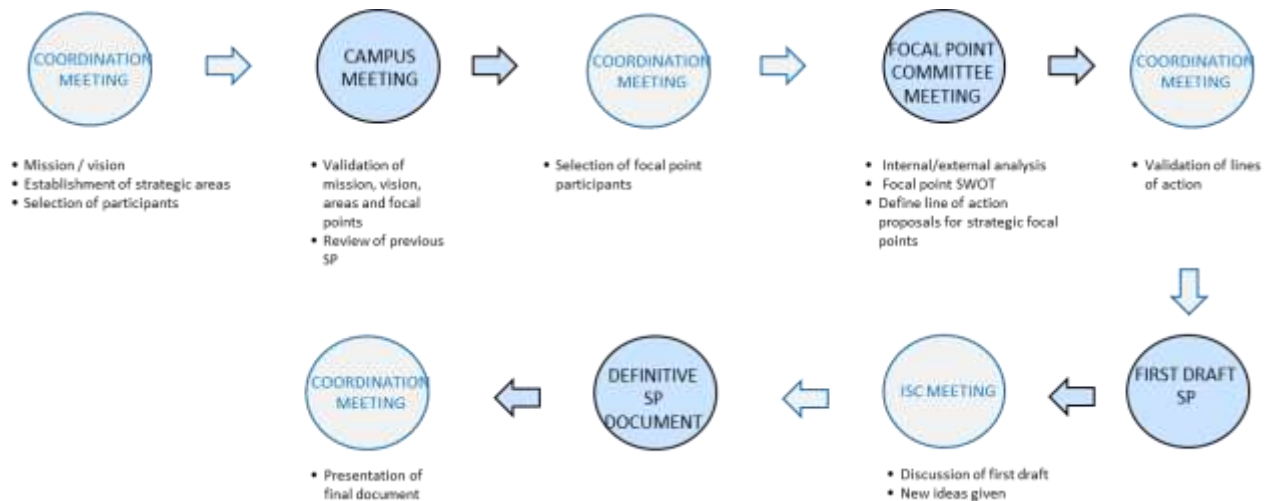
This Strategic Plan contains the following structured elements:

- **The mission:** defines the institution's reason for being.
- **The vision:** establishes what the institution aspires to in the long-term.
- **The strategic areas:** configures content blocks that allow the *IGTP*'s activities to be structured and grouped into a coherent whole.
- **The strategic focal points:** are the strategic formulation of the priorities that must characterize the performance of the *IGTP* in each one of the strategic areas previously defined.
- **The lines of action:** are the actions that must be developed and which must serve to fulfil the vision formulated in the strategic focal points.



## Participatory process of strategic planning

Below is a graphical summary of how the participatory process for the establishment of the IGTP's Strategic Plan has been developed:



### Operation:

- Creation of a coordination committee:
  - Composition: Scientific Management and Management
  - Objectives:
    - Review Mission/Vision
    - Proposal of strategic areas
    - Selection of participants for the committees
    - Review documentation generated
  - Face-to-face participation: different meetings throughout the process
- Meeting with representatives of all institutions within the Institute (inside and outside the campus):
  - Objectives:
    - Share and discuss the strategic vision of Scientific Management
    - Validate mission and vision
    - Establish strategic areas and focal points
  - Face-to-face participation: February 6, 2018
- Creation of a committee for each strategic focal point:
  - Composition: IGTP staff with other researchers and members representing all campus institutions and experts in each focal point.
  - Objectives: establish lines of action.
  - Face-to-face participation: a meeting for each of the 9 focal points established
- ISC Meeting:



- Objectives:
  - Discuss the proposed lines of action
  - Propose new actions.
- Face-to-face participation: June 28, 2018.

## Analysis

Based on the documentation consulted and the specific meetings on strategic focal points, an overall analysis of the Institute was made that generated a specific SWOT that can be referred to for each of the focal points.

## Formulation of the Strategic Plan

### Mission and Vision

The IGTP's **Mission** is formulated in the following way:

The *IGTP's Mission* is to promote and undertake **translational research** with maximum efficiency **in all its different institutions** to improve **people's health and quality of life**.

The *IGTP's Vision* is formulated in the following way:

The *IGTP's Vision* is to be a **prestigious** biomedical multi-institutional research institute, of reference in Catalonia and the world, that contributes to the cure of certain diseases, and to **improving people's health and quality of life** through the **valuation** of its translational and multidisciplinary research.

The IGTP's **Mission** and **Vision** are the cornerstones of the IGTP Strategic Plan.

### Strategic Areas

Strategic areas configure content blocks that allow all research activity to be structured and grouped in a coherent manner and which must also allow debate in the research community to be articulated in an orderly manner.

The IGTP's Strategic Plan is structured into the following strategic areas:

*AREA 1: RESEARCH*

*AREA 2: ENVIRONMENT*

*AREA 3: ORGANIZATION, RESOURCES AND SERVICES*



## Strategic Focal Points and Lines of Action

On the one hand, the strategic focal points are the strategic formulation of the priorities that the action of the Institute must characterize in each one of the strategic areas previously defined.

On the other hand, the lines of action must serve to fulfil the strategic vision formulated in the strategic focal points. The operational implementation of all the actions that are explained below may be adjusted temporarily to circumstances that might arise, whether of a political, economic or social kind, or equally, to scientific opportunity.

During the formulation of the previous strategic plan, 9 strategic focal points were defined, 3 for each one of the defined areas (Research, Environment and Organization) as shown in the following figure:

2014



Specifically, these focal points were formulated in the following way:

### AREA 1: RESEARCH

- Define a **research** model based on the interaction between knowledge areas of the institutions on campus and members of the IGTP outside the campus (*CSdM, IDIAP, IDI*), in line with future trends as far as specific research content is concerned as well as the demands that society makes in the field of research



- Foster the recruitment and preservation of **talent**
- Promote strategies and policies that increase the **effectiveness** and efficiency of research and transfer activity, in order to achieve a real scientific impact and influence on our society's health

*AREA 2: ENVIRONMENT*

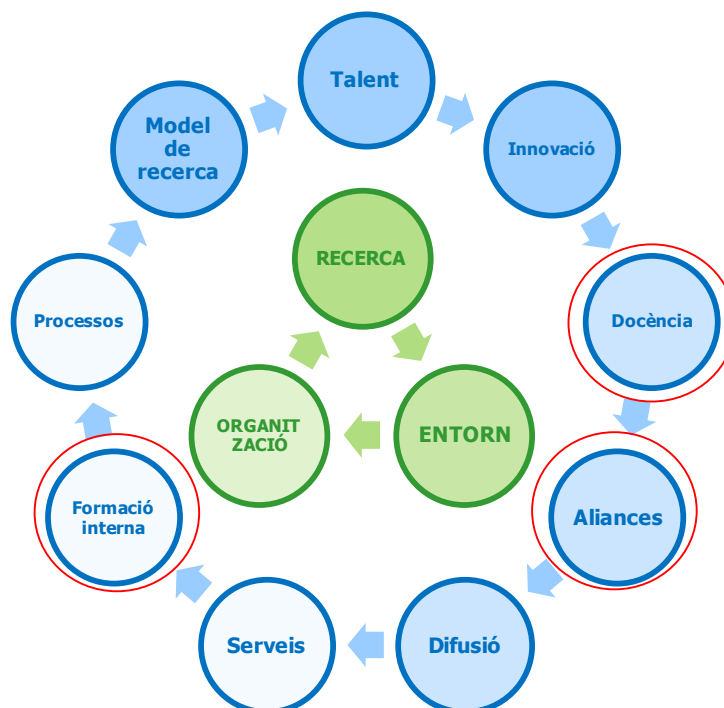
- Promote the active and effective **dissemination** of research activities and results (both in the scientific community and in civil society), as well as the Institute's services and activities
- Increase the degree of **internationalization** of the Institute
- Update and move forward with the formulation of the **functional coordination** plan of all *IGTP* institutions, both at the campus level and with those that are not geographically located in Can Ruti

*AREA 3: ORGANIZATION, RESOURCES AND SERVICES*

- Achieve excellence in all the Institute's **processes** and activities
- Maintain economic sustainability and improve **fundraising**
- Define a strategy for the Institute's scientific and technical **services** which consolidates, strengthens and sustains them, and increases their usefulness for researchers within the Institute or at the international level

For the current strategic plan, it has been decided to maintain 3 focal points per area by modifying them as shown in the following figure:

# 2018





Specifically the changes are:

- The focal point of Effectiveness changes its name to become Innovation and Business Development.
- The Internationalization focal point is replaced by Alliances since in the previous strategic plan, bases were established for promoting the capture of international projects and in the present plan, efforts for harnessing and prioritizing international alliances are to be made.
- The focal point of Functional Coordination disappears as it was created to facilitate integration with the *IMMPC* and intra-campus coordination and with institutions outside the campus. This is replaced by Teaching, which is considered as very necessary according to the members that are collaborating in the drawing up of the strategic plan.
- The focal point of Fundraising is no longer strategic in the current plan, and is replaced with enhancing Internal Training at the Institute. In spite of this, fundraising is considered to be transversal with different focal points of the plan and obviously does not disappear as a priority.
- A final section has been created with technological actions and strategic programmes: the Centre for Comparative Medicine and Bio-imaging (*CMCiB*), the Genomes for Life (*GCAT*) programme, and access to the population database *SIDIAP*.

They have been reformulated, in relation to the previous strategic plan, as follows:

#### *AREA 1: RESEARCH*

- Define a **research** model focused on the interaction between the knowledge areas of the different institutions that make up the IGTP and the translational nature of the research
- Foster the recruitment and preservation of **talent**
- Promote the transfer of knowledge, **innovation** and business development based on the generation of scientific knowledge

#### *AREA 2: ENVIRONMENT*

- Promote the active and effective **dissemination** of research activities and results, as well as the Institute's services and activities
- Increase technological and thematic **alliances** in relation to high-potential transversal programmes in the *IGTP* at national and international level
- Promote **teaching** as a strategy for training in research and for its translation to the different stakeholders of the health system

#### *AREA 3: ORGANIZATION, RESOURCES AND SERVICES*

- Achieve a good management model in all the processes and activities of the Institute
- Instrumentalize **training** as a tool for developing skills, talent and research capacity



- Establish a strategy for the scientific and technical **services** of the Institute that consolidates, strengthens and sustains them

This document is structured so that the information shown below was worked on during the meetings of each focal point:

- **Background and/or current situation:** the lines of action that were defined and an overview of their compliance are shown
- **Conclusions:** relevant aspects identified during the analysis
- **Lines of action and objectives to be achieved:** the ideal scenario for the IGTP in 2021 and the actions to be carried out to achieve it.

At the end of each focal point, its specific SWOT is shown.



## AREA 1: RESEARCH

### *Focal Point 1: Define a research model focused on the interaction between the knowledge areas of the different institutions that make up the IGTP and the translational nature of the research*

Research is one of the priorities of any university hospital like *HUGTP*. Throughout its not so long history, the research actions that caused the creation of the *IGTP* among others, have positioned the Institute on the state and international stage of research. This shows the continued commitment that the successive *HUGTP* Boards have made for their historical research, but also the scientific base and the quality that exists in the professionals who work on the campus in the different institutions that make up the *IGTP*, both those that are located on Can Ruti, and those other members of the *IGTP* that are outside the campus. It must be said that this has resulted in the increase in the prestige and respect that has been achieved by Can Ruti's professionals (healthcare, research and teaching staff), as recognized by the authorities, the patients and the professional community in the health sector.

The hospital institutions linked to Can Ruti and the *IGTP* that have carried out research since its founding, have consequently been of very great assistance, and this model will continue to be implemented and will grow over the course of the next 4 years in which this Strategic Plan will be in force. During the period 2014–2017 the *IGTP* strengthened its organizational structures and scientific-technical services and support for researchers throughout the campus in order to achieve a more visible and more prominent position in the field of research at the national, state and European level. More collaborative research has been done between the different groups and institutions that make up the *IGTP*, but it is evident that it can go further due to the enormous potential that remains to be explored in transversal research between all the institutions under the *IGTP*'s wing. The research that is done within the *IGTP* must be and must continue to be excellent research, prioritizing quality, with a clear translational, innovative and international dynamic.

The *IGTP* is made up of a whole series of institutions of great prestige, in welfare, teaching and research, which make up an ideal scenario for achieving excellence in its final product, helping to distinguish it further and gaining even more prestige and recognition, which results in more confidence on the part of the patients.

The combination of clinical and basic researchers (45% / 65% respectively), approximately 155 leading researchers with a total of about 800 people among scientific supporting staff, administrative personnel and PIs, should allow the translational character of the research generated by the *IGTP* reach high levels of productivity and scientific, health and social impact. We seek to conduct collaborative research, aimed at solving the problems of the population with innovative solutions that arise from the interaction of clinical and basic researchers with society. The obligation of the Management and the different heads of research of the *IGTP* is to organize and promote all the realities and potentialities of our research groups and all the institutions linked to the *IGTP*, facilitating their work as well as encouraging interactions between the protagonists, that is, the researchers.





### **Background and/or current situation:**

The research model that was promoted in the previous strategic plan had the objective of focusing on the patient and the health problems of the population with the following specific aims:

- Have a strong translational component
- Commit to innovation
- Have a cooperative format at the campus level
- Focus on the search for international partners and especially on a European level on the actions of the H2020 programme
- Align with the H2020 philosophy of applying criteria for *responsible research and innovation* (Project RRI tools: *Building a better relationship between science and society*)

Currently, the thematic areas and research groups consist of:

#### **AREA 1 | Science of Behaviour and Substance Abuse**

- 1.1 *Medical Complications of Substance Abuse*
- 1.2 *Mental Health Study Group*

#### **AREA 2 | Immunology and Inflammation**

- 2.1 *Immunopathology*
- 2.2 *Immunology of Diabetes*
- 2.3 *Immunological and Inflammatory Skin Diseases*

#### **AREA 3 | Cardiovascular and Respiratory Diseases**

- 3.1 *Heart Disease Research*

#### **AREA 4 | Infectious Diseases**

- 4.1 *Clinical and Experimental Microbiology*
- 4.2 *Experimental Tuberculosis Unit*
- 4.3 *Clinical Virology and New Diagnostic Approaches Research Group*
- 4.4 *Innovation in Respiratory Infections and Tuberculosis Diagnosis*
- 4.5 *Basic and Clinical AIDS Research (Institut IrsiCaixa)*
- 4.6 *Infectious and Respiratory Disease Research Group (Legionella)*
- 4.7 *Plasmodium Vivax and Exosome Research (PVREX)*
- 4.8 *Acquired Pneumonias in the Community*

#### **AREA 5 | Endocrine and Diseases of the Metabolism, Bones and Kidneys**

- 5.1 *Endocrine, Thyroid and Obesity*
- 5.2 *Endocrine Regulatory Genomics*
- 5.3 *Diabetes Research Group*
- 5.4 *Obesity and Type 2 Diabetes: Adipose Tissue Biology*
- 5.6 *Kidney Affecting Diseases*
- 5.7 *Innovation in Vesicles and Cells for Application in Therapy (IVECAT)*
- 5.9 *Sarcopenia, Fragility and Dependence Research Group*

#### **AREA 6 | Diseases of the Liver and Digestive Tract**

- 6.1 *Digestive Inflammatory Pathology Research Group*
- 6.2 *Higher Digestive Tract Motility Research Group*



- 6.3 *Dynamic Intestinal Function Research Group*
- 6.4 *Childhood Liver Oncology (c-LOG)*
- 6.5 *Innate Immunity*
- 6.6 *Translational Endoscopy Research Group*

#### **AREA 7 | Cancer**

- 7.1 *Cancer Genetics and Epigenetics*
- 7.2 *Epigenetics Mechanisms of Cell Differentiation and Cancer*
- 7.3 *Endocrine Tumours*
- 7.4 *Cancer Biology and Precision Medicine*
- 7.5 *Hereditary Cancer*
- 7.6 *Tumour Histopathology and Neuropathology*
- 7.7 *Breast Cancer*
- 7.8 *Skin Tumours*
- 7.9 *Leukaemia Research (Institut Josep Carreres de Lluita contra la Leucèmia)*
- 7.10 *Maresme Area Oncology Research Group*
- 7.11 *Resistance, Chemotherapy and Predictive Biomarkers*
- 7.12 *Childhood Liver Oncology (c-LOG)*

#### **AREA 8 | Neuroscience**

- 8.1 *Vascular Pathologies of the Brain*
- 8.2 *Cellular and Molecular Neurobiology*
- 8.3 *Neurorehabilitation and Cognitive Stimulation (Institut Guttmann)*
- 8.5 *Neuromuscular and Neuropaediatric Research*
- 8.6 *Neurogenetics*
- 8.7 *Genomics and Transcriptomics of Synucleopathies*

#### **AREA 9 | Community Health**

- 9.1 *Epidemiology of HIV/STIs and Global Health (CEEISCAT)*
- 9.2 *Acquired Pneumonias in the Community*

However, during the course of the previous plan, part of the *IMPPC* was integrated into the *IGTP*, with the creation of the **Programme for Predictive and Personalized Medicine of Cancer** with regards to solid tumours, through the SUMA IGTP-IMPPC-IJC project. This new programme has a transversal scope, with researchers from the *IGTP* and the *ICO* Badalona.

The following figure shows the achievement of the objectives set in the last strategic plan.



Achievement of objectives of research focal points in SP 2014–2017		
Strategic focal point	Lines of action	Result
<b>FOCAL POINT 1:</b> Define a research model based on the interaction between fields of specialization on the campus and future trends	<b>A.1.1:</b> Establishment of transversal research areas	Achieved
	<b>A.1.2:</b> Classification of research groups	Achieved
	<b>A.1.3:</b> Follow-up of the research groups	Partially Achieved

As we observe in the follow-up of the research groups, this was the only action that was not achieved in its entirety, and which will be modified in the present plan with the recent creation of a scientific management profile which will not be responsible for management tasks per se, but will be responsible, among other things, for the follow-up of the research groups.

#### **Conclusions:**

The main conclusions on a generic level are summarized as:

- The research model must continue to encourage **translationality** in such a way that there is an exchange of basic research in clinical practice and vice versa, and among the different institutions that make up the *IGTP*. Likewise, we must continue to encourage what has so far been done in relation to the *IDIAP* and the primary care professionals of the *CSdM* that do research.
- The *IGTP* brand might be better known. The research on the Can Ruti Campus in general must be thought of on the one hand, and on the other all *IGTP* research, including institutions not on the campus, as well as top-level actors in research, both internally and externally. The *IGTP*'s inclusive and multi-institutional research image continues to be both an internal challenge (we all have to believe in it), and an external challenge (society and other Catalan and foreign research institutions have to see it).
- The procedure for the evaluation of research groups must be systemised and a particular follow-up undertaken for identifying and evaluating emerging groups.
- Internal and external communication requires even more development, and more channels and strategies must be activated so that the scientific and social communities adopt a culture of monitoring said channels of communication.
- Despite considerable advances being made during the 2014–2017 period, the interrelation between the research institutions of the *IGTP* on campus and outside of Can Ruti should continue to be encouraged at all levels, from research groups to research direction.



**Lines of action and objectives to be achieved:**

The 2021 scenario should aim to:

- Strengthen translationality, further stimulating the relationship of basic researchers with care (both primary and hospital care) so that the different actors and institutions are integrated as much as possible in the research model.
- Define transversal research programmes of excellence to achieve a high degree of synergy between the different institutions that make up the *IGTP*.
- The Hospital/Research/Teaching trinity should be enhanced. Thus, the benefit of the fact that the *IGTP* has university hospitals (Germans Trias, Guttmann and Mataró) can be increased. The medical school model and the synergy with the teaching unit of the Can Ruti Campus must be strengthened. In this way, we must move towards a model of management/co-management of the campus in which *HGUTP/IGTP/UAB* arrange teaching, but also begin to create a culture of research among medical students at the *UAB*.
- Encourage the tandem of *Responsible Research & Innovation* (RRI). <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>



### **SWOT Analysis:**

The following table summarizes the SWOT analysis of the Research focal point:

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Reference population treated by the hospitals linked to the IGTP (<i>HUGTiP</i>, Guttman and Mataró)</li> <li>• The Can Ruti Campus as a concept</li> <li>• The institutions outside the campus as allies of great importance (<i>CSdM</i> and <i>IDIAP</i>)</li> <li>• The institutions with a transversal technological base which are members of the IGTP (<i>IDI</i>, <i>BST</i>)</li> <li>• The existence of the <i>CMCiB</i></li> </ul>	<ul style="list-style-type: none"> <li>• Internal and external communication</li> <li>• Lack of internal research training</li> <li>• Dispersion of group research activities</li> <li>• Lack of continued collaboration between groups both internally and between IGTP institutions not present on the campus</li> <li>• Common agenda for the different institutions still to be fully activated</li> <li>• Need for improvement of organizational procedures</li> <li>• Insufficient structure to support the management of research</li> <li>• Lack of resources, both financial and space-wise</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Have access to different health sector stakeholders.</li> <li>• Internationalization of IGTP researchers</li> <li>• Interaction with different groups of patients</li> <li>• Changes in the paradigm of health, more focused on the patient.</li> <li>• Increase of talent attraction</li> <li>• Search for very active alliances</li> </ul>	<ul style="list-style-type: none"> <li>• The perception by third parties of the Can Ruti Campus, of the members of the IGTP and its potential as a whole.</li> <li>• Economic and political uncertainty.</li> <li>• The competitiveness of other centres and the lobbying effect of some competing centres</li> </ul>



## *Focal Point 2: Foster the recruitment and preservation of talent*

### **Background and/or current situation:**

Although the institution has mechanisms to incorporate and retain research personnel, and technical and support personnel for researchers, as demonstrated by the increase of researchers and other support professionals in recent years, the management of this policy must continue to be promoted in order to guarantee and increase the prestige, excellence, and national and international competitiveness of the *IGTP*. This margin for improvement is mainly due to the following factors:

- *The attractiveness of the IGTP and of the institutions that comprise it must continue to be enhanced through the promotion of talent and prestige of the different leading groups within the IGTP, whether on or off campus.* One of the added values of the *IGTP* and its institutions is the prestige and talent that has been accumulated by a large part of the different research groups. This translates into a pole of attraction for talent that is important for all institutions. However, from the point of view of the *IGTP* this can be further strengthened in order to continue to increase the recruitment of more talent. It is for this reason that it is considered key to establish more actions to heighten visibility and strengthen this value in order to attract and retain talent.
- *The policies of active recruitment and retention of talent have been strengthened and must continue to be strengthened at all levels.* During the period 2014–2017, research personnel and support technicians were recruited in a sustained manner based on national and state calls, but without establishing specific action plans to achieve a stable and powerful dynamic for recruitment and retention at all levels, whether by incorporating junior, senior or high level talent; this was basically due to economic contingencies that continue to exist in the immediate future.

On the other hand, although training has been promoted at all levels, planning training actions as a means of retaining and attracting personnel, it is necessary to establish a systematic training plan at all levels of the institution with specific objectives, for research personnel and technical or administrative support personnel, which takes into account the needs that have to be considered. For this reason, a new focal point of training has been defined.

Likewise, the Institute's accreditation with the Human Resources Strategy For Researchers (HRS4R) <https://euraxess.ec.europa.eu/jobs/hrs4r>, currently underway, will allow the systemisation of the entire strategy of excellence, and attraction and promotion of talent.

In the previous SP 2014–2017, the focal point of talent was gathered within the focal point of *Promotion of the Recruitment and Preservation of Research Personnel*. The following table shows the achievement of the objectives set in the previous SP.



Achievement of objectives for the focal point Promotion of Recruitment and Preservation of Research Personnel in the SP 2014–2017		
Strategic focal point	Lines of action	Result
<b>FOCAL POINT 2:</b> Promote the recruitment and retention of research personnel	<b>A.2.1:</b> Give visibility to researchers and research groups of greater prestige in the Institute and on campus	Partially Achieved
	<b>A.2.2:</b> Establishment of active talent recruitment and retention policies	Partially Achieved

### Conclusions:

The main conclusions on a generic level are summarized as:

- It is necessary to establish strategies that allow for both the attraction of external talent and the promotion of talent from within which can be identified by academic level and residence.
- Have an itinerary traced from the *UAB*'s medicine degree, in which research is introduced progressively.
- Define a programme for attracting and consolidating talent linked to human resources' focus on attracting talent.
- Establish a recruitment programme for the Can Ruti Campus and the other *IGTP* institutions outside the campus. Financial support will need to be found.
- Establish a communication policy that publicizes the *IGTP* and all its institutions on the one hand, and the Can Ruti Campus on the other, as a centre for attracting, generating, and growing talent.
- Link the acquisition of talent at the clinical level with the acquisition of talent at the level of research.
- Establish a plan for attracting junior researchers.
- Have an active talent search system with scholarships and grants, to attract and be publicized among PI's in the centres.



- Establish indicators for talented personnel who are incorporated annually.
- Also, recruit talent for transversal and support services.
- Define priority research areas for attracting talent.

The following strategy models for the promotion and recruitment of talent can be used as examples and environment benchmarking institutions:

- *CRG*. <http://www.crg.eu/es/content/about-us-administration/human-resources>
- *IRB*. <https://www.irbbarcelona.org/es/young-scientists>
- *ICN*. <http://icn2.cat/en/careers/what-do-we-offer>
- *VHIR*. <http://www.vhir.org/portal1/article-oferta.asp?contentid=190098&s=institut&t=Seniority%20call%20for%20new%20talent%20-%20VHIR%202017>
- *IDIBAPS*. <http://www.idibaps.org/research-career/about.html>
- *IDIPAZ*. [http://idipaz.es/ficheros/files/Cursos%202017\(2\).pdf](http://idipaz.es/ficheros/files/Cursos%202017(2).pdf)

#### **Lines of action and objectives to be achieved:**

The desired scenario for 2021 should be:

- **Have a plan for attracting talent.** Have written a plan for attracting talent that allows for both training internal talent and recruiting external talent at the level of clinical research and at the level of basic research. Some actions to be carried out would be:
  - Define priority areas and groups for attracting talent at the Can Ruti Campus, *IDIAP* and Mataró.
  - Create a system for seeking and attracting talent that allows active scouting and training of talent.
  - Have an internal training plan that allows for training and enhancing internal talent, both in the research groups and in transversal services/platforms.
  - Increase the critical mass of the research groups and position them internationally to attract talent.
  - Align the recruitment and management of talent with the HRS4R programme.
- **Have resources for attracting talent.** Establish ways to stably fund the acquisition and consolidation of talent. Some of the actions to be carried out would be:
  - Search for sponsorship to fund the acquisition of talent.
  - Align the recruitment of talent with grant policies for the recruitment of personnel from different national and international programmes.





### **SWOT Analysis:**

The following table summarizes the SWOT analysis of the focal point:

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Consolidated groups</li> <li>• Dynamic campus and off-campus institutions</li> <li>• Having a university teaching unit and university hospitals (<i>HUGTiP</i>, Guttman, Mataró)</li> <li>• Leadership/management of <i>HUGTiP</i> and Guttman by third parties</li> <li>• Transition of generational leadership that allows for the recruitment of new talent.</li> <li>• The <i>CMCiB</i> as a focus for attracting talent</li> <li>• Synergy of the Can Ruti Campus with other <i>IGTP</i> institutions outside the campus, and with others</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of financial support for recruiting depending on the kind of talent (mainly biostatistics and bioinformatics)</li> <li>• Atomized or small-sized groups.</li> <li>• Lack of university courses for professional research</li> <li>• Lack of communication plan.</li> <li>• Weakness of the <i>IGTP</i> brand</li> <li>• Incapacity to generate sponsorship</li> <li>• Lack of more actions to recruit/train talent</li> <li>• Lack of more physical spaces to establish talented young researcher groups</li> <li>• High average age of PI's of research groups and retirement of reference personnel</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Alliances with other institutions in the field and with other research institutes</li> <li>• Work in research networks and consortiums</li> <li>• Recruitment of talent through masters and postgraduates</li> <li>• Attractiveness of the Barcelona area for research</li> <li>• Stress EU calls. Promote participation in ERC calls</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of financial resources to attract talent with incentives</li> <li>• The highly competitive nature of research in the Barcelona area</li> </ul>



### *Focal Point 3: Promote the transfer of knowledge, innovation and the development of new business models*

Currently, the health sector and its associated technologies cover a wide range of final markets from ICT's to biomedicine, through medical devices and services associated with medical practice. This fact means the possibilities of valuing and transferring knowledge within this sector are very broad.

Innovation activities within the health sector must be seen on two levels:

- Type 1: Transfer to third parties (licences) and the creation of technology-based companies.
- Type 2: Transfer that translates into a global improvement of the healthcare system (rationalization of resources, improvement of cost/effectiveness of the system) and treatment of patients.

This differentiation is a consequence of the characteristics of a system based on public and universal health, which not only aims to obtain a direct benefit for the exploitation of research activities (type 1), but also aims to use the results of investigation for a global improvement of the system which produces integral solutions in the health system, whether by:

- improving clinical practice,
- improving diagnosis in groups of current risk and treatment of patients,
- improving procedures through clinical guides and health management.

On the other hand, various initiatives such as the Medical Technology Innovation Platform (ITEMAS) Network or from the management of the CERCA Foundation, the Catalan Institute of Health (ICS), the Agency for Management of University and Research Grants (AGAUR) and the Agency for Business Competitiveness (ACCIO), are being implemented and developed to promote transfer and valuation within the health sector.

However, it is unlikely to find fully implanted models in which the valuation of knowledge within the hospitals and the health sector in general is carried out in a systematic manner that guarantees the profitability of investments made in research and makes public health more competitive, turning hospitals and their research institutes into centres that produce wealth and well-being.

Thus, although the Institute has mechanisms and procedures related to transfer, as proven by the patents granted, the technology-based companies and the collaborations that have been carried out with companies, its management must be reinforced in order to ensure that transfer and valuation of knowledge is a systematic procedure rooted in the culture of researchers. This margin for improvement is mainly due to the following factors:

- *Systemic lack of funds to protect knowledge and carry out proofs of concept.* The lack of funds to be able to manage industrial property (mainly in the form of patents) and intellectual property, as well as funds to carry out proofs of concept and valuation that allows the knowledge generated to be used in the market, has



limited the opportunities for transfer and valuation of knowledge generated in the *IGTP*, similar to other research institutions in our field.

- *Lack of business developers.* Currently, this is one of the main points to be strengthened. Although there have been external services that have given support to researchers, the lack of a consolidated structure can negatively impact the tasks of transferring and valuing knowledge. However, although training has been promoted at all levels by planning training actions, a specific training plan for researchers must be established, linked to all aspects related to the protection and exploitation of research results with specific objectives, either by research personnel, or technical or administrative support personnel, taking into account the needs that have to be covered.

In short, this strategic plan must lead to the improvement and systemization of various aspects:

- The boosting of clinical innovation and the integration of hospital innovation with the most basic innovation, transferring research to clinical practice and to the patient.
- Improve the availability of funds to carry out proof of concept and business development.
- Ensure training on specific topics of innovation.
- Guarantee support for the creation of spin-offs and quicken entrepreneurship and business development processes.
- Facilitate the licensing processes and collaboration with industry.
- Carry out internal dissemination actions to encourage the generation of new ideas and innovations.
- Implement actions for external dissemination to position the Institute as a benchmark centre within innovative biomedical research.
- Promote interrelation with different agents in the system, especially with companies so that public-private collaboration and the transfer of knowledge to production are improved.

**Background and/or current situation:**

Within the previous Strategic Plan, a transfer and valuation unit was created that gave a significant boost to all knowledge transfer activities during the period 2014–2017. Thus, the following table summarizes the review of the lines of action carried out in the previous Plan.



Achievement of objectives for the focal point Effectiveness of Research and Transfer Activity in SP 2014–2017		
Strategic focal point	Lines of action	Result
<b>FOCAL POINT 3:</b> Promote strategies and policies that increase the effectiveness of the research and transfer activity	<b>A.3.1:</b> Systemize the process of valuation and knowledge transfer	Achieved
	<b>A.3.2:</b> Establishment of intellectual property management policies and the exploitation of knowledge	Achieved
	<b>A.3.3:</b> Establish a training plan related to transfer and valuation	Achieved
	<b>A.3.4:</b> Promote clinical innovation and initiatives linked to social entrepreneurship	Not Achieved

As shown in the previous figure, the objectives were achieved with the exception of the action at *A.3.4: Fostering Clinical Innovation and Initiatives Linked to Social Entrepreneurship*, therefore, one of the objectives of the new SP will be to promote clinical innovation with close ties to the head of innovation of the *HUGTP*.

#### **Conclusions:**

The main diagnostic conclusions at the generic level are summarized as needing to:

- Encourage clinical innovation by increasing the permeability of the clinical and research parts in order to improve translationality.
- Ensure a training plan for structure and researchers, in order to increase innovative culture among clinicians and researchers.
- Consolidate the entire structure of innovation and the business model by incorporating business development profiles.

#### **Lines of action and objectives to be achieved:**

The desired scenario for 2021 should be:

- **Consolidate an increase in knowledge transfer and innovation policies.** Carrying out actions such as:
  - Perform a Benchmarking of the *IGTP* compared to other similar research centres and establish a strategy for continuous improvement.
  - Establish alliances with other research centres and with industry.
  - Involve all shareholders in the health system in innovation processes.
  - Establish filter mechanisms to be able to analyse articles and dissemination prior to its publication → Improve the system for detecting knowledge that can be transferred.



- **Improve the translationality of knowledge and innovation from research and from clinical practice.** Carrying out actions such as:
  - Create a mixed *HUGTP-IGTP* innovation committee to increase permeability between clinical practice and basic practice, which promotes clinical innovation. Reinforce support staff for innovation in the hospital setting, in particular at *HUGTiP*.
  - Establish systems for structuring living labs and patient experiences that allow validation of health innovation initiatives.
  - Encourage a culture of innovation through training and dissemination initiatives from the hospital areas linked to the *IGTP*.
  - Establish joint plans between innovation in the hospital area and in other structures of the Can Ruti Campus and the *IGTP*.
  - Apply SROI and RRI concepts to the research indicators.



**SWOT Analysis:**

The following table summarizes SWOT analysis of the Innovation and Business Development focal point:

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Commitment of the <i>HGUTP</i> management to innovation</li> <li>• Can Ruti Campus and <i>IGTP</i> institutions with growing innovative activity</li> <li>• Recruitment of companies through the <i>CMCiB</i></li> <li>• Personnel motivated by innovation and transfer</li> <li>• An extremely active <i>IGTP</i> innovation unit</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of internal and external economic resources to develop business ideas</li> <li>• Lack of innovative culture among researchers and especially clinicians</li> <li>• Deficiencies in internal and external communication</li> <li>• Complexity in the operation of the Can Ruti Campus and the <i>IGTP</i> as an institute</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Ability to define common synergistic projects between the different entities of the Can Ruti Campus, the <i>IGTP</i> and its linked hospitals</li> <li>• Alignment with EU policies. Encourage participation in calls for ERC grants including EU starting grants</li> <li>• Pre-consolidation of the market in clinical innovations that allow the launching of new initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of capacity to retain talent in comparison with other centres</li> <li>• Limited and competitive public resources for innovation</li> <li>• Lack of receptive industry for knowledge transfer.</li> <li>• Political uncertainty</li> <li>• Fragmented strategic policy of the official organisms for innovative research</li> </ul>



## AREA 2: ENVIRONMENT

### *Focal Point 4: Promote the active and effective dissemination of research activities and results, as well as the Institute's services and activities*

Any research centre has the primary function of generating and transferring knowledge, but also the function of dissemination. Thus, in order for the *IGTP* to improve its prestige and to be a centre of reference in Catalonia and the world, there is a need, among other things, of actively disseminating its activities and research results.

In addition, it is critical to achieve and enhance an easily identifiable and integrated brand image for all the institutions that make up the campus and enhance the *IGTP* itself, which also includes the institutions outside the Can Ruti Campus.

#### **Background and/or current situation:**

During the analysis of the previous strategic plan, the following aspects were detected as needing to be improved:

- There was no unified and integrated brand for all campus institutions, and the *IGTP* brand was considered to be little known.
- There was a lack of global visibility for the *IGTP* and some of its institutions, but not all of them.
- There was no communication plan for the Institute or communication alignment with the members of the campus and the institutions making up the *IGTP*.

For this reason, the following lines of action were considered:

- Define and enhance a brand, in this case the Can Ruti Campus, which will allow the bringing together of all the institutions on campus, but at the same time also link those not properly located there. The campus concept has become an unarguable cluster, and this is accepted by the *IGTP* institutions located in Can Ruti, and also those situated outside it.
  - Promote the communicative policies of the campus, for harmonizing the communication dynamics of all the research actors in Can Ruti
  - Promote sponsorship activities and public-private partnerships
- Develop a communication plan coordinated with all the institutions of the campus and reinforce the communication offices of the institutions on the campus.



The degree of fulfilment of these actions was:

STRATEGIC FOCAL POINT	OBJECTIVE	ACTIONS
<b>FOCAL POINT 4:</b> Promote the active and effective dissemination of research activities and results, as well as the services and activities of the institutions that make it up	<b>A.4.1:</b> Define and strengthen a campus brand that brings together all member institutions	Establishment of a Campus communication committee
		Brand study
		Strategic alliance with the Badalona City Council
		Establishment of a common communication model for the Campus
	<b>A.4.2:</b> Develop a communication plan aligned with all campus institutions	Appointment of a communication manager and establishment of the IGTP communication committee
		Analysis of the situation
		Proposal of objectives and planning of actions
		Execution of actions

Currently, unlike four years ago, there is a communication unit for the *IGTP* formed by two people for the last six months, whereas before there was no unit and it was the *HUGTP* unit that did these types of activities. Regular meetings are also held by those responsible for the communication of the campus institutions. These do not act as an official communication committee on the campus, but they do allow for the exchange of experiences and the alignment and leading of common projects, as well as the release of news in a coordinated way. But these meetings have not yet interacted enough with the *IGTP* institutions that are not located on the Can Ruti Campus, such as *CSdM*, *IDIAP*, and neither with some institutions that have a multi-campus presence, such as *BST* and *IDI*. *IJC* is managed from the *IGTP* and has a very active connection with the Josep Carreras Private Foundation.

However, there continues to be no established and official communication plan and, therefore, one will have to be developed during the period of this strategic plan, allowing an improvement and consolidation of many of the aspects detected during the focal point analysis. Obviously, this communication plan will have to be built with a multi-institutional dynamic.

Thus, although the *IGTP* currently has mechanisms to disseminate research activities, their results and services, and other types of activities, the management of these mechanisms must be intensified in order to guarantee their knowledge and the social, scientific and political recognition of the Institute, aligned with its mission.

This area is of extraordinary complexity, a real challenge for the co-existence in the *IGTP* of several prestigious institutions with their own heterogeneous communication dynamics.

Analysis of the current situation allows us to come to the following conclusions that determine the actions for the next years:

- The Can Ruti Campus brand is convenient and accepted by the researchers, and has also been consolidated and accepted among the management teams of the





institutions. The communicative policy of the *IGTP* should be aimed at strengthening the concept of Campus while connecting with the institutions not physically located in Can Ruti.

- Regular meetings have been established between the different communication heads of the Campus institutions, with a fully normal dynamic. There is good harmony between the communication units of the *HUGTP* and the *IGTP*, a very important point, given the number of researchers in both institutions and their cardinal position in Can Ruti.
- The head of communication does not yet participate in the meetings of the Management Committee of the *IGTP*, as was proposed during the previous SP.
- A communication plan has not been developed as proposed in the previous Strategic Plan.
- It makes sense to establish a communicative policy for the Campus but it must be compatible and align with the lines of the communication policy of each institution.
- There is a good relation with the local media that facilitates knowledge of activities on the campus and the group of institutions within the *IGTP* to the citizens of Badalona and in general to the Maresme area. It is more difficult to transfer this knowledge to the metropolitan area of Barcelona, despite the desire to reach there.
- More support should be given to the area of sponsorship, since it can be a very powerful social communication tool as is for example crowd funding.
- The intranet is obsolete. However, its content is being renewed.
- In the first phase of implementation of the new strategic plan, consolidating and strengthening the new communication structure of the Institute is key due to its recent remodelling. A strategy and communication policy then needs to be defined which has been planned, meditated on and shared with all the institutions of the *IGTP*, along with the elaboration of a communication plan that explains it.
- We must try and proactively release this with the current structure of the communication unit.

#### **Lines of action and objectives to be achieved:**

The goals to be achieved for the 2021 horizon should be:

- **Consolidate the *IGTP* brand.**
  - Prepare affiliations policy.
  - Promote the *IGTP* brand, as the co-brand of all the member institutions.
- **Also, consolidate the brand and concept of the Can Ruti Campus.** Some of the actions to be carried out would be:
  - Consolidate the common Research Agenda.
  - Produce a common newsletter, with the participation of all institutions.
  - Have open days at the Can Ruti Campus.
- **Improve internal knowledge of the Institute's activities.** This must be directed at the research groups of the *IGTP* and between the institutions on and off campus.



In a four-year scenario, everybody must have knowledge of all the research done at the Institute. Some actions should be:

- Have periodic meetings with group leaders to explain the services that the communication unit makes available to researchers. Basically, what the unit does and how it does it.
  - New Intranet (transversal action that appeared in the focal point of Organization and Processes).
  - Find the correct communication framework to help consolidate seminars and other intra-campus activities and activities with the participation of institutions off campus. Also, undertake some activities at the Mataró Hospital. This should work towards always achieving a minimum number of participants and cyclically cover all the fields/areas of knowledge in which research is carried out at the Institute. Group leaders encouraging their team to attend is key. Clinicians from the *HUGTP* and the Mataró and Guttman Institute Hospitals that conduct research should also be included. How attendance at seminars impacts the synergy of scientific activity among the research groups of all institutions should be assessed.
- **Improve external knowledge of the Institute's activities.** Some actions should be:
    - Consolidate the relationship with local media and the Badalona City Council, and in general or outside of Badalona.
    - Consolidate the Friends of Can Ruti Programme, as a communication action.
    - Publicize the new *CMCiB* website.
    - Continuous updating of the *IGTP* website (transversal action with Scientific Management to update content for platforms and groups).
    - Training sessions for *IGTP* staff and researchers related to communication (use of social networks, contact with the media, etc.).
    - Increase the dissemination of scientific work at all levels and in all media.
  - **Prepare an *IGTP* Communication Plan on an inter-institutional basis**
  - **Promote the *IGTP*'s sponsorship area**



**SWOT Analysis:**

The following table lists the SWOT diffusion analysis:

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Periodic meetings between the communication heads of Campus institutions</li> <li>• Established Campus Agenda</li> <li>• Collaboration with the local media</li> <li>• Friends of Can Ruti Programme undergoing consolidation</li> <li>• Synergies established between communication in the <i>HUGTP</i> and the <i>IGTP</i>, and also with the rest of the institutions</li> <li>• Strong involvement of the Management of the <i>IGTP</i></li> </ul>	<ul style="list-style-type: none"> <li>• Communication Unit is quite small</li> <li>• Can Ruti Campus and <i>IGTP</i> brands are not established enough</li> <li>• There are many brands on the campus, and there are those of institutions that are not located on the campus</li> <li>• Internal communication derived from the <i>IMPPC/IGTP</i> merger yet to overcome the effect of combining two different cultures</li> <li>• There is no annual structural budget defined for communication actions</li> <li>• Awareness of the Campus in society or in the media is not facilitated by its location</li> <li>• The intranet must be completely renewed</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Support from Badalona Town Council and other partner institutions</li> </ul>	<ul style="list-style-type: none"> <li>• <i>IIS</i>'s in the Barcelona environment are most well-known in the media and socially</li> </ul>



***Focal Point 5: Increase technological and thematic alliances in relation to high-potential transversal programmes in the IGTP at national and international level***

Establishing national and international alliances is a strategic need of the first order, for an accredited research institute of the size of the *IGTP*. Globalization has allowed small and medium-sized research centres to interact in all areas with other centres located in Catalonia, Spain and, above all, at the European level and outside European borders. Despite recognizing a very active and dynamic development in this area in recent years at the level of research groups, the time has come to address alliances at the institutional level through a specific strategy.

These alliances should be strengthened at the local, regional, national and international levels to promote a model of excellence in research in Europe and in line with the preparation of the new framework programme.

These international alliances must be technological and thematic, and fit with the transversal programmes of great potential on the campus and in the *IGTP* in general.

**Background and/or current situation:**

This is a new focal point that was not in the previous Strategic Plan. This is a new focal point that was not in the previous Strategic Plan. Precisely for this reason and because it was found that alliances should be strengthened during the initial meeting for the Strategic Plan with different representatives of the *IGTP* and the Campus, it was decided to add it as a strategic focal point.

Actions have been carried out for alliances but on an individual basis by the research groups and not in an institutional way, creating networks and promoting networking among the interest groups.

Below are the conclusions and lines of action that were defined during the meeting that was convened.

**Conclusions:**

The main conclusions on a generic level are summarized as:

- Alliances are established by research groups rather than at a more institutional level. They are usually done through the researchers and not by scientific management. This aspect is considered to function well but work should be done towards the search for alliances at an institutional level. However, alliances with institutions must be effective and not just be on paper or for image purposes.
- It is not easy to establish alliances at the institutional level since the decision-making bodies in this field (trustees) often complicate the process.
- Alliances must be made with institutions that share lines of knowledge or with those who can share equipment or databases.



- One approach to establishing alliances could be driven by the *CMCiB* as a new leading platform, and also *GCAT* as a unique and verified group; that is to say, offering the uniqueness of the *IGTP*.
- Alliances must be established between institutions. However, it would be ideal if the actions established by the *IGTP* could benefit all campus and non-campus institutions, which are members of the *IGTP*.
- It would be interesting if the scientific management and those in charge of the different institutions of the *IGTP*, taking into account the knowledge of the research groups of each institution, undertook a scouting of international networks or similar which could provide links.
- The *IGTP* project unit has a good knowledge of networks at the international level, and it is worth taking advantage of this.
- Good visibility of the *IGTP* would need to facilitate external alliances.

**Lines of action and objectives to be achieved:**

The goals to be achieved for the 2021 horizon should be:

- **Expand strategic institutional alliances.** Some actions to be carried out would be:
  - Establish what singularities the Campus and the member institutions of the *IGTP* have that can induce the generation of alliances (*CMCiB*, *GCAT*, *CSdM* entrepreneurship school, living labs at *AP*...)
  - Analyse what strategic alliances are necessary whether with competing agents, research centres, industry or official bodies.
  - Update those alliances established to date: assess activity, benefits, etc.
- **Expand the alliances of the research groups.** Some of the actions to be carried out would be:
  - Make a map of networks or international initiatives based on the knowledge of the international projects unit and analyse the networks that currently involve certain groups.
  - Determine which groups in the *IGTP* would be able to participate and assess their firm participation.
  - Determine if some of the networks or initiatives with which any group has alliances could be beneficial for others.



### **SWOT Analysis:**

The following table brings together the SWOT analysis:

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• <i>CMCiB</i> and <i>GCAT</i> as unique platforms to promote international relations</li> <li>• Leaders in the various institutions of the <i>IGTP</i> with capacity for international connection</li> <li>• An <i>IGTP</i> international project unit that is very proactive</li> <li>• Good connection to the pharma and devices industry</li> </ul>	<ul style="list-style-type: none"> <li>• Ignorance of international initiatives by many researchers, particularly clinicians</li> <li>• Little participation in networks at the international level compared to that which is potentially possible</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• New European framework programme</li> <li>• Commit national and state research organizations and agencies to promote these alliances</li> </ul>	<ul style="list-style-type: none"> <li>• High competitiveness and lobbying at all levels, local and international, to establish privileged relationships</li> </ul>



***Focal Point 6: Promote teaching as a strategy for training in research and for its translation to the different stakeholders of the health system***

As an accredited institute linked to a university hospital, university studies and a Can Ruti Campus of excellence, the *IGTP* has the necessary infrastructure to offer a comprehensive teaching strategy from pre-graduate university education to postgraduate studies in the field of research, ranging from basic research techniques to advanced courses in different disciplines.

Likewise, new equipment such as the *CMCiB* will allow the development of new areas of teaching that would include postgraduate courses and master's degrees with leading infrastructures.

Thus, teaching becomes a new focal point within the *IGTP*'s SP with the aim of being able to cover all training areas within the health fields.

In this regard, a considerable amount of information is offered by existing experiences of other *CERCA* centres in the biomedical environment, which we can obtain when performing Benchmarking in order to develop this focal point. Thus, the following entities can be considered comparatively in terms of the strategy that will be developed for the current focal point during the period 2018–2021:

- *VHIR*.  
[http://www.vhir.org/portal1/boxes\\_menu.asp?s=docencia&contenttypeid=2&contentid=28100](http://www.vhir.org/portal1/boxes_menu.asp?s=docencia&contenttypeid=2&contentid=28100)
- Hospital Clínic Foundation. <https://www.hospitalclinic.org/es/master-universitario-en-medicina-traslacional>

In this way, it can be concluded that there is no research institute that has a comprehensive teaching strategy within the field of health research that stretches from university studies to postgraduate training.

**Background and/or current situation:**

As such, this Focal Point did not exist in the previous Strategic Plan. The only reference to teaching that was in the previous plan was:

- University → develop a postgraduate translational biomedical research programme aligned with the knowledge that is developed in *IGTP* institutions and which is transversal with all hospital and *AP* services linked to the *IGTP*.

This objective was partially achieved but was not completed in full, although the excellent option of including the Research Innovation Training Programme for residents of the Maresme Health Consortium was made the most of, as an *IGTP* programme. As a result of the need to improve and integrate teaching within the structure of the *IGTP* in a broader and more ambitious way, a new focal point is being created that allows for the systemisation of all training activities linked to the *IGTP*, including the Course for residents of the *CSdM*.



### Conclusions:

The main conclusions on a generic level are summarized as:

- A research itinerary can be defined and must be defined from the beginning of a course. The *UAB* should be strongly involved.
- Research is not sufficiently visible to students of Medicine.
- Research related credits should be increased during the Medicine course.
- Training specialists (MIR) should be encouraged to approach research institutions, from the second half of their hospital or community training period (*AP*).
- The current postgraduate program offered from Mataró allows for the fulfilment of the BOE objectives that are requested for professionals in training and must be maintained.
- The current *UAB* programmes can be implemented as a model and so present synergies for doctoral students. Therefore, the *UAB*'s educational experience can be enhanced at pre-doc and post-doc levels.
- The official master's degree in research at the *UAB* allows doctoral access to professionals in nursing, speech therapy and physiotherapy who currently do not have access from their grade to the programme. This strategy could allow the development of doctoral thesis in a broad spectrum of staff linked to the *IGTP* or the associated healthcare institutions.

### Lines of action and objectives to be achieved:

The goals to be achieved for the 2021 horizon should be:

- **Define an itinerary stretching from graduate to postgraduate in which research is introduced progressively.** Some of the actions that would be carried out to achieve these goals are:
  - Improve interaction with hospitals and *AP* units to introduce research into doctors' teaching.
  - Build a comprehensive programme offering a teaching plan with continuity from the university to the postgraduate.
  - Define new TFG's focused on the area of research, so that students can be trained in the area of research.
  - Define environments and project portfolios for the different clinical (hospital and *AP*) and non-clinical research groups, so that students of different degrees have a clear plan of where and what type of projects can be linked to research.
  - Establish a teaching offer from the *IGTP* with university coverage through the *UAB*.
- **Implement teaching programmes for pre-doctoral and postdoctoral students linked to *UAB* programmes.**





- **Communicate and actively disseminate the IGTP's educational offer which includes current actions (Programme for CSdM residents, courses by IrsiCaixa, etc.) and future ones:**
  - Disseminate through the web page.
  - Disseminate through social networks, press and media, and educational fairs.

### **SWOT Analysis:**

The following table summarizes the SWOT analysis for the Teaching focal point:

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• UAB's teaching unit in Can Ruti</li> <li>• Current postgraduate activity in hospitals linked to the IGTP (HUGTiP, Mataró and Guttman)</li> <li>• Having access to different health sector stakeholders</li> <li>• CMCiB as a teaching and virtual training platform with an experimental model</li> <li>• The only teaching unit that asks for TFG for a FIS-type project is that of IGTP</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of higher education cycles (postgraduate and masters) recognized in the university area</li> <li>• Lack of financial resources to support teachers</li> <li>• The geographical dispersion of the IGTP's different member centres</li> <li>• Lack of motivation for teaching staff</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Attract talent through teaching</li> <li>• Generate transversal programmes between the different institutions of the IGTP, which can also facilitate their cohesion</li> <li>• Increase the competency of medical students in research</li> <li>• Compete with other universities</li> <li>• The current training program already established in Mataró with HUGTP allows the consolidation of a training scenario in research for MIR training personnel</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of research courses that allows the definition of an itinerary from teaching</li> <li>• Difficulty categorizing the different teaching programs and, therefore, positioning them correctly in the market</li> <li>• Lack of active policies to integrate the entire research teaching cycle</li> </ul>



### AREA 3: ORGANIZATION, RESOURCES AND SERVICES

#### *Focal Point 7: Achieve a good management model in all the processes and activities of the Institute*

For the *IGTP* to improve its strategic positioning and its operation, its model of organization, management and decision-making needs to be based on a working methodology that ensures that actions are aligned with institutional objectives and which guarantees control over the efficiency of the allocation and management of resources.

To do this, all the units of the institution, both in the field of research and in management, need to adopt a model of management and decision-making based on the identification of strategic and operational objectives defined by the Strategic Plan and on the use of efficiency criteria which determine and channel the resources to be used.

Thus, a strategy of quality management oriented in this way must be based on an comprehensive vision of the research and management structures and the human resources that make them up, the processes associated with research and management, and infrastructures, technological or otherwise.

#### **Background and/or current situation:**

During the analysis of the previous strategic plan, the following aspects were found to be able to be improved:

- There was no process management model that would allow the continuous improvement of all the *IGTP*'s processes.
- The execution and monitoring of the previously approved strategic plans had not been carried out effectively.
- There was no clear, flexible and ordered organizational model, or it was very primitive.

For these reasons, the following lines of action were considered:

- Develop a management model for processes
- Encourage a functional reorganization



The degree of fulfilment of these actions was:

STRATEGIC FOCAL POINT	OBJECTIVE	ACTIONS
<b>FOCAL POINT 2:</b> Achieve excellence, efficiency and sustainability in all <i>IGTP</i> processes and activities	<b>A.7.1:</b> Develop a process management model	Initial analysis
		Establishment of a quality committee
		Internal training in process management
		Deployment of processes
	<b>A.7.2:</b> Promote a functional reorganization	Define functional areas (organigram)
		Identification of needs
		Execution of actions

A functional reorganization was carried out taking advantage of the integration process with the *IMMPC* so that the Purchase, Projects, Finance, IT and Services Units were consolidated and new ones were created such as Communication, Innovation and European Projects, all of which did not exist previously. In addition, the growth of the *IGTP* has meant a gradual increase in its staff numbers. Despite undertaking the integration process, which has been difficult, it has not been possible to carry out consistent development of a process management model that would allow the achievement of excellence, either through external certifications or a internal quality system. Currently, the *IGTP* is at a moment when the management, people, training and resources units need to finish being consolidated, and a firm step needs to be taken towards achieving excellence in management.

Below are the conclusions and lines of action that were defined during the meeting that was held.

### **Conclusions:**

The main conclusions on a generic level are summarized as:

- Advances have been made in the implementation of management and information tools (e.g. SAP and platform software) but we must continue to move forward in this area through the introduction of new tools and improvements to those already implemented. Adherence to these management tools also needs to be encouraged.
- Communication between different management units, and between management units and researchers must be improved.
- Transversal working groups must be established to deal with aspects that affect the daily activity of the Institute.
- Although the Institute has been sized at a staffing level with respect to the previous SP and new units (e.g. Innovation, EU Projects) and new jobs have been created, there is still a lack of management personnel to provide a good service to all the *IGTP*'s users.
- Many of the professional profiles of the staff have grown at the same fast speed as the institute in the last four years, but not always in a harmonized way; this



means that some professionals still need to better adapt to their workplace with specific training.

- There is no transversal figure that coordinates the units and provides a link between the board and the management units.
- The opening of the *CMCiB* and its subsequent activity at full capacity will imply adding staff.
- The profiles of competence for each job need to be studied again and the functions of each management unit need to be defined even more specifically.
- Specific milestones must be set to achieve excellence in processes, such as external certification by an accredited body (e.g. ISO or similar) regardless of compliance with criteria required by other bodies (*ISCIII* accreditation, *CERCA* criteria, etc.).
- A comprehensive command board must be designed for the Institute with scientific, economic and operational key indicators.

#### **Lines of action and objectives to be achieved:**

The goals to be achieved for the 2021 horizon should be:

- **Consolidate the use of information technologies throughout the Institute.** Some of the actions to be carried out would be:
  - All professionals (researchers and non-researchers) should know how to develop in SAP, within the scope of their responsibility at the Institute
  - Full integration in SAP of all researchers of other institutions attached to the *IGTP* (*IRSI*, *Mataró*, *HUGTP* clinics, *ICO*, *AP*, etc.)
  - An on-boarding/welcome pack process must be designed for new staff that takes into account the use of the information systems that apply according to the place of work
  - Full implementation of the scientific-technical services software (2018–2019)
  - Full implementation of software management operations at the *CMCiB* (2018–2019)
  - Implementation of a signature system for the validation of orders (*DocuSign*) to optimize the purchasing process
  - New Intranet: the main added value should be a search engine that would allow the user to resolve any doubts related to the operation of the Institute.
- **Develop a process management model/Establish tools for continuous improvement within the organization.** Some of the actions to be carried out would be:
  - Prepare the system for *ISCIII* (2018) and *CERCA* (2019) re-certification



- Define which final management model is to be undertaken (ISO, CERCA type, or other), set a goal and implement it
- Create a comprehensive control panel for the Institute that includes operational indicators (not just scientific and economic indicators)
- Creation of groups for continuous improvement with management personnel and researchers in the areas:
  - Inter-unit relationship
  - Human resources
  - TiC's
  - Projects
- **Consolidate the structure of the Institute.** Some of the actions to be carried out would be:
  - Define in necessary cases the competency profiles of all the jobs of the support and management staff of the Institute (education, training, experience, skills, functions, responsibilities, etc.)
  - Define which management and support positions are considered key and which ones must be created (e.g. a coordinating/quality figure between units)
  - Define a made-to-measure plan of continuous training, to train the people who occupy key positions to achieve the necessary competence



### **SWOT Analysis:**

SWOT analysis gives the following table:

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• SAP introduced</li> <li>• Scientific-technical service management software in development</li> <li>• IMPPC integration completed</li> <li>• Profiles of existing management personnel with clear involvement in the success achieved in recent years</li> </ul>	<ul style="list-style-type: none"> <li>• Use of SAP not harmonized for all personnel (researchers and also non-researchers)</li> <li>• Internal training in the use of information systems not finished</li> <li>• Intranet to be renewed in its entirety</li> <li>• Documentary circuit for purchasing to be updated</li> <li>• Internal communication between units and between research personnel and management staff could be better</li> <li>• Functions and responsibilities of some positions to be defined/redefined</li> <li>• Ratio of management personnel/researcher insufficient with respect to other research institutes</li> <li>• There is no coordination figure that links the board and management units</li> <li>• A considerable number of researchers attached to the IGTP who still do not use the information systems of the Institute</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• IRISCAT or its modified version</li> </ul>	<ul style="list-style-type: none"> <li>• Target financing by the Administration</li> </ul>



### ***Focal Point 8: Instrumentalize training as a tool for developing skills, talent and research capacity***

One of the fundamental aspects of any institute is to offer tools and mechanisms that allow its professionals to develop their capacities through the acquisition of new knowledge linked to training activities.

This aspect is key both for senior staff, such as PI's, and especially for researchers in training who need to acquire new knowledge both in the area of their specialties, and in the areas of economic management or staff management.

Accreditation of research institutes, such as the *IGTP*, includes what is indicated in the HRS4R action, making it necessary to have training plans throughout a research career, which is a key aspect in the development of professionals. Thus, different *CERCA* centres present paths in research careers that include different training strategies such as:

- *IRB*. <https://www.irbbarcelona.org/es/young-scientists>
- *ICN2*. <http://icn2.cat/en/careers/what-do-we-offer>
- *CRG*. <http://www.crg.eu/es/content/training>
- *IDIBAPS*. <http://www.idibaps.org/research-career/steppingstone.html>

Thus, as a result of its commitment to the improvement of research activities linked to its mission, this specific training focal point is created within the strategic plan in order to respond to the different existing needs in this area.

#### **Background and/or current situation:**

As such, this focal point did not exist in the previous Strategic Plan, but there were various references to different focal points, such as specific actions detailed below:

- Although training has been encouraged at all levels by planning training activities as a measure for retaining and recruiting professionals, it is necessary to establish a specific training plan at all levels of the Institute with specific objectives for researchers and technical or administrative support personnel taking into account the needs to be covered.
- One of the specific goals should be, among other things, to commit to the e-learning platform of the Institute thereby achieving its own online training system, either managed internally or through partnership with the university. These types of training platforms are on the rise and research centres are increasingly using them.
- Training on specific topics of innovation. Very particularly aimed at healthcare professionals (hospital and AP) with the aim of promoting innovation.
- Specific continuous training will be carried out by those in charge of the processes so that they can carry out their responsibilities.



Achievement of objectives linked to the Internal Training focal point for the SP 2014–2017		
A.3.3: Establish a training plan related to transfer and valuation	Media	Achieved

This objective was achieved but was not systemized in all areas of research, therefore, within the current SP, one of the fundamental objectives is to systemize all training actions.

### **Conclusions:**

The main conclusions on a generic level are summarized as:

- The training actions that are registered at the moment are divided into:
  - a. Transversal
  - b. Computer/office automation (Excel, Word, K)
  - c. Languages

This training has been requested by the business committee and as such, there is no training budget, as it is funded through the tripartite foundation and surveys are carried out for its assessment.

Likewise, grants are sought from foundations such as the Esteve Foundation to offer courses.

On the other hand, several actions are carried out through the *IGTP* that are not integrated in a specific training plan; thus, seminars, coffee talks and bio-infotalks are carried out in order to achieve training in pre-doc, post-doc and IP research activities.

- There is no defined training plan that groups all the initiatives carried out by all the institutions that make up the *IGTP*. However, what is meant by training and what activities should be considered as such must be defined.
- The assessment of training through surveys must be systemized.
- Training activities must be established linked to the availability of new techniques and the state of the art.
- A training plan linked to attracting talent, as well as recruitment programmes through international programmes, must be undertaken.
- The training plan must be communicated in an effective and attractive way among the professionals of all the member institutions of the *IGTP*.
- There are not enough resources to carry out the training.
- The welcome pack for new staff that includes and envisages the training activities is pending.
- The HRS4R accreditation process is currently underway, which contains a plan and training actions within its structure.





- Internal tripartite training could be opened to other *IGTP* member institutions, as it is currently done with the *IJC* in a way that increases the efficiency of the actions.

**Lines of action and objectives to be achieved:**

The scenario for 2021 should be:

- **Prepare a transversal training plan that covers all the activities that are carried out on the campus.** Some of the actions to be carried out would be:
  - Create a training committee that reviews the training plan annually
  - Review internal training procedures and their approval
  - Have legal agreements between all the institutions to offer a global and open training
  - Establish a system to identify new training needs and include them in the plans to be elaborated, involving all personnel in their development
  - Include transversal services and platforms in training programmes
  - Coordinate training with that of the hospital
  - Promote the Virtual Campus
- **Have an effective communication plan to disseminate internal training,** in which the training plan is communicated with specific dates and actions.
  - Define the necessary channels so that training is communicated effectively to all interested parties
  - Integrate the PI's in the training.
  - Establish mechanisms to encourage participation in training
  - Evaluate participation and the training's suitability among the staff
- **Obtain financing from third parties to be able to provide financial resources for training:**
  - Establish an active programme to raise funds for sponsorship of internal training.
- **Integrate training with HRS4R accreditation and attempts to attract international talent.**
  - Create a welcome pack for new staff that includes and envisages the training activities



**SWOT Analysis:**

The following table summarizes SWOT analysis of the Training focal point:

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Motivation of professionals</li> <li>• Good infrastructure for carrying out training</li> <li>• There is a broad training activity in the groups themselves</li> <li>• Excellent knowledge content provided by professionals in their areas of expertise</li> <li>• HRS4R accreditation in progress</li> <li>• CMCiB</li> <li>• Virtual Campus</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of structured organization. A person in charge of training must be determined</li> <li>• Lack of more effective communication mechanisms for training activities</li> <li>• Lack of a bank of all the training activities that are carried out</li> <li>• Lack of commitment to attend from staff</li> <li>• Lack of a specific training budget</li> <li>• Lack of internal publicity offering training</li> <li>• Lack of staff dynamism to propose courses</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Positioning of the <i>IGTP</i> as a gatherer of/umbrella for the training activities of all institutions. There is a large amount of critical mass on the campus to generate quality training programmes</li> <li>• Training to consolidate and promote groups of excellence</li> <li>• Having the structure and support/accreditation of the <i>UAB</i> for pre and postdoctoral training</li> <li>• J.O.V.E. programme</li> </ul>	<ul style="list-style-type: none"> <li>• Limitations on attracting talent due to the lack of a training plan</li> <li>• Lack of agreement among the institutions that make up the <i>IGTP</i> to offer joint global and comprehensive training</li> <li>• The economic/political situation with frozen funds</li> </ul>



***Focal Point 9: Establish a strategy for the scientific and technical services of the Institute that consolidates, strengthens and sustains them***

The *IGTP* has some quality infrastructures, facilities and effective services, oriented to respond to the needs of the researchers, whether internal or external. The management of these facilities must be such so as to make them sustainable and renewable over time while allowing the institution's research model to be developed.

**Background and/or current situation:**

During the analysis of the previous strategic plan, the following aspects were detected as needing to be improved:

- There was no plan for scientific and technical platforms and services.

For this reason, the following lines of action were considered:

- Prepare a plan for scientific and technical platforms and services that takes into account:
  - Reviewing the tariff system and the financing structure
  - Establishment of alliances
  - Restructuring of the platforms and services that need it
  - Start-up of new platforms and services based on needs and financial availability
  - Promotion of use of these services

The degree of fulfilment of these actions was:

STRATEGIC FOCAL POINT	OBJECTIVE	ACTIONS
<b>FOCAL POINT 9:</b> Define a strategy for the institution's services that allow for their consolidation, strengthening and sustainability	<b>A.9.1:</b> Preparation of a plan for platforms and scientific-technical services	Establishment of a platform committee
		Internal analysis of platforms and scientific-technical services
		External analysis of platforms and scientific-technical services
		Establishment of objectives, planning and execution of actions

During the period of the previous strategic plan, the planned actions related to the revision of the tariffs and the structure of financing, and the restructuring of the platforms as a result of integration with the *IMMPC*. The costs have been analysed exhaustively as well as the tariffs. However, this analysis must be done permanently in order to make decisions in the short and long term. Given the entry into operation of the *CMCIB* and its inclusion in the platform system of the *IGTP*, a figure is needed to permanently provide general support and coordinate all the platforms.



The platform committee was also established and consolidated.

A bio-informatics service has been created that has yet to be consolidated.

### **Conclusions:**

The main conclusions on a generic level are summarized as:

- There are currently two models in the platform environment:
  - A) Outsource everything: the institution does not have scientific-technical platforms and researchers look outside the institution to analyse their samples and do studies. This model does not always ensure good service for the researcher since they do not usually have support staff at the institution that offers them advice.
  - B) Investing in infrastructure and personnel: this allows the provision of a comprehensive service to the researcher but the structural costs directly impact the operating account of the institution.
- It is considered that the *IGTP* should look to a mixed model, in line with what the *IRISCAT* project intends to do. Having a reference centre for each platform in the territory and a node in the institution that allows for the management of certain services on-site and, above all, offers quality advice to the researcher once they return results.
- There is a lack of a figure in the *IGTP* that allows the financing of the platforms to be controlled in a global way and facilitates decision making; who analyses the costs, establishes tariffs, studies the competition, analyses the national and European regulations for the allocation of platform costs on competitive projects. With the inclusion of CMCiB, this is even more necessary.
- There is a demand from the researchers to enhance the microscopy platform.
- It is necessary to inform the researchers, at least annually, of the services of each platform and of the changes that may have happened at a technical and/or technological level.
- It is considered necessary to think about the creation of a bio-printing platform.

### **Lines of action and objectives to be achieved:**

The goals to be achieved for the 2021 horizon should be:

- **Create a general coordination unit for platforms.** Some additional actions to be carried out should be:
  - Incorporate a financial controller that supports the Coordination of Platforms and Management
  - Analyse costs, re-establish tariffs if necessary, study the competition
  - Establish cost allocation policies through the analysis of European regulations for cost allocation in competitive projects



- **Consolidate the permanent cost study and the services tariff system.** The incorporation of the controller must allow a system to be established that guarantees support for the Institute's decision making related to:
  - Restructuring of platforms and services when necessary
  - Start up of new platforms and services
  - Establishing alliances with other platforms in the environment
- **Encourage the use of platforms and services.** Some actions that could be carried out would be:
  - Organize annual monographic seminars for the use of platforms. Users and potential users should attend and be informed about changes in services, new techniques and equipment. They should be transversal, that is, aimed at all researchers of all the member institutions of the *IGTP*.
  - Include, a monograph on the available platforms and services when new researchers are incorporated. The intranet and the website of the *IGTP* must have all this information updated.
- **Study the feasibility of creating a bio-printing platform.**

**SWOT Analysis:**

The following table summarizes SWOT analysis:

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Ease of access and good service</li> </ul>	<ul style="list-style-type: none"> <li>• Not all researchers know about the platform services</li> <li>• Intranet currently not updated</li> <li>• Lack of coordination guidelines from national and state scientific governance structures</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• The <i>IRISCAT</i> project</li> <li>• FEDER and MINECO subsidies</li> </ul>	<ul style="list-style-type: none"> <li>• Large rotation of researchers</li> <li>• Difficulty in renewing technologically obsolete equipment</li> <li>• Major competitors in the vicinity</li> </ul>



## Technology actions and strategic programmes for 2018–2021: CMCiB, GCAT and SIDIAP

The IGTP is currently carrying out a series of projects which are very important for the Institute, for the Can Ruti campus and for biomedical research in Catalonia, which were present in the previous Strategic Plan and which should also be in the current one; they are the **Centre for Comparative Medicine and Bio-imaging (CMCiB)**, the **GCAT (Genomes for life)** project and access to the **IDIAP clinical database (SIDIAP)**. These are three fundamental elements in the recent trajectory of the *IGTP* and which in the coming years can make a difference in relation to other research centres.

The **CMCiB** has been operational since mid-2018, a long-awaited event for researchers and for the board of the *IGTP*, after a considerable effort to design and create a strategy for its deployment and execute the construction work. With regards to this last point, the building is a great technological and architectural creation, located in a very special place on the northern part of the campus. This equipment, functionally dependent on the *IGTP*, will allow the realization of projects with a great deal of scientific impact. It will undertake the application of various computer modellings, as well as the use of all kinds of models, from invertebrates to corpses and the possibility of doing imaging studies for human research. All this covering a broad spectrum of experimental designs along with functional and molecular imaging. Currently, within the Spanish State, no other centre can combine the use of bio-imaging with an infected animal model, among other specificities that give this centre a unique character, and which consequently open up a significant range of scientific growth opportunities for the *IGTP*, the campus and the biomedical research system of Catalonia.

On the other hand, and in accordance with the guidelines of the General Directorate of Research and Innovation in Health, the reordering of experimental research units in Catalonia is going through the creation of a model in which there is a single organization for experimentation in large animals, what would be called the Experimental Research Centre of Catalonia (*CREC*), and which would consist of two physical entities: the *CMCiB*, linked to the *IGTP* and *CREBA*, linked to the *IRB* in Lleida. The *CMCiB* would be more aimed at doing research but not exclusively so, and the second would be more designed to doing teaching, also not exclusively. The guidelines set by the General Directorate of Research and Innovation in Health are aimed at



applying a very complementary model of CREC in basis of the two sub-sectors, in such a way that even a single economic exploitation plan could be configured.

The creation of the *CMCiB* has led to a very significant effort, and although the commitment is large and it opens up huge possibilities for research at the limit of knowledge, it has also been and is a major risk to the *IGTP*, given that the financial effort has been very large, and this has a very considerable impact on the operating account of the *IGTP*. This impact will cover the whole period of implementation of the new Strategic Plan. The Management of the *IGTP* will have to very carefully ensure that the *CMCiB* reaches its operating speed quickly and consistently to avoid economic risks that may also jeopardize the economic health of the *IGTP* itself.

The actions linked to the *CMCiB* for the period 2018–2021 are the following:

- Ensure the rapid start-up of total *CMCiB* operation during 2019.
- Articulate a marketing and communication plan for the centre, initially at the local level and later at the state and international levels.
- Link to bio-imaging companies to develop research actions in this domain of knowledge at the *CMCiB*.
- Achieve the execution of large projects, both national and international.
- Reach agreements with the industry for medical devices so that the *CMCiB* is a centre of reference for this sector of economic activity also.
- Strengthen the economic monitoring of the *CMCiB*, reinforcing the technical structure of support for the centre's business development.
- Consolidate the link of the *CMCiB* with the *Bancaria la Caixa* Foundation through agreements of economic support and visibility actions for this relationship.
- Apply for *ERDF* funding to recover economic investment.
- Include the *CMCiB* in the bio-imaging area of the European EATRIS network.
- Develop preferential agreements with some institutes in the metropolitan area of Barcelona in order to implement joint projects.
- Create a program of training in invasive procedures with a virtual format and with the use of human corpses in order to optimize surgical training programmes.
- Organize visits by students of the *UAB* Teaching Unit, in order to stimulate their interest in research with virtual, computer and animal models.



*GCAT* is one of the most important projects for the *IGTP* and the campus, but also for the community of Catalan and European researchers. With the support of the *Generalitat de Catalunya* and having received a special financing loan from the *ISCIII*, *GCAT* is in fact a project that may give very relevant prospective information to the Ministry of Health regarding the level of health of the Catalan population, which will be critical for the planning of health strategies and in particular in the field of personalized medicine.

At the same time, the information content generated by the project is of such magnitude that *GCAT* is dynamic and requires the use of massive data analysis platforms such as the Mare Nostrum supercomputer at the Barcelona Supercomputing Centre. However, in the research consortium that was born due to the implementation of *GCAT*, there are also high-level technological centres of scientific prestige such as the *CNAG-CRG*, among others.

The implementation of *GCAT* in spite of everything, has not been easy, has required a very considerable effort on the part of its scientists, and at the moment does not have a public structural budget that allows for the technical operational nucleus to be stabilized. In fact, *GCAT* has been at risk of suspension, and efforts have been made from the Directorate of the *IGTP* and the project director at all levels in order to guarantee its continuity. Therefore, *GCAT* has suffered serious problems in recent years. After a positive evaluation by the *IGTP* external scientific committee and a local scientific committee, the *Generalitat* has approved economic support for the core nucleus of *GCAT*. In spite of this, a sufficient amount of money is not available at this time, although the *IGTP* team and the institutions that have opted for *GCAT*, such as *IDIBELL*, *BSC* and *BST*, have been able to finish the recruitment of 20,000 subjects, and undertake the sequencing of almost 1000 participants in this group. Some competitive projects are already being concluded and the first publications are being made. That is to say that *GCAT* is now beginning to give its first fruits and in the next ten years, when dealing with a real-time monitoring group, it will be able to describe the valuable findings that the analysis of the data will be offering.

During the 2018–2021 period, the strategic actions that are proposed in relation to *GCAT* are the following:

- Obtain and consolidate stable public funding that ensures the continuity of *GCAT*.





- Consolidate the consortium of institutions currently involved in all the activities of *GCAT* and organize their active monitoring by the Management of the *IGTP*.
- Open the project, transversally across the Catalan biomedical and international scientific community, generating large projects for competitive calls.
- Organize a B-debate in 2020 with the participation of researchers of the highest scientific level.
- Connect the data with various similar European groups that have been generated in the last year.
- Prepare specific reports of data obtained that Catalan healthcare planners can use to programme actions to preserve the health of our citizens.

Finally, the third of the important strategic actions existing during the execution of the strategic plan 2018–2021 refers to the use of the clinical database of primary health care **SIDIAP**. This is IDIAP's very important contribution to the possibility of key big data research. After very well developed and time-consuming work, SIDIAP is a reality that has already contributed in a very relevant way to doing good research: high-quality research that has been enjoyed by not only IDIAP researchers but also diverse clinical researchers from the hospital sector. The incorporation of IDIAP into IGTP in 2015, and in particular of AP researchers located in the northern metropolitan area, has produced a dynamic packed with synergies. One of the most obvious examples is the participation of *IDIAP Metro Nord* researchers in one of the *CIBER* groups of the *IGTP*, specifically in one of the *CIBERDEM* groups, but also in studies of patients with heart failure, where in recent years, scientific production has been of very high quality at a large rate of output. The promotion of shared and synergistic research with *IDIAP*, from the entrance of *IDIAP* to the *IGTP*, must be in the first line of strategic special actions of the *IGTP*, although it also facilitates even more tuned coordination in the welfare field.

Consequently, the current situation allows us to suggest the following are necessary:

- Inform all researchers at the *IGTP* and, in particular, the clinical researchers of the existence and quality of *SIDIAP*, for research shared with *IDIAP* researchers.
- Provide *IGTP* researchers with information from the *PADRIS* initiative, controlled by *AQUAS*, and which regulates access to clinical care data.



- Promote the synergy of *SIDIAP* with *GCAT*, with the formulation of projects where information from both databases can be used.
- Include *SIDIAP* in large European projects, as a strength that the Catalan research system can contribute to European initiatives, since few European countries (Scotland, Finland, etc.) have tools such as *IDIAP*, this makes us very attractive as an international partner.
- Apply the knowledge and expertise of the technological platforms of the *IGTP* (genomics, imaging, etc.) to enrich the information included in *IDIAP* and to advance epidemiological studies of the population living in Catalonia.