

EVALUACIÓN EXTERNA DEL PROYECTO IMBRAIN

Improving Biomedical Research and Innovation in the Canary Islands (REGPOT 316137, 2012-2016)

Informe de evaluación externa elaborado por la comisión evaluadora designada por la Comisión Europea tras la finalización del proyecto

De acuerdo con la normativa de la convocatoria, los proyectos del programa REGPOT de la Comisión Europea (CE) tenían la opción de someterse a una evaluación independiente de la calidad y capacidad investigadora global, por un comité de expertos internacionales designado por la CE.

Tal como se indicaba en la convocatoria (European Commission C-2011-5023), “*los resultados de esta evaluación deberán ser discutidos conjuntamente con los representantes de las agencias nacionales y autoridades regionales para determinar las vías y métodos más apropiados para preservar la ‘excelencia’ de la institución beneficiaria y explorar su contribución al desarrollo sostenible regional y Europeo*”. La evaluación utilizará los medios apropiados de la institución beneficiaria, con el fin de facilitar las actividades de los expertos. Ello incluirá: (i) Mobilización de los medios y recursos humanos disponibles; (ii) Organización de las visitas del comité evaluador; (iii) Organización de las reuniones propuestas por los evaluadores con los miembros del comité directivo del proyecto y del comité asesor externo del mismo; y (iv) Recepción de los resultados y presentación a los principales agentes interesados a nivel regional y nacional.

Tras las actividades desarrolladas por el comité evaluador entre los meses de marzo y mayo de 2016, durante los días 16 y 17 de mayo los resultados de la evaluación se discutieron con los diferentes agentes académicos y sociales, presentándose un resumen del informe final y las recomendaciones del comité evaluador.

Participantes

Miembros institucionales del Comité Directivo del proyecto

- Antonio Martínón (Rector de la Universidad de La Laguna, ULL)
- Francisco Almeida (Vicerrector de Investigación de la ULL)
- Carmen Rubio (Vicerrectora de Internacionalización de la ULL)
- Daniel Alonso (Coordinador de la Oficina de Dirección Estratégica de la ULL)
- Julio Brito (Director-gerente de la Fundación General de la ULL)

Representantes de autoridades y agencias nacionales, regionales e insulares

- Alfonso Beltrán (Subdirector General de Proyectos Internacionales de Investigación, Instituto de Salud Carlos III)
- Jesús Morera (Consejero de Sanidad de Canarias)
- Manuel Miranda (Director de la Agencia Canaria de Investigación, Innovación y Sociedad de la Información)
- Carlos Alonso (Presidente del Cabildo Insular de Tenerife)
- Roberto Moreno (Director del Servicio Canario de la Salud)
- Antonio García (Consejero Delegado del Parque Científico y Tecnológico de Tenerife)

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EX-POST EVALUATION REPORT

*Improving Biomedical Research and
Innovation in the Canary Islands
(IMBRAIN)*

FP7-REGPOT-2012-2013-316137

FINAL REPORT

**By Roland Pochet, Antonio Pineda-Lucena, José Antonio Costoya and
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I.- INTRODUCTION

1.1.- Objectives of the REGPOT call

According to the Lisbon Strategy, the EU should become the most competitive and dynamic knowledge-based economy in the world. To this end, the EU decided in 2000 to strengthen its Research and Innovation activities by creating the European Research Area (ERA) and linking its best RTD institutions throughout the EU. The “Research Potential” activity of EU FP7 programme was set up to reinforce the capacity of the already existing excellent research Institutions located in Convergence and Outermost Regions of the EU and permit their full participation in ERA. The aim was to expand ERA to the entire territory of the EU and make ERA more balanced and equilibrated. The priority was to increase the research potential in these regions and improve their knowledge and technological processes – contributing to the growth, productivity and employment of these regions.

The Research Potential activity focused on excellent research entities of significant scientific size with high potential to innovate. Their research strategy should ensure the highest possible impact of the EU intervention. These research entities should demonstrate a high quality of human, material and organizational capacity, allowing the hosting of several newly experienced researchers. They should also demonstrate the capacity to innovate and to consider innovation as a key issue in their actual research strategy. The enhancement of their research potential would be realized in close cooperation with European outstanding research “partnering organizations” in the same S&T domain or in a complementary field, and when appropriate with industry and SMEs from the local, national or European landscape.

A Steering Committee for research strategy was expected to be created consisting of top class scientists (e.g., representatives of the “partnering organizations”). Regional authorities, funding agencies, representatives of the national research bodies, applicant’s parent organization, and end-users (SME, industry, etc.) could also participate if appropriate, especially in order to ensure synergies with local, regional or national policies. Such an approach would facilitate the sustainability of the Convergence and Outermost region’s RTD players. It would also enhance the up scaling of their potential and will allow them to become dynamic “innovation engines” capable of sustainable regional and European growth and employment.

Considering the necessity to fully integrate the Convergence and Outermost regions’ research actors in the ERA, Research Potential offered a tailor-made approach to promote excellence in research. The measures supported by the activity were

prepared to support the best research centres in the economically weak and geographically remote regions to respond to the needs expressed in the Innovation Union Communication (e.g., “free movement of knowledge” or “more innovation out of our research”).

This activity pursued to enable the highest quality research entities in these regions – whether in the public or private sector – to reinforce their excellence, bent for innovation and creativity while taking advantage of the knowledge and know-how existing in leading research organizations of Europe. Hence, they would contribute actively to the European or regional economy and social welfare, in line with the mutually reinforcing priorities of the Europe 2020 Strategy, and would become dynamic actors of the ERA within the enlarged Union. Among the different actions, dissemination was expected to take place through national and regional contact points, organization of information days, roundtables with targeted audience as well as with specific publications on projects and programme implementation and assessment.

From a more practical point of view, the applicant’s proposals had to provide evidence of their excellence in research and of their leadership potential in the scientific field of their competence. An important aspect of the proposals should address the organization and management of their Intellectual Property and/or Innovation capability as part of their development strategy. The enhancement of their Research Potential would be realized through twinning with at least three European outstanding research “partnering organizations” in the same S&T domain or in a complementary field, and when appropriate with industry and SMEs from local, national or European landscape.

A complete SWOT analysis of the beneficiary was also expected to be included in the application, stating the need for an European intervention rather than for a national one and the European added value of the proposal. Based on this analysis, the applicant should propose an Action Plan based on a coherent set of measures with the aim to strengthen its S&T research and innovation potential. The Action Plan would be assessed toward its capacity to respond to the:

- Objectives of Research Potential activity;
- SWOT analysis of the applicant;
- Need to reinforce the long-term high quality research and innovation strategy of the applicant taking into account the state of the art and future perspectives of the scientific domain;

- Sustainability of the measures, in line with the applicant's research strategy, beyond the project lifetime.

The Action Plan would include a set of four coherent measures:

i.- **Twinning through exchange of know-how and experience:** transnational two-way secondments of research permanent staff between the applicant and 3 or more knowledgeable and experienced "partnering organisations". The organisation of workshops and conferences as well as dissemination and promotional activities for knowledge sharing, networking and for better visibility at national and European level should be envisaged. Partners from the applicant's country could be involved and, when appropriate, stakeholders like enterprises, SMEs, hospitals, etc.

ii.- **Recruitment by the applicant of experienced researchers.** In this context the return of nationals having left the country was encouraged. Experienced engineers, scientists or technicians for running the newly acquired equipment were also eligible.

iii.- **Upgrading, development or acquisition of research equipment** for the applicant. This measure should not account for more than 30% of the total project budget. Only in duly justified cases where the equipment was capital to increase the applicant's research capacity, it could go up to 45% of the total project budget.

iv.- **Elaboration of a strategic Intellectual Property development plan** for IP management and protection and **innovation capacity building.** The plan would provide a framework for improvement of IP and protection of know-how. Innovation capacity building measures should assure IP training and update of competences, provide expertise on IP issues and assure organisation of the IP including networking with partnering entities for co-exploitation of results. IP and Innovation managers could be employed in this frame.

Finally, in addition to the listed four measures, the applicant could optionally apply for an international independent expert evaluation of its overall research quality and capability, including managing and infrastructure. This evaluation would take place at the end of the implementation of the Action Plan, over a period of up to 6 months, and it would be carried out by independent international experts nominated by the Commission. The results of this evaluation should be discussed jointly with the representatives of the national research ministry and regional authorities to determine the most appropriate ways to preserve the applicant's excellence and to explore its contribution to the regional/European sustainable development.

1.2.- Background and general objectives of the IMBRAIN project

A decade ago, the University of La Laguna (ULL) launched a series of initiatives aimed at creating a centre for biomedical research that pursues excellence, taking advantage of the potential of the research groups in its different departments and institutes. That was the origin of the Centre for Biomedical Research of the Canary Islands (CIBICAN) at the University of La Laguna (ULL). ULL-CIBICAN integrates research groups associated with specialized ULL University Institutes and clinical research units of the ULL-associated hospitals. The goal of this new scientific cluster was to become an internationally recognized biomedical research centre in high quality translational research, first, in the study of chronic and age-related diseases affecting the quality of life, and genetic-based and rare diseases; second, in generating biomedical innovation by the effective integration of research and medicinal chemistry with that of human biology at molecular, cellular, systemic and organism levels; and third, in promoting health by developing high quality research on health services and other issues directly related to social needs. Its mission is to combine interdisciplinary approaches from basic biomedicine, medicinal chemistry and clinical research to develop new approaches towards the transference of health knowledge to the industry and societal end users.

ULL is located in Tenerife, the largest of the seven Canary Islands, an archipelago in the Atlantic Ocean about 100 km northwest of Africa, and one of the outermost regions of the EU. Founded 200 years ago, ULL provides higher education to 25,000 students with 1,764 professors and 843 administrative employees. While ULL offers education in all academic areas of sciences and humanities, it has a strong commitment to the studies in the Health and Life Sciences through integration of Schools of Biology, Medicine, Nursing, Nutrition, Pharmacy, Physiotherapy, Psychology, Physics and Chemistry. This integration is further enriched by the ULL association with two University Hospitals, that belong to the Canary Islands Health Public Service (SCS).

ULL has modern core infrastructures and functional units, including IT services, general and specialized health sciences libraries, gender equality unit, and press office. Large scientific equipment is organized in core facilities to support common research. This service is devoted to give instrumental, scientific and technical support to research groups from the institution or elsewhere. This technology is also offered to local and regional enterprises with the aim of collaborating towards industrial innovation and

regional development. In brief, these services include several platforms specifically used in biomedical research, such as the Animal Facility, Microscopy and Cell Imaging, ‘Omics’, Nuclear Magnetic Resonance for structural chemistry and biology, and Magnetic Resonance for Biomedical Analysis. The majority of specific instruments used for biomedical research are located in CIBICAN laboratories under the supervision of principal investigators. In addition, the Research Unit of the University Hospital – fully integrated within CIBICAN— has a Clinical Trials Unit forming part of the official network of Spanish Clinical Trials (CAIBER), and a BIOBANK certified by the Spanish Institute of Health at the Ministry of Economy and Competitiveness.

In 2008, the ULL Steering Committee approved a Strategic Plan to improve educational and research infrastructures, enhance European visibility and increase international competitiveness. In addition, because of its geographical location ULL has reached a number of agreements with different academic and research institutions of Africa and Latin America, as the basis of a significant cultural and educational impact on developing countries. In 2010, the two public universities of the Canary Islands joined together in a national proposal for their recognition as a Campus of Excellence by the Spanish Ministry of Education. As a result, they were awarded Regional Campus of Excellence aiming to become a leading reference to catalyse the flow of talent and the transference of knowledge and innovation for the European-Africa-South America axis in the fields of Biomedicine, Marine Sciences and Astrophysics. This initiative, funded by both regional and national governments, should facilitate the development of a new profitable, productive and social structure of the Canary Islands. Along these lines, and considering that CIBICAN is one of the major biomedical research centres of the region, it was expected to play an important role in promoting collaboration across disciplines and to strengthen the bridges between basic and clinical research, that in turn would accelerate the transfer of emerging scientific and technological advances to pharmaceutical companies and medical end users.

CIBICAN research programmes include:

- 1.- **Brain and related diseases:** The main aim of this programme is to study the biology and pathology of the nervous system, with particular emphasis on the mechanisms leading to neurodegenerative diseases (e.g., Alzheimer, Parkinson diseases), the cellular and molecular basis of neuronal vulnerability, and the biology of human brain cortical development.
- 2.- **Chronic, infectious and age-related diseases affecting quality of life:** The main

aim of this programme is to promote translational research in organ and systemic chronic diseases, whose severity impairs with aging affecting the quality of life. Among others, they include chronic diseases affecting the kidney, the gastrointestinal tract and the cardiovascular system, or inflammatory and immunological based diseases, as the rheumatoid arthritis or the HIV infection.

3.- Genetic-based and rare diseases: This programme is based on the particular characteristics of the Canary Islands due to their geographical location. Many pathologies have a genetic component influenced by the insular concept since the population does not suffer important genetic variation. Therefore, the research groups of this programme are focused on the molecular basis of cancer and metabolic rare diseases.

4.- Medicinal chemistry and innovation: This programme does not only focus on the field of medicinal chemistry, but also covers activities oriented towards innovation. The main interests are the structural aspects of the interaction between molecules of biological relevance, the isolation and identification of bioactive compounds, and the design and preclinical development of molecules with potential therapeutic interest.

5.- Societal involvements on health issues: As an area associated to the Canary Islands Public Health Service, it covers research related to the safety and cost-effectiveness of new health care technologies as well as their economic, organizational, societal and ethical impact. These research activities are expected to help health policy makers on decisions related with adoption and distribution of new health technologies, a strategic step in translating research findings to health care services.

Based on these previous research activities, the IMBRAIN proposal intended to further increase research at CIBICAN, to build its innovation and to become a leading centre in Health Sciences. Through the implementation of a number of activities, it is expected that CIBICAN could have a significant impact in promoting regional economic development, and in spreading health knowledge into the outermost EU regions and Africa.

1.3.- Roadmap of the IMBRAIN project

The objectives of IMBRAIN were to be achieved through different measures: (i) exchange of know-how and experience with EU partnering organizations; (ii) recruitment of experienced researchers and technical staff; (iii) upgrading of research

infrastructure; (iv) elaboration of a strategic IP development plan for IP management and innovation capability building; (v) dissemination of knowledge on health and increasing the visibility of CIBICAN activities at regional, national and EU levels. The fulfilment of these objectives would be evaluated at the end of the project to define specific actions for future sustainability of the project.

Taking into account the overall objective of IMBRAIN, that is, to become an internationally recognised centre of excellence in health sciences and translational research based on innovative approaches, a SWOT analysis was performed to establish suitable criteria on which future development could be based:

STRENGTHS
Medium-high quality and quantity of multidisciplinary research groups
Successful record of projects funded by national programmes in Biomedicine and Health-related Sciences
Availability of state-of-the-art equipment
Ability to obtain funding for scientific infrastructures
Active collaboration with national and international groups
Strong network of basic and clinical research groups
Support from local government (Insular Council of Tenerife)

WEAKNESSES
Small size of research groups
Ageing of research staff
Lack of a strategic plan for innovation and intellectual property management
Lack of a dedicated structure for technology transfer and intellectual property management
Complexity of the administrative management of research
Limited participation in competitive research programmes of the ERA
Limited culture of innovation and exploitation of research results

OPPORTUNITIES
Geographical location close to Africa and South-America
Special fiscal system that could attract international investors
Potential access to specific European programmes for outermost regions
Increasing demand of health care services from resident population and tourists

THREATS
Progressive loss of human resources due to different reasons (e.g., economic crisis, remote location, etc.)
Comparative low regional investment on research programmes
Absence of a network of biotech/pharma industry
Distance from other European research centres and institutions devoted to innovation

Among the different conclusions that were derived from that analysis, it was found that while the geopolitical situation of the Canary Islands provides certain advantages (i.e., proximity to Africa, interface between different continents and cultures, etc.), its location was also an impediment to the scientific development. These barriers included its isolation from decision-making centres and resources, dissuading non-native researchers from establishing their laboratories in the Canary Islands. In addition, the problem of accessibility was reflected in the excessive cost and effort required to coordinate and collaborate in projects, as well as in disseminating their results. Despite the quality of the research groups and their focus on priority areas, problems associated with recruiting experienced new researchers, technical staff and managers were also considered a serious handicap to progress. As a consequence, a series of interconnected actions were proposed to achieve the following specific objectives:

Strengthen core research excellence and innovation capability
Reinforce the research potential by supporting the mobilization of human resources through twinning with other European partnering organizations
Improve the current human resources by recruiting experienced researchers with expertise in novel methodological approaches, capable of establishing new laboratories
Improve the technical capacity by upgrading equipment and recruitment of technical staff
Improve the capacity to accelerate the translation and transference of biomedical knowledge
Improve the capabilities on intellectual property, management of know-how and protection of the innovation by training and updating the current competences, and the recruitment of IP and innovation managers
Networking with other European world class research players and enterprises
Establish strategic partnerships and wide-range collaborations between CIBICAN researchers and high excellence groups and centres across the EU
Build the capacity of CIBICAN for a better collaboration with biotechnology companies and partnering entities towards a valorisation of high potential research actions
Increase the active participation in European strategic actions in Health
Disseminating and promoting CIBICAN activities at regional, national and international levels
Promote institutional mobilization by strengthening the role of CIBICAN within the Campus of Excellence of the Canary Universities and the Scientific and Technological Park of Tenerife
Participate in relevant scientific events, increase the number and quality of scientific articles, and organize specific workshops and conferences on monographic themes

Promote CIBICAN research excellence and increase its visibility at national and European levels through the dissemination, promotion and awareness plan and package

To achieve these goals, an Action Plan was devised and formed the basis of the IMBRAIN proposal. It contained a package of measures designed to address the specific needs of CIBICAN at different levels. Among them, efforts would be devoted to design strategies that could overcome the main barriers that made the participation of researchers in collaborative projects more difficult, and transform them into active players in ERA. Furthermore, special attention was also paid to the management of the IP and innovation.

In the context of the IMBRAIN proposal, the Action Plan was integrated into a specific work plan containing seven different work packages. Thus, project management and coordination of the different activities would be the main task of **WP1** to ensure coherence and efficiency of the entire programme. It would include both strategy and daily management of the project, administrative issues, quality control, and interactions with the different committees set up to monitor the progression of the project.

Considering the main objective of the “Research Potential” call, that is, the improvement of the research and innovation potential of existing and emergent centres of excellence in the Convergence and Outermost regions of the EU, the specific work plan should serve both as an instrument for the reinforcement of human and infrastructural capacities. Thus, **WP2** contained a series of two-way secondments with selected European partnering institutions to exchange experience and knowledge between outside experts and CIBICAN’s staff. It would also cover the specific training of the relevant staff for the optimized use of newly acquired equipment. In close connection with WP2, **WP3** would be devoted to the recruitment of experienced researchers and technicians. A critical aspect of this action would be the existence of an institutional plan at ULL for its sustainability beyond IMBRAIN’s end.

WP4 was designed to improve the scientific and technical capabilities of CIBICAN by upgrading some of the large scientific equipment. It would be translated into significant improvements in the platform of microscopy, cellular imaging, genomics and phenotype-oriented drug design. Specific training of the relevant staff (WP2, WP3) was also considered to promote the newly acquired infrastructural capabilities.

Trying to address the innovation dimension of the “Research Potential” call, **WP5** was devoted to the elaboration of a strategic IP development plan for IP management and protection, and Innovation Capability building. This was performed in cooperation with several European organizations and experts, and would serve for the improvement and development of the current potential available at ULL, and to create the appropriate framework at CIBICAN.

A set of communication and dissemination activities (**WP6**) would complement the aforementioned measures to increase the visibility of CIBICAN research groups, both in the ERA and in the research community at large, as well as at local, regional and national public levels. These actions would serve both to highlight the on-going research activities and technical facilities, and to promote upcoming scientific activities and relevant results. Taking into account that more traditional dissemination activities were also considered to interact with different societal actors, WP6 would be carried out in close connection with WP1 and WP5.

Finally, an evaluation process would be performed using the available institutional Quality Assessment Unit at ULL, with the assistance of both the Steering Committee and the external Advisory Board specifically set up in the context of the IMBRAIN proposal. Furthermore, this action would be complemented through an independent evaluation by experts nominated by the European Commission (**WP7**). This final action is the focus of the present report.

1.4.- Ex-post evaluation process

This proposal “IMBRAIN” was selected within the “Capacities Work Programme: Research Potential” call on *'Unlocking and developing the research potential of research entities established in the EU's Convergence regions and Outermost regions'*.

The proposal (n° 316137) was evaluated in May 2012 and got the highest score of 15/15.

Within the description of the proposal defined seven work packages were established. **WP7** (Evaluation Facility) was dedicated to evaluation using the available institutional Quality Assessment Unit of the University of La Laguna, with the assistance of the Scientific Committee and the external Advisory Board and complemented through an independent evaluation by experts from the Commission.

The “*EU experts*” team was selected according to the following protocol: 1) The EU coordinator, M. Olivier Brunet, the EU Policy Officer, from the Directorate-General for Research and innovation, in charge of spreading excellence and widening participation in HORIZON 2020 and connecting research and innovation to regional and urban policies, used the [European Commission's experts database](#) to select experts for the evaluation. The EU Policy Officer chose a first list of 70 experts according to keywords reflecting the competence of the experts, fitting the best with the scientific content of the proposal and without apparent conflict of interest. 2) This list of 70 experts was submitted to the coordinator of the project, Professor Rafael Solís, for a second round of selection for refining better the adequacy of competence versus IMBRAIN project. 3) The third round, headed by the EU Officer consisted on finding amongst the short listed experts the ones who had the disponibility for preparing and spending two on site missions within the time frame imposed by the WP7 proposal.

Three names were finally selected by the European Commission:

- **Antonio Pineda-Lucena**, PhD, Director, Drug Discovery Unit, La Fe Institute of Health Research, Valencia
- **José Antonio Costoya**, MD, PhD Team leader at CIMUS, University of Santiago de Santiago de Compostela School of Medicine, IDIS, Santiago de Compostela
- **Roland Pochet**, PhD, Professor, past-chair of the BIOMEDICINE Domain of the intergovernmental organisation COST, past-scientific manager of another REGPOT project: « Glowbrain » from University of Zagreb (2013-2015)

A contract was signed between the University of La Laguna, the IMBRAIN coordinator and each expert. The contract contains 8 articles. Article 1 defined the tasks and the content of the evaluation report. For instance, it was agreed that the evaluation shall indicate novel strategies, suggest measures aimed for its sustainability and the maintenance of leading edge innovative research at ULL. Article 1 also specified that the evaluation is not a simple evaluation of the work carried out by the project but is aiming at assisting the coordinator’s Institute to take the right directions in the future to assure its sustainability in lines with innovation strategies and market trends. The evaluation shall include an updated SWOT analysis of ULL and CIBICAN.

A chair expert (R. Pochet) was nominated by consensus between the IMBRAIN coordinator and the experts.

The evaluation started early March 2016 by intensive exchanges of communications between the coordinator, Professors Rafael Alonso Solís and Roland Pochet. The coordinator sent without restriction and in time all the necessary documents needed for the experts to acquire knowledge on the IMBRAIN project and its progresses. Documents were stored within a cloud storage service accessible to the experts.

It quickly appeared that the Steering Committee nominated in 2013 became rapidly amputated from most of his political part. The reason was because several members from the regional and national governments were no more in charge due to changes after election. This also happens with the Rector of ULL. The expert team rapidly realizes that political absence constitutes a major obstacle for fulfilling the Sustainability task.

R. Pochet, being in Brussels took the initiative to have, before the first mission, a personal meeting with Dr. Octavio Quintana-Trias, a previous advisor of the Spanish Government and currently the principal advisor at the DG Research and Innovation of the European Commission. Dr. Quintana-Trias kindly informed him about the importance for the National Government of being recognized as Center of Excellence and of following the priorities established by the government. This information could allow us (the experts) to better integrate the importance of the top-down approach. To better nurture the important political aspect, R. Pochet took also the initiative to write to the Spanish members of the European Parliament and in particular to Gabriel MATO and Juan Fernando LÓPEZ AGUILAR both from the Canary Islands.

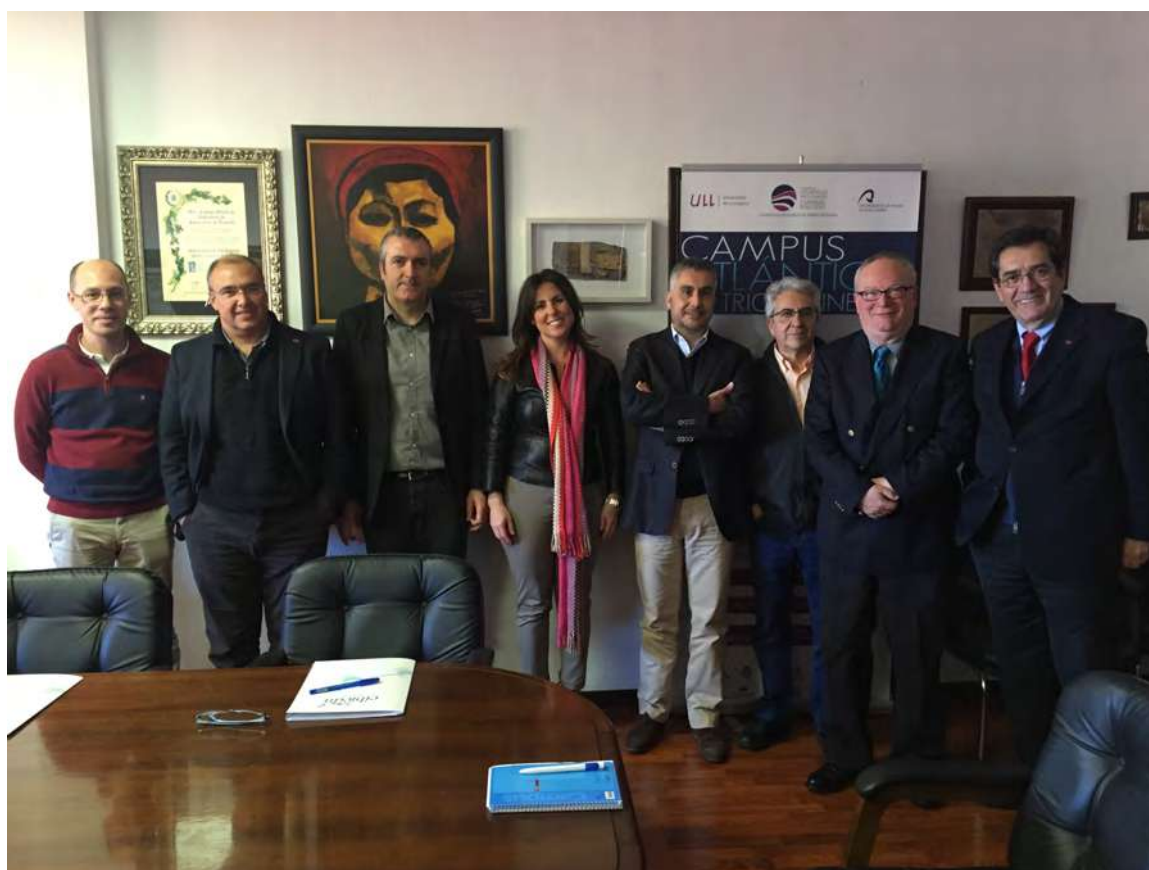
A first mission started April 3 and ended April 7 in which experts could visit the laboratories, organized a round table with the IMBRAIN employees, and had face-to-face discussions with researchers. An important meeting of 2 hours gathering the Rector, Antonio Martín (ULL Chancellor), Francisco Almeida (ULL Vice-Chancellor of Research), Carmen Rubio (Vice-Chancellor of Internationalization), and Rafael Alonso. From this meeting we could perceive at that stage that there were different visions between ULL policy and CIBICAN strategy. We therefore insisted to have a meeting with ALL the stakeholders within our second mission. A tentative date was proposed: MAY 17. During this first mission, another important meeting was organized with the CABILDO President.

The members of the Advisory Board could not be present during this first mission.

From this mission it appears that the sustainability part could not be substantiated without having a meeting with ALL the stakeholders.

In the period between the two missions, the experts' priority was to organize in close cooperation with the Rector, the vice-rectors and the IMBRAIN coordinator a detailed agenda to be held during our second mission and chaired by the Rector. R. Pochet took also the initiative to personally meet Mr. José LUENGO, head of the DELEGACION DEL GOBIERNO DE CANARIAS EN BRUSELAS, who also had a conversation with Professor Antonio MARTINON, ULL Chancellor. In addition, Mr MATO and Mr LÓPEZ AGUILAR were also directly contacted and are following the process.

April 4, 2016 Meeting with University of La Laguna Authorities



1 2 3 4 5 6 7 8

1. Daniel Alonso, Professor of Physics, coordinator of the ULL Office for Strategy
2. Francisco Almeida Rodríguez, Vice-Chancellor for Research
3. Jose Antonio Costoya Puente, Evaluator
4. María del Carmen Rubio, Vice-Chancellor for International affairs
5. Antonio Pineda-Lucena, Evaluator
6. Rafael Alonso Solís, IMBRAIN coordinator
7. Roland Pochet, Evaluator

8. Antonio Martínón Cejas, ULL Chancellor

The second mission of experts occurred from May 16 to May 20. Three meetings were organized (see Agenda and Minutes in Annexes).

The May 17 meeting's afternoon gathered all the stakeholders and was chaired by Professor Antonio Martínón, ULL Chancellor.

The meeting was organized in 3 sessions, the first was “Comments by the Advisory Committee” the second session was “Presentation of IMBRAIN results” by the evaluation experts, and the third session was “The presentation and comments by the representatives of National, Regional and Local agencies. To facilitate the communication and the debates, simultaneous translation in English and Spanish was organized. The picture below illustrates the speakers of the “political session” or “afternoon session” (see Agenda and Minutes in Annexes).



1 2 3 4 5 6

- 1.- Manuel Miranda, Director of the Canary Agency of Research, Innovation & Society of Information
- 2.- Félix Fariña, ITC Counsellor, Insular Council of Tenerife
- 3.- Jesús Morera, Ministry of Health of the Canary Islands
- 4.- Roberto Moreno, Director, Canary Islands Health Service
- 5.- Alfonso Beltrán, General Deputy, International Research Projects, ISCIII
- 6.- Antonio Martínón, ULL Chancellor

This series of 3 meetings allowed each stakeholder to express how each of them could express their position within this complex matter of sustainability. The conclusions and recommendations are presented in the minutes (see Annexes). For an improved transparency and communications, the Minutes were written in both English and Spanish.

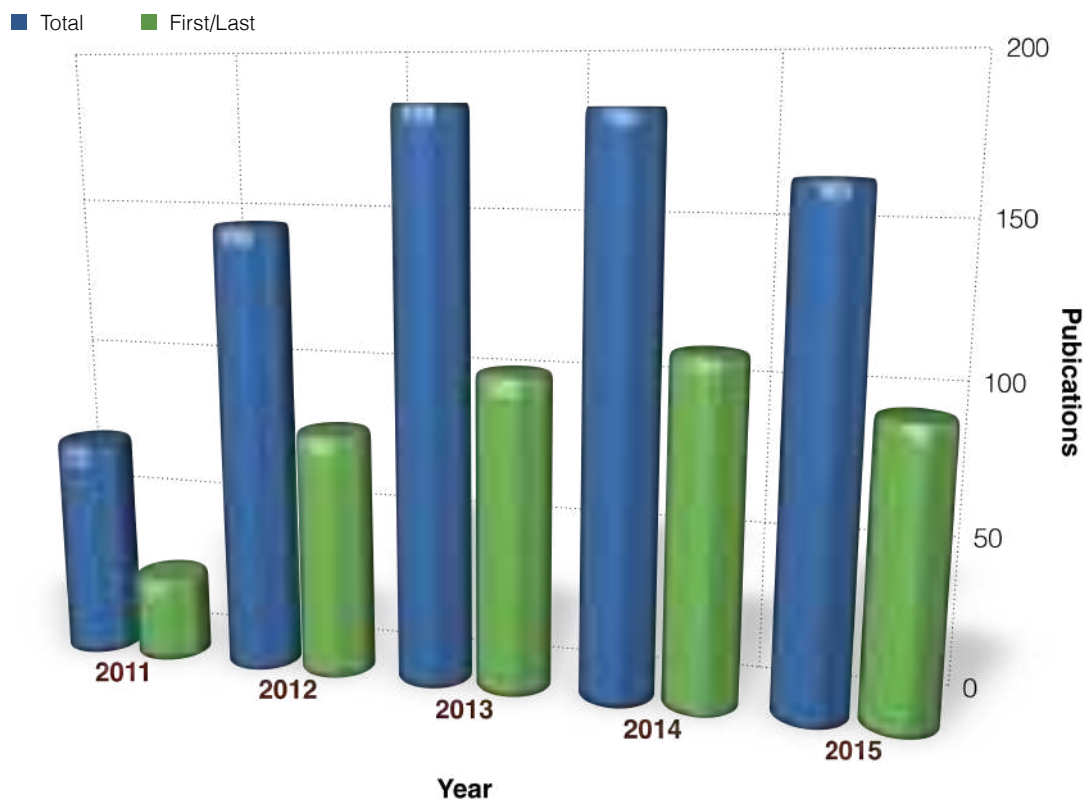
II.- PROJECT OUTCOMES

2.1.- Publications

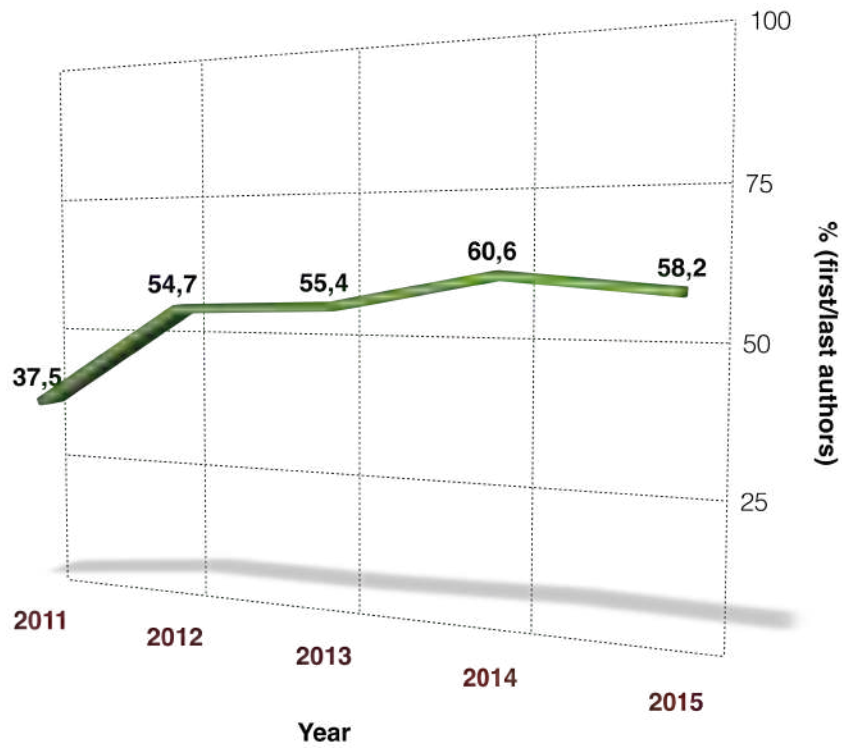
One of the main goals of IMBRAIN was to improve the dissemination of scientific activities of CIBICAN researchers through publications in scientific journals. It was expected that the implementation of specific actions included in the proposal (e.g., hiring of new researchers, acquisition of state-of-the-art infrastructure, etc.) would be translated in an increase in both the quantity and the quality of the scientific publications generated by the researchers involved in the project.

In order to evaluate this activity, a bibliometric analysis was performed. Different parameters were evaluated to assess the evolution of the indicators, and the analysis was extended to the two previous years (2011, 2012) before IMBRAIN initiated its activities:

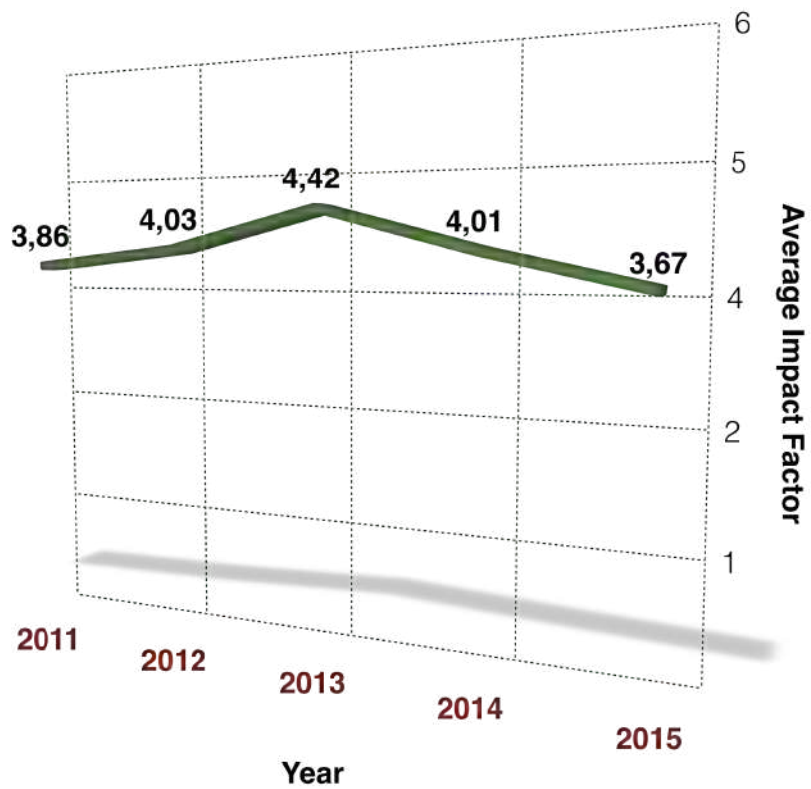
Total number of publications and publications including a CIBICAN researcher as first or last author



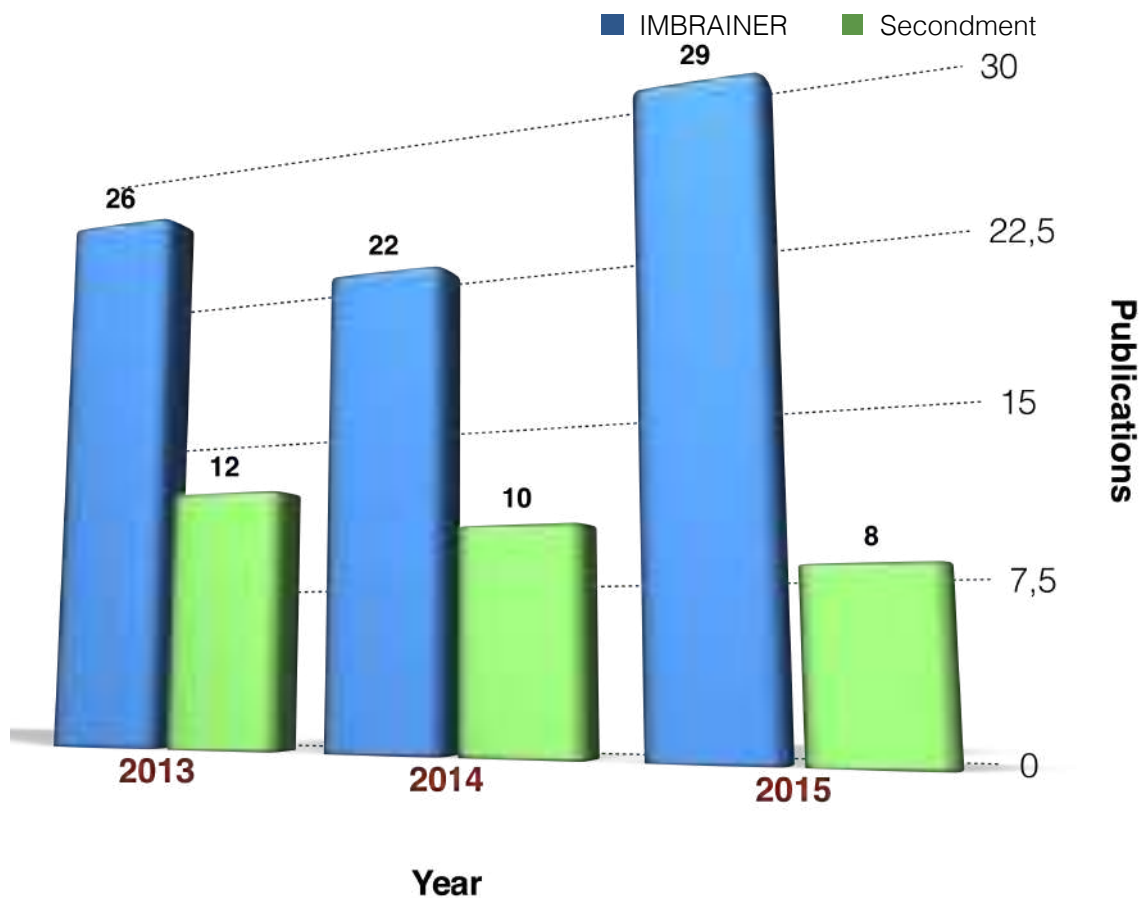
Percentage of total publications with a CIBICAN researcher as first/last author



Average impact factor of the publications



Publications involving researchers hired in the context of the proposal and publications obtained as a result of a research secondment



The main conclusions of this analysis are the following:

- 1.- IMBRAIN proposal effectively translated in a significant increase in both the number of publications and in the leadership of scientific studies by CIBICAN researchers.
- 2.- A moderate increase in the impact factor of the publications was obtained during the period IMBRAIN project was active.
- 3.- Researchers hired in the context of the IMBRAIN proposal were actively involved in the generation of scientific results, and research secondments were a useful tool for joint publications with EU partnering organizations.

A slight decrease in most of the indicators was observed in 2015, perhaps reflecting the end of the project and a shift in the focus of the researchers towards the search for new positions.

2.2.- Secondments

As part of the action plan of the IMBRAIN project, a number of specific research partnerships were established on the basis of a) specific scientific or technical needs identified within the CIBICAN research programmes, b) advance experience of the partner centre, c) previous or on-going collaborations between CIBICAN researchers and those at partnering institutions, and d) identified potential for the development of sustainable research cooperation and participation in collaborative European projects. During the project, these collaborations were extended to other centres and researchers, manifested through exchanges, participation in seminar programmes, co-organization of events and the preparation of collaborative proposals to different European funding calls.

A summary of the different actions involving the research programmes participating in the IMBRAIN proposal is listed below:

IMBRAIN outcomes resulting from exchanges and secondments with other European partner centres		
RESEARCHER FROM ULL (abroad partner underlined) PARTNER CENTRE	1. PUBLICATIONS (IMBRAIN staff in bold; EU partners underlined; *corresponding author) 2. GRANTS APPLIED IN COLLABORATION OR DIRECTLY RESULTING FROM COLLABORATION WITH EU PARTNERS	1. KNOWLEDGE & TECHNOLOGY TRANSFER ACTIONS (finished and/or on-going) 2. ORGANIZATION OF WORKSHOPS AND SCIENTIFIC OR DISSEMINATION EVENTS 3. OTHERS
Teresa Giraldez <u>Andrew R. Plested</u> Leibniz Institute for Molecular Pharmacology (Berlin) ¹ T. Giraldez holds a Ramon y Cajal grant from the Spanish MINECO	Publications <ul style="list-style-type: none"> • P Miranda, JE Contreras, <u>AJR Plested</u>, FJ Sigworth, M Holmgren, <u>T Giraldez</u>*. State-dependent FRET reports calcium- and voltage-dependent gating-ring motions in BK channel. Proc Natl Acad Sci USA 2013; 110:5217-22. Grants <ul style="list-style-type: none"> • Senate Committee Competition, Leibniz Association (2012). Illuminating the activation of glutamate receptors with fluorescent probes. PI: A.R. Plested (collaborator: T. Giraldez). Funding: 693,000 €. • ISCHII/MINECO (2012). Study of new mechanisms involved on ionic regulation of cell excitability underlying neuronal damage and neurological diseases (PS12/00428). PI: T. Giraldez (collaborator: A.R. 	KTTO activities <ul style="list-style-type: none"> • After setting up an advanced FRET unit at the ULL, as a result of the collaboration between T. Giraldez and A. Plested, the company NIKON asked T. Giraldez to develop a demonstrating set up as a singular EU infrastructure. Workshops & dissemination events <ul style="list-style-type: none"> • International Workshop on <i>Doing Biology with light</i>. Tenerife 24-26 October 2013. Others <ul style="list-style-type: none"> • Seminars in both centres and participation of A.R. Plested in advanced teaching activities in master and doctoral programs at ULL.

	<p>Plested). Funding: 102,850 €.</p> <ul style="list-style-type: none"> • Leibniz Association (2013). Optical silencing and recording of neurotransmission in the mammalian brain. PI: James Poulet (collaborator: T. Giraldez). • EXPLORA-MINECO (2014). Optoelectrical dynamics of ion channel activation and subcellular nanodomains (OPDICS) (SAF2013-50085-EXP). PI: Teresa Giraldez (collaborator: A.R. Plested). Funding: 75,000 €. • MINECO (2014). Funding for Scientific & Technical Equipment. PI: T. Giraldez (collaborator: A.R. Plested). Funding: 80,000 €. • European Research Council Consolidator (ERC, 2015). Optoelectrical dynamics of ion channel activation and calcium nanodomains: ERC-2014-CoG648936-NANOPDICS. PI: Teresa Giraldez (see ERC grant by A.R. Plested below). Funding: 2 M€. • European Research Council Consolidator (ERC, 2015). ERC-2014-GLUACTIVE. PI: Andrew R. Plested. Funding: 2 M€. (these two applications were presented as a result of the collaboration between both laboratories during IMBRAIN secondment). 	
<p>Jose Luis Herrera¹ Francisco Wandosell Centre for Molecular Biology, CSIC, Madrid Luis M. Garcia-Segura Institute of Neurobiology “Ramon y Cajal”, CSIC, Madrid</p> <p>¹JL Herrera was hired by funds from IMBRAIN</p>	<p>Publications</p> <ul style="list-style-type: none"> • JL Herrera, R Alonso, L Ordoñez-Gutierrez, E Salido, G Hernandez, A Morales, M Diaz, V Martin, N Fabelo, J Marrero-Alonso, LM Garcia-Segura, F Wandosell. Synergistic effect between chronic estradiol treatment and DHA-enriched diet on Aβ burden in APPswe/PSEN1ΔE9 mice. Abstract presented at the 2015 Alzheimer’s Association International Conference, Washington, 2015. <p>This abstract and the manuscript listed in the next column was the result of a collaboration between these two centres and CIBICAN, and the stage of JL Herrera at CBM and Cajal’s Institute (2014-2015) funded by IMBRAIN, as well of the visits of R Alonso, F Wandosell and LM Garcia-Segura to design and coordinate the experiments.</p>	<p>Others</p> <ul style="list-style-type: none"> • JL Herrera, L Ordoñez-Gutierrez, G Fabrias, J Casas, E Salido, A Morales, G Hernandez, LM Garcia-Segura*, R Alonso*, F Wandosell*. Brain lipidome remodelled by dietary DHA synergizes with estradiol to reduce amyloid-β accumulation in a mouse model of AD. <i>Manuscript being submitted to Plos Biology.</i>
<p>Laura Sayas¹ Jesus Avila</p>	<p>Publications</p> <ul style="list-style-type: none"> • J Avila, N Pallas, M Bolos, CL 	

<p>Centre for Molecular Biology, CSIC, Madrid</p> <p>¹L Sayas was hired by funds from IMBRAIN</p>	<p>Sayas, F Hernandez. Intracellular and extracellular microtubule associated protein tau as a therapeutic target in Alzheimer disease and other tautopathies. <i>Expert Opin Ther Targets</i>. 2016 Feb 16:1-9 [Epub ahead of print].</p> <ul style="list-style-type: none"> • CL Sayas*, E Tortosa, F Bollati, S Ramirez-Rios, I Arnal, J Avila*. Tau regulates the localization and function on End-binding proteins 1 and 3 in developing neuronal cells. <i>J Neurochem</i>. 2015; 133(5):653-67. • CL Sayas*, J Avila. Regulation of EB1/3 proteins by classical MAPs in neurons. <i>Bioarchitecture</i>. 2014; 4(1):1-5. • CL Sayas*, J Avila*. Crosstalk between axonal classical microtubule-associated proteins and end binding proteins during axon extension: possible implications in neurodegeneration. <i>J Alzheimers Dis</i>. 2014;40 Suppl 1:S17-22. 	
<p>Diego A. de la Rosa¹ Catalina Sierra² <u>Frederic Jaisser</u>, <u>Nicolette Farman</u></p> <p>Centre des Cordeliers, Paris</p> <p>¹D.A.R. is ULL staff. ²C.S. is PhD student at the ULL.</p>	<p>Publications</p> <ul style="list-style-type: none"> • S Messaudi, B Gravez, A Tarjus, V Pelloux, A Ouvrard-Pascaud, C Delcayre, J Samuel, J-M Launay, C Sierra-Ramos, D Alvarez de la Rosa, K Clement, <u>N Farman</u>, <u>F Jaisser</u>. Aldosterone-specific activation of cardiomyocyte mineralcorticoid receptor in vivo. <i>Hypertension</i>.2013; 61(2):361-7. • B Gravez, A Tarjus, R Jimenez-Canino, S El Mograhbi, S Messaoudi, D Alvarez de la Rosa, <u>F Jaisser</u>. The diuretic torasemide does not prevent aldosterone-mediated mineralcorticoid receptor activation in cardiomyocytes. <i>PLoS One</i>. 2013; 8(9):e73737. • R Urbanet, A Nguyen Dinh Cat, A Feraco, B Gravez, S El Mograhbi, D Alvarez de la Rosa, D Quilliot, P Rossignol, N Venteclef, K Clement, F Fallo, RM Touyz, <u>F Jaisser</u>. Adipocyt mineralcorticoid receptor activation leads to metabolic syndrome and induction of prostaglandin D2 synthase. <i>Hypertension</i>. 2015; 66(1):149-57. <i>Article selected for an invited editorial commentary.</i> <p>Grants</p> <ul style="list-style-type: none"> • MINECO (2014). Molecular basis of aldosterone multisystemic effects: a key to novel therapeutic approaches in mineralcorticoid pathophysiology (BFU2013-47089). PI: D.A. de la 	<p>Workshops & dissemination events</p> <ul style="list-style-type: none"> • COST action on <i>Mineralcorticoid Receptor Cell Biology and Pharmacology</i>. Tenerife 9-13 February 2015.

	Rosa (collaborator: F. Jaisser). Funding: 160,000 €.	
<p>Esteban Porrini¹ Sergio Luis-Lima¹ <u>Flavio Gaspari,</u> <u>Giuseppe Remuzzi</u> <u>Piero Ruggenti</u></p> <p>Mario Negri Institute for Pharmacological Research, Bergamo</p> <p>¹E. Porrini and S.L.-Lima were hired by IMBRAIN funds.</p>	<p>Publications</p> <ul style="list-style-type: none"> • AP de Vries, <u>P Ruggenti</u>, XZ Ruan, M Praga, JM Cruzado, IM Bajema, VD D'Agati, HJ Lamb, D Pongrac Barlovic, R Hojs, M Abbate, R Rodriguez, CE Mogensen, E Porrini*. ERA-EDTA Working Group Diabetes. Fatty kidney: emerging role of ectopic lipid in obesity-related renal disease. <i>Lancet Diabetes Endocrinol</i> 2014; 2(5):417-26. • E Porrini*, <u>P Ruggenti</u>, C-E Mogensen, D Drazenka, Pngrac Barlovic, M Praga, JM Cruzado, R Hojs, M Abbate, APJ de Vries [for the ERA-EDTA Working Group Diabetes]. A role for non-proteinuric pathways in loss of renal function in patients with type-2 diabetes? <i>Lancet Diabetes Endocrinol</i> 2015; 3(5):382-91. • S Luis-Lima, <u>F Gaspari</u>, E Porrini, M Garcia-Gonzalez, N Batista, F Bosa-Ojeda, I Oramas, F Carrara, JM Gonzalez-Posada, D Marrero, E Salido, A Torres, A Jimenez-Sosa. Measurement of glomerular filtration rate: Internal and external validation of the iohexol plasma clearance technique by HPLV. <i>Clin Chim Acta</i>. 2014; Mar 20;430:84-5. • S Luis-Lima, D Marrero-Miranda, A Gonzalez-Rinne, A Torres, JM Gonzalez-Posada, A Rodriguez, E Salido, A Aldea-Perona, F Carrara, JA Gonzalez-Gerique, N Negrin-Mesa, L Perez-Tamajon, <u>F Gaspari</u>, <u>F Carrara</u>, <u>F Gonzalez-Posada</u>, A Rodriguez, E Salido, <u>A Aldea-Perona</u>, <u>F Gaspari</u>, F Carrara, JA Gomez-Gerique, N Negrin-Mena, L Perez-Tamajon, F Gonzalez-Rinne, H Jimenez-Hernandez, A Jimenez-Sosa, E Porrini*. Estimated Glomerular filtration rate in renal transplantation: the nephrologist in the mist. <i>Transplantation</i>. 2015; Dec 99(12):2625-33. 	<p>KTTO activities</p> <ul style="list-style-type: none"> • Presentation of technology at IMBRAIN Innovation Summit, Tenerife 19-20 June 2015. Esteban Porrini: Measuring (Not estimating) renal function in special clinical conditions. • Presentation accepted for Biovaria 2016 (Munich, 17 May). Esteban Porrini: Measuring (Not estimating) renal function in special clinical conditions. • In relation to the commercialization of this technology, an agreement was with Ascenion Gmb (Munich) for the elaboration of a business plan. <p>Workshops & dissemination events</p> <ul style="list-style-type: none"> • International Workshop on <i>Diabetes and Obesity in Renal Diseases</i>. Tenerife 1-2 November 2014. <p>Others</p> <ul style="list-style-type: none"> • Proposal application to H2020 call (H2020-SCI-2016-2017-733175): <i>Supportive Therapie for Prednisone in Glomerulonephritis</i> (E. Porrini responsible investigator from ULL/CIBICAN). • Proposal application to H2020 call (H2020-SCI-2016-2017-733357): Chronic caloric restriction effects with or without intermittent fasting on measured GFR decline and cardiovascular and metabolic outcomes in diabetic and non-diabetic obese subjects: the CHEF trial. (E. Porrini responsible investigator from ULL/CIBICAN).
<p>Jose M. Padrón¹, Leticia Gonzalez Leon² <u>Godefridus J</u> <u>Peters,</u> <u>Elisa Giovanetti</u></p> <p>VU University Medical Center,</p>	<p>Publications</p> <ul style="list-style-type: none"> • M Maftouth, A Avan, R Sciarrillo, C Granchi, LG Leon, et al ... <u>G Peters</u>, <u>E Giovanetti</u>. Synergistic interaction of novel lactate dehydrogenase inhibitors with gemcitabine against pancreatic cancer cells in hypoxia. <i>Br J Cancer</i>. 2014; 110(1):172-82. 	<p>KTTO activities</p> <ul style="list-style-type: none"> • Presentation accepted for Biovaria 2016 (Munich, 17 May). Leticia G. Leon: Liquid biopsy for fast cancer detection. <p>Workshops & dissemination events</p> <ul style="list-style-type: none"> • COST action on <i>Chemical Approaches to Targeting Drug Resistance in Cancer Stem Cells</i>,

<p>Amsterdam</p> <p>¹J.M.P. is ULL staff. ²L.G.L. was hired by IMBRAIN funds.</p>	<ul style="list-style-type: none"> • <u>E Giovanetti</u>, LG Leon. New strategies and applications for drugs targeting EGFR and c_met. <i>Curr Drug Targets</i>. 2014;15(14):1261-2. • E Galvani, J Sun, LG Leon, et al ... <u>G Peters</u>, <u>E Giovanetti</u>. NF-kB drives acquired resistance to a novel mutant-selective EGFR inhibitor. <i>Oncotarget</i>. 2015 Dec 15;6(40):42717-32. • M Santarpia, C Rolfo, <u>GJ Peters</u>, LG Leon, <u>E Giovanetti</u>. On the pharmacogenetics on non-small cell lung cancer treatment. <i>Expert Opin Drug Metab Toxicol</i>. 2016 Mar; 12(3):307-17. <p>Grants</p> <ul style="list-style-type: none"> • Leticia G. Leon participates in a funded grant from the Dutch Cancer Society (KFW) and Mesothelioma Applied Research Foundation. PI: Elisa Giovanetti. • Leticia G. Leon received a 2-year fellowship in the Cancer Pharmacology Laboratory at Pisa University. 	<p>and International Conference on <i>Molecular Pharmacology</i>. Tenerife 14-15 October 2014.</p>
<p>Antonio H. Daranas¹ <u>Murien Coen</u>, <u>John Linton</u></p> <p>Imperial College, London</p> <p>¹A.H.D. was hired by IMBRAIN funds.</p>	<p>Publications</p> <ul style="list-style-type: none"> • A Daranas, O Caillies, <u>M Coen</u>, D Garcia, A Novelli, J Franco, P Riobo, J Fernandez. NMR metabolomics for the evaluation of diarrhetic seahorse poisoning toxin effects. 11th Annual International Conference of the Metabolomics Society, San Francisco 29 June–2 July. 	<p>KTTO activities</p> <ul style="list-style-type: none"> • Presentation accepted for Biovaria 2016 (Munich, 17 May). Antonio H. Daranas: Improving quality control of macromolecules.
<p>Laura Vallejo-Torres¹ <u>Stephen Morris</u>, <u>Rachel Hunter</u></p> <p>University College, London</p> <p>¹L.V. T. was hired by IMBRAIN funds.</p>	<p>Publications</p> <ul style="list-style-type: none"> • EJ Culme-Seymour, K Mason, L Vallejo-Torres, C Carvalho, L Paratington, C Crowley, NJ Hamilton, EC Toll, CR Butler, MJ Elliot, MA Birchall, MW Lowdel, C Mason. Cost of stem cell-based tissue-engineered airway transplants in the United Kingdom: Case series. <i>Tissue Eng Part</i>. 2015 Dec 24[Epub ahead of print]. • L Vallejo Torres, I Castilla, ML Couce, C Perez-Cerda, E Martin-Hernandez, M Pineda, J Campistol, A Arrospide, <u>S Morris</u>, P Serrano-Aguilar. Cost-effectiveness analysis of a National Newborn Screening Program for biotinidase deficiency. <i>Pediatrics</i>. 2015; 136(2):e424-32. • J Kinge, L Vallejo Torres, <u>S Morris</u>. Income-related inequalities in avoidable mortality in Norway: a population-based study using data 	

	<p>from 1994-2011. Health Policy. 2015;119(7):889-98.</p> <ul style="list-style-type: none"> • L Vallejo-Torres, I Castilla, N Gonzalez, <u>R Hunter</u>, P Serrano-Perez, L Perestelo-Perez. Cost-effectiveness of electroconvulsive therapy compared to repetitive transcranial magnetic stimulation for treatment-resistant severe depression: a decision model. Psychol Med. 2015; 45(7):1459-70. • L Vallejo-Torres, D Hale, S Morris, RM Viner. Income-related inequality in health and health-related behaviour: exploring the equalisation hypothesis. J Epidemiol Comm Health. 2014 Jul;68(7):615-21. 	
<p>Angel Acebes¹ <u>Alberto Ferrus</u></p> <p>Cajal's Institute of Neurobiology, CSIC, Madrid</p> <p>¹A.A. was hired by IMBRAIN funds</p>	<p>Publications</p> <ul style="list-style-type: none"> • A Martin-Peña, A Acebes, JR Rodriguez, V Chevalier, S Casas-Tinto, R Strauss, <u>A Ferrus</u>. Cell types and coincidence synapses in the ellipsoid body of Drosophila. Eur J Neurosci. 2014; 39(10):1586-601. • G Cuesto, S Jordan, JR Alvarez, L Enriquez-Barreto, A Ferrus, M Morales, A Acebes*. 	
<p>Eduardo Salido¹ <u>Luis Blanco</u></p> <p>Centre for Molecular Biology, CESIC, Madrid</p> <p>¹E.S.is ULL staff.</p>	<p>Publications</p> <ul style="list-style-type: none"> • S Garcia-Gomez, A Reyes, MI Martinez-Jimenez, ES Chocron, S Mouron, G Terrados, E Salido, H Mnedez, IJ Holt, <u>L Blanco</u>. PrimPol, an archaic primase/polymerase operating in human cells. Mol Cell 2013;52(4):541-53. 	
Exchanges activities that have produced outcomes related to knowledge and technology transfer		
PERSONNEL FROM ULL (abroad main partner underlined) PARTNER CENTRE	DESCRIPTION OF AIMS	KNOWLEDGE & TECHNOLOGY TRANSFER ACTIONS (done and/or on-going)
<p>Rafael Alonso¹ Serafin Corral¹ <u>Michael Johnson</u> <u>Dave Pardoe</u></p>	<p>Short visit to get a complete and direct knowledge of the organization of MRCT and its different departments in relation to the whole process of technology transfer in the field of biomedicine and the life sciences.</p>	<p>Designing of the working program for the process of capacity building in CIBICAN.</p>
<p>Sebastian Jimenez² <u>Michael Johnson</u> <u>Dave Pardoe</u> <u>Meera Swami</u></p>	<p>Learning the in-house processes for technology transfer, licensing and commercialization, as well getting deep insights in the concept of innovation culture. This involved: (i) Analysis and</p>	<p>Design and application of learned process of analysis for research projects developed at CIBICAN.</p> <p>Elaboration of digital and printed</p>

<p><u>Steve Suchting</u> <u>Madusdhan</u></p> <p>Ranmaly Nawaratne³</p> <p>Andy Merrit³</p> <p>Romen Carrillo² Miguel Fernandes²</p> <p>Medical Research Council Technology, London</p> <p>¹S.C. and R.A. are ULL staff. ²S.J., R.C. and M.F. were hired by IMBRAIN funds. ³R.N. and A.M. are MRCT staff</p>	<p>use of due diligence tools; (ii) Development of gap funds; (iii) Business development of biomedical research projects; (iv) Searching for public and private partnerships.</p> <p>Presentation of the process and services offered by MRCT to the development of research projects at CIBICAN. In addition, R.N. performed an analysis of a selection of projects and interviewed the available researchers on the potential of the on-going researcher.</p> <p>Short visit to CIBICAN to meet selected research teams from the Program of Medicinal Chemistry, and to explain the most efficient procedures for the creation of a chemical library.</p> <p>A short visit to learn main general methodologies and processes used at MRCT to the development of small molecules and antibodies against molecular targets.</p>	<p>materials to be used as innovation guides for researchers.</p> <p>Report delivered to MRCT.</p> <p>Report delivered to MRCT and starting of first steps in the creation of a chemical library at CIBICAN.</p> <p>Report delivered to CIBICAN on processes on three main dimensions: (i) Target validation, action mechanisms and side-effects; (ii) Analysis of competition (freedom to operate, clinical trials, specific pathways and family structures); (iii) Commercial analysis (market opportunity and market value).</p>
<p>Jose M. Padron¹ Sebastian Jimenez² Randolph Revoredo³ <u>Christian Stein</u> <u>Ascenion's staff</u></p> <p>Christian Stein⁴</p> <p>¹J.M.P. ULL staff. ²S.J. was hired by IMBRAIN funds. ³R.R. Local member of AB. ⁴C.S. is Ascenion staff.</p>	<p>Through different visits, the staff from CIBICAN learned the general aspects of the following main topics: (i) Development projects; (ii) Processes and procedures of technology assessment and market research; (iii) Patenting process and licensing contracts; (iv) Basis and management of a KKTO; (v) Creation of spin-offs and rising of venture capital.</p> <p>Short visit to have several meetings and interviews with researchers that lead promising projects, in order to identify those technologies with the highest potential for promotion. In addition, meetings with members of the IMBRAIN management team to analyse and discuss the actual structure of the KKTO at CIBICAN.</p>	<p>Reports delivered to CIBICAN on the most appropriate structure and organization of our KTT capacity and the relationship with the market and the promotional activities.</p> <p>Delivering of a report on the design and development of a KTTTO adapted to our potential and needs.</p>
<p>In addition to the above mentioned actions and outcomes, the training and advisory process exerted the</p>		

main input for the TT actions that are described in the delivered reports, which may be summarized as follows:

- Preparation of an application for the GlaxoSmithKline's 2015 Discovery Fast Track Challenge. This proposal, targeted to investigate a rare disease named Primary Hyperoxaluria Type I, was presented by **Eduardo Salido**¹ and **Miguel Fernandes**² and selected for being developed.
- Preparation of business plan and project for the creation of a spin-off on the same subject (inventors: **Eduardo Salido** and **Miguel Fernandes**), through an initiative of SODECAN (Government of the Canary Islands). This action is currently on-going with the advise of several members of the IMBRAIN Business Advisory Board.
- Preparation of a business plan and project for the creation of a new spin-off based on the invention made by **Esteban Porrini**² to monitor renal function in special situations. This action is currently on-going under the advise of Christian Stein (Ascension).
- Preparation and presentation of a patent application (P-201431900 – Method to determine the complex amplitude of electromagnetic field associated with a scene). This patent (inventor: **Jose M. Rodriguez**¹) has been licensed to Woptix. As an additional outcome of this action, a technology-based company has been recently created by the ULL for the exploitation of results generated with the patents related to 3D cameras.
- Preparation and advise to the researchers of their presentations of new technologies selected for BIOVARIA 2015 (1 oral presentation and 4 posters), for BIOVARIA 2016 (3 oral presentations and 2 posters), and for IMBRAIN Innovation Summit.

¹E.S. and J.M.R. are ULL staff.

²M.F. and E.P. were hired by IMBRAIN funds.

Other exchange activities that have not produced publications and are now on-going as emergent collaborations

Through several long stages of **Jose L. Herrera**¹ and short visits of **Araceli Morales**¹ and **Rafael Alonso**² to IRB³ (hosted by **Joan Guinovart** and **Jordi Duran**), and of Jordi Duran to CIBICAN, experiments were carried out on the pathophysiology of POMPE disease and the search for new therapeutical approaches. The experiments were carried out at CIBICAN and at IRB during 2014-2015, and have resulted in a PhD Thesis that was defended last March: *Study of muscle pathophysiology in Pompe disease: Identification of potential therapeutic targets*. We are now preparing a manuscript for publication of the main results.

¹J.L.H. and A.M. were hired by IMBRAIN funds.

²R.A. is ULL staff.

³IRB: Institute for Biomedical Research, Barcelona.

Through the collaboration between the UL and the School of Life Sciences at University Medical Center Hamburg Eppendorf, an exchange program was organized by **Angel Acebes**¹ and **Rafael Alonso**² at CIBICAN and **Olaf J.C. Hellwinkel** at the School of Life Sciences. As a result, 19 students were hosted at ULL for 4 months (2014-2015) to be trained in laboratory skills and experimental approaches in biomedical research.

¹A.A. was hired by IMBRAIN funds.

²R.A. is ULL staff.

Jose L. Herrera¹ spent 1 week at the Centre of Genomic Regulation (CRG, Barcelona), hosted by **Eva Borrás**, to get specialized training in animals housing and genotyping.

¹J.L.H. was hired by IMBRAIN funds.

Leticia G. Leon¹ spent a total of 5 months at the Institute of Biomedicine and Biotechnology (IBB, Santander), hosted by **Ignacio Varela**, to set up a pipeline for Copy Number Variation analysis and Structural Analysis using whole genome and whole exome data. This exchange has served to set up –in collaboration with **Eduardo Salido**² at CIBICAN and the University Hospital of the Canary Islands– a platform for Liquid Bipsies using free tumor DNA (or circulating tumor DNA) and NGS (targeted sequencing) to help in the diagnosis of certain types of cancer.

¹L.G.L. was hired by IMBRAIN funds.

²E.S. is ULL staff.

Laura Sayas¹ developed an exchange with the Adams Brain Supercentre, at Tel Aviv University (Jerusalem), hosted by **Ilona Gozes**, which has resulted in the preparation of two manuscripts and the participation in two EU consortia that have applied for one CST action and one IMI action.

¹L.S. was hired by IMBRAIN funds.

German Cuesto¹ and **Esteban Porrini¹** have started a collaboration with the Department of Medical & Surgical Sciences at the University of Las Palmas de Gran Canaria (ULPG, Gran Canaria), hosted by Ana M. Wagner to carry out experiments on obese transgenic mice and the effect of different diets on the development of diabetes.

¹G.C. and ¹E.P. were hired by IMBRAIN funds.

Teresa Giraldez¹ and **Diego A. de la Rosa¹**, among a total of eight international teams, are participating in a proposal to be presented to H2020-MSCA-ITN-2015, lead by Mark Hollywood (Ion Channel Biotechnology Centre, Dundalk). This is an on-going initiative to study the biochemistry and biophysics of ion channel activation at selected domains of the plasma membrane of excitable cells.

¹T.G. and ¹D.A.R. are ULL staff.

Serafin Corral¹ developed two stages for a total of 4 months at the EU Joint Research Centre (Ispra), hosted by Angela Guimaraes to elaborate a protocol for the participation of citizens in the decision making process (see deliverables from WP6).

¹S.C. is ULL staff.

Teresa Giraldez¹, **Diego A. de la Rosa¹** and **Natalia Armas²** initiated a collaboration with Alberto Ferrus and Oscar Herrera at the Cajal's Institute (CSIC, Madrid) to exchange the use of the transgenic mouse Tg.SGK1, developed at CIBICAN, for the study of electrical in hippocampal slices and the role of SGK1 activity in the development of epilepsy.

¹T.G., ¹D.A.R. are ULL staff, and ²N.A. is a PhD student at ULL.

Angel Acebes¹ is creating a consortium with seven different EU centres, based in a collaboration with the Centre des Sciences du Gout et de l'Alimentation at the University of Burgundy (Dijon), to apply for a new call from H2020 in search for new therapies against alimentary diseases. In relation to this experimental approach, A.C. made several visits to the Laboratory of Neuroscience at the University Pablo de Olavide (Seville), for the use of mouse models in these approaches.

¹A.A. was hired by IMBRAIN funds.

Daniel J. Marcellino¹ has built a collaboration between CIBICAN and the Karolinska Institute (his former centre) and the University of Umea (his new hosting position). This has involved visits of several researchers from Stockholm (Mikel Altum and Andre Fishan) and the hosting of two PhD students from their laboratories (Sonia Olmedo and Daniela Papadia). In addition, D.J.M. has been accepted as visiting professor at the ULL to participate in the master and doctoral programs.

¹D.J.M. was hired by IMBRAIN funds.

Based on the analysis of these activities, it is clear that CIBICAN researchers have been involved in a significant number of dissemination and promotional activities for knowledge sharing, networking and better visibility at national and European levels. Furthermore, "brain gain" on innovation was also acquired through the interaction and secondments with leading European agencies on life sciences technology transfer and IPR management.

2.3.- Funding attraction

Among the different objectives included in the IMBRAIN proposal, and specifically linked to empowering research skills, IMBRAIN should promote the participation of researchers in competitive calls and collaborative proposals for European and national funding. Thus, the assessment of indicators related to funding

obtained during the period 2012-2015 is critical, not only to evaluate the role that IMBRAIN may have played in this promotion, but also thinking about the future sustainability of the achievements of the IMBRAIN implementation .

European and national funding of the University of La Laguna (ULL) during the period of five years before the Project IMBRAIN was started is carefully described:

Year	Public funding - National (# projects)	Public funding – EU (# projects)
2008	30	1
2009	31	2
2010	49	1
2011	35	0
2012	36	1
2013	33	4

IUNE

Year	R&D contracts (in thousands of euros)	Public funding of R&D (in thousands of	R&D services
2008	2375	0	-
2009*	3993	936	-
2010*	2821	15439	-
2011*	2333	3491	-
2012	336	2004	-

* Including Fundación Canaria Empresa Universidad de La Laguna

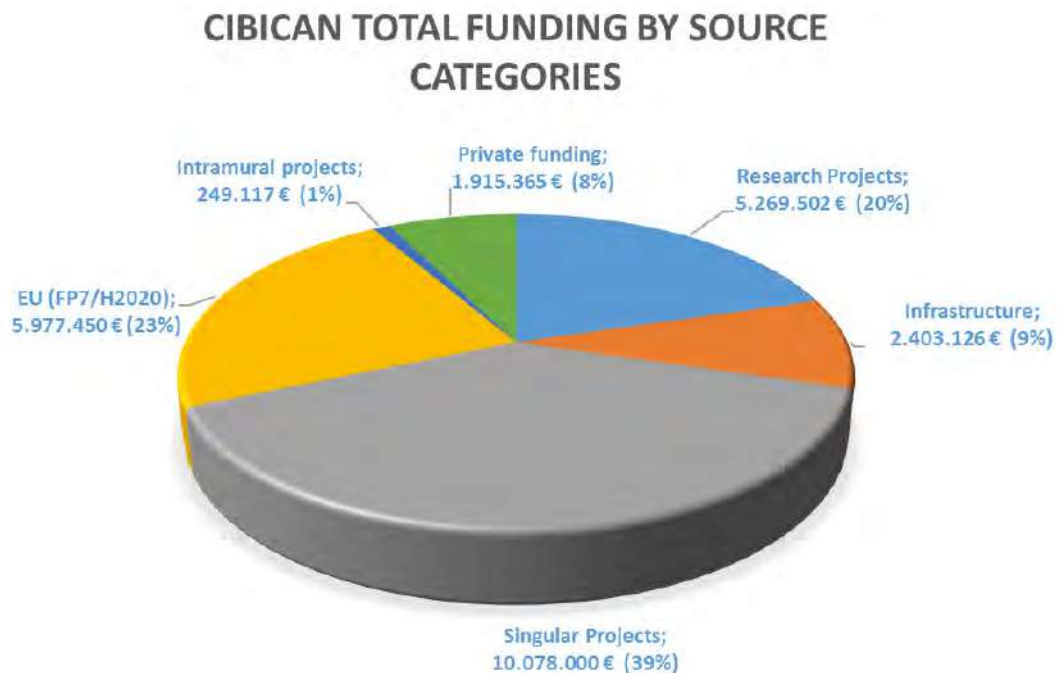
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National and international context being not positive has been reflected within the national funding which has been substantially decreased, from 7459.2 M euros/year (2008-2012) to 5629.3 M euros/year (2013-2015), representing a 24.5% of reduction (Source: General State Budgets-Ministry of the Finance and Public Administrations). However, funding attraction by CIBICAN was substantially improved during the period 2013-2015, where IMBRAIN Project was executed. The national funding obtained by the ULL was of 6.28 M euros and in the same period research groups affiliated with CIBICAN 2.21 M euros (35.1% of ULL funding), and these numbers steadily increased yearly (2013 33.1% and 2015 44.1%). The funding came from different sources during this period: National public funding (including Infrastructure and Singular Project;

68%), European (FP7/H2020) public funding (23%), intramural projects (1%) and private funding (8%). These resources were managed by three different institutions ULL-CIBICAN (77%), Canary Health Service (19%), and Bioavance Foundation (4%), reflecting the multiple institutional affiliations of the CIBICAN members.

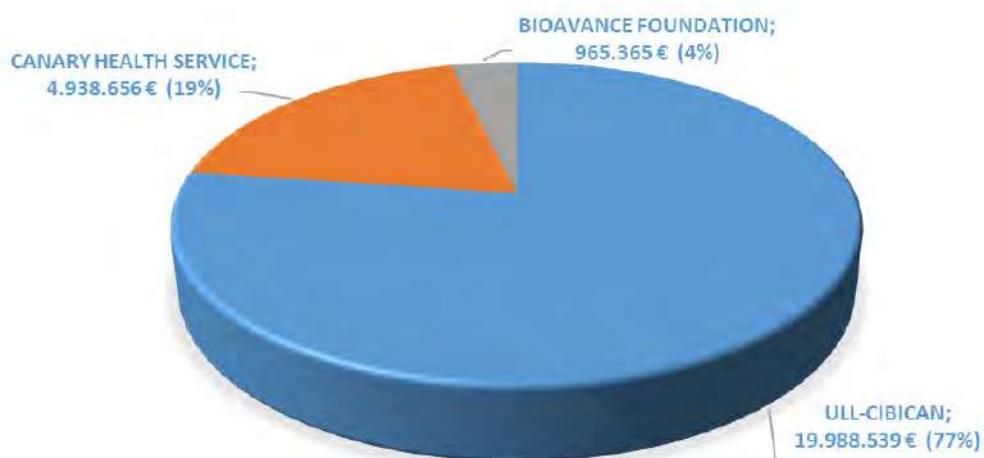
In the case of European projects, it is important to mention that two ERC Consolidators grants were funded in this period, Dr. Carolina Mallol and Dr. Teresa Giraldez (CIBICAN).

Based on all the data available, and even with a decrease in research funding, IMBRAIN has substantially contributed to increase, not only the funding attraction, but also the diversification of funding sources.



- (1) These funds correspond to those obtained by researchers belonging to ULL and/or University Hospitals participating in CIBICAN/IMBRAIN
- (2) Singular Projects: Specific funds from the ISCIII for Institutional projects to ULL and/or the Evaluation Unit of the Canary Health Service.

CIBICAN TOTAL FUNDING MANAGED BY EACH INSTITUTION



Total: 25.892.560 €

Public And Private Funding Obtained By Cibican Research Teams (2011-2015)¹

Funding Categories	ULL-CIBICAN ²	CANARY HEALTH SERVICE ³	BIOAVANCE FOUNDATION	Total
Research projects	3,442,596 €	1,826,906 €		5,269,502 €
Infrastructure	2,403,126 €			2,403,126 €
Singular projects ⁴	8,030,000 €	2,048,000 €		10,278,000 €
EU (FP7/H2020) ⁵	5,863,700 €	113,750 €		5,977,450 €
Intramural projects	249,117 €			249,117 €
Total public funding	19,988,539 €	3,988,656 €		23,977,195 €
Private funding			965,365 €	965,365 €
Total	19,988,539 €	3,988,656 €	965,365 €	24,942,851 €

¹Normalized for the period 2011-2015.

²Funds obtained by researchers from ITB and IUBO, participating in IMBRAIN.

³Funds obtained by researchers from University Hospitals (HUC and HUNSC) that in addition are either staff of ULL and/or members of one of the institutes.

⁴Specific funds for the creation of CIBICAN obtained from the ISCIII.

⁵Funds corresponding to FP7 projects, and 2 ERC Consolidators grants

Funding Categories	CIBICAN (ITB + IUBO + HOSPITALS + EVALUATION SERVICE)			
	ULL*	Health Service of the Canary Islands**	Bioavance Foundation***	TOTAL
Research projects ¹	9,306,296 €	3,988,656 €		13,294,952 €
Building and scientific equipment ²	10,682,243 €			10,682,243 €
Private contracts ³			965,365 €	965,365 €
TOTAL	19,988,539 €	3,988,656 €	965,365 €	24,942,560 €

¹Including competitive individual research projects from the Spanish National Program for Research and Innovation, and European grants (FP7, ERC, H2020, etc.).

²Including competitive projects of scientific equipment and new building from the Spanish National Program for Research and Innovation.

³Including about 50 research contracts with pharma companies and private foundations.

*Projects managed by the University of La Laguna.

**Projects managed by the administrative office of the Health Service of the Canary Islands, even though they include grants obtained by ULL staff that is also medical personnel of the University Hospitals.

***Contracts managed by the Bioavance Foundation, a public foundation created by the Cabildo de Tenerife, which is chaired by the Cabildo's president and with a majority of patrons from the ULL, including the ULL's chancellor as vicepresident.

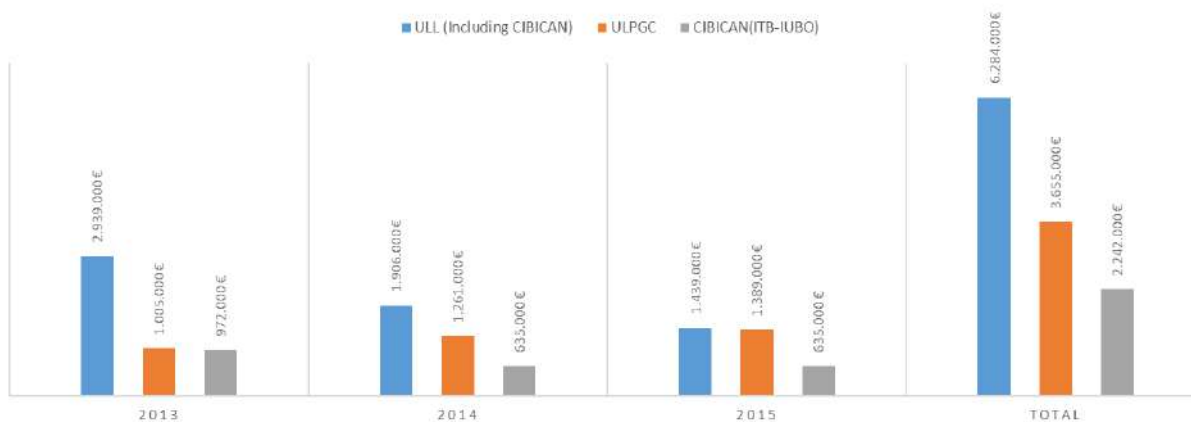
Comparison of Funding obtained during the last annual Calls from the Spanish Program for Research and Innovation						
CALLS	CATEGORIES*	ULL**	ULPG	CIBICAN (ITB-IUBO)***	%ULL	%CI
2013	Excelencia	1,199,000 €	165,000 €	332,000 €	27.7	24.3
	Retos	1,650,000 €	840,000 €	550,000 €	33.3	22.0
	Explora	90,000 €		90,000 €	100.0	100.0
	TOTAL	2,939,000 €	1,005,000 €	972,000 €	33.1	24.6
2014	Excelencia	568,000 €	321,000 €	258,000 €	45.4	29.0
	Retos	1,263,000 €	940,000 €	341,000 €	27.0	15.5
	Explora	75,000 €			0.0	0.0
	TOTAL	1,906,000 €	1,261,000 €	635,000 €	31.4	20.0
2015	Excelencia	174,000 €	431,000 €	59,000 €	33.9	9.7
	Retos	1,265,000 €	958,000 €	576,000 €	45.5	25.9
	Explora				----	----
	TOTAL	1,439,000 €	1,389,000 €	635,000 €	44.1	22.4
2013-15	TOTAL	6,284,000 €	3,655,000 €	2,206,000 €	35.1	22.1

*Excelencia, Retos and Explora are the main categories of the Spanish Program for Research and Innovation.

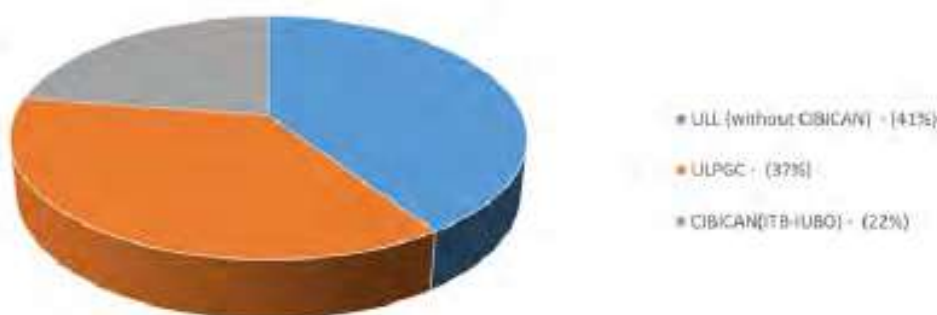
**These amounts include that of CIBICAN.

***These amounts correspond to the research teams ascribed to the Institutes of Bio-Organics (IUBO) and Biomedical Technologies (ITB), all of which have participated in IMBRAIN

TOTAL PUBLIC FUNDING DURING 2013 - 2015 CALLS FROM THE NATIONAL PROGRAM FOR RESEARCH AND INNOVATION



TOTAL PUBLIC FUNDING DISTRIBUTION DURING 2013-2015 CALLS FROM THE NATIONAL PROGRAM FOR RESEARCH AND INNOVATION IN CANARY ISLANDS



2.4.- Innovation and Intellectual Property management

For the purpose of establishing the initial situation from which the project starts, several essential indicators of ULL’s OTRI activities were analysed. In this regard, the RedOTRI Annual Survey on Knowledge and Technology Transfer is the main source of transference function information in Spain. RedOTRI Universities was constituted in 1997 within the Conference of the Spanish University Rectors (CRUE), adopting the status of a permanent work group in its R&D Sectorial Committee since 1999. RedOTRI is comprised of the OTRIs from universities belonging to the CRUE, private or public and regardless of their nature. Based on the information included in the different annual Reports on Research and Knowledge Transfer – RedOTRI Universidades and IUNE, during the five years before IMBRAIN project began, the

average number of patents issued by ULL per year was seven national and two Euro_PCT applications. Along this period, any patent was licenced, or a spin-off was created although the Office of Technology Transfer (OTRI) staff was substantially increased, going from 3 staff members/year during the first four years of the period analysed to have six persons for this Office in 2012. IMBRAIN Action Plan had included a set of different measures with the aim to strengthen its S&T research and innovation potential. Among them, there was the elaboration of a strategic Intellectual Property development plan. This was strategic for reinforcing industry-science links, becoming a key element in both innovation management and innovation policy. In this regard, the creation of a specialized Knowledge and Technology Transfer Office (KTTO) that support those links have deserved careful attention in the plan.

Year	National Patents	Euro_PCT	Licences	Spin-offs & Start-ups Creation	Personnel
2008	8	2	-	-	7
2009	7	3	-	-	-
2010	8	5	-	-	3
2011	7	2	-	-	3
2012	5	1	-	-	6

(Source RedOTRI)

The KTTO was implemented with the purpose of providing to biomedical researchers the access to specialized professionals in the healthcare sector, facilitating the possible exploitation of biomedical innovations. Improve the Human Capacity in this area is always an important challenge, and IMBRAIN has contributed to that. The creation of this office has allowed, not only the development of a plan for the management of Intellectual Property and innovation capacity building, but also build the necessary expertise, external collaborations and internal capacity for effective technology transfer and Intellectual Property Rights (IPR) management to support the biomedical research at CIBICAN and the ULL.

IMBRAIN initiative performed an initial assessment of the capacity of CIBICAN and the ULL for IPR management and innovation based on an evaluation of the policy environment for IPR and Innovation, structural support mechanisms for IPR and Innovation and, not less important, Human Resources dedicated to IPR and Innovation. The Innovation & IPR Strategic Plan Committee and the External Advisory Panel, a panel of experts in innovation, technology transfer and IPR management greatly supported this capacity assessment. As a result of this analysis an Innovation and Strategic IPR Management plan was developed.

This plan was supervised and supported by two European leading centres of excellence in innovation and IPR management (MRC Technologies and Ascenion; <http://www.mrctechnology.org> and <http://www.ascenion.de>). These collaborations have provided a great support to the most promising research projects emerging from CIBICAN during the project. Importantly, the process was coordinated between IMBRAIN KTTO and ULL's OTRI. As a result of this process, two patents were issued *A method to determine the complex amplitude of the electromagnetic field associated to a scene* (Author: Jose M. Rodriguez-Ramos) and *A method to determine the geographical ancestry of a particular individual* (Author: Carlos Flores). Additionally, one previously issued patent was licensed to a Spanish company to exploit a mobile and tablet application of the technology. The application is especially suitable for 3D microscopy imaging where the samples are embedded into a flow with variation of the refraction index, and several other applications in life sciences, microsurgery, laparoscopy or ophthalmology are being explored. Finally, a Spin-off company (Wooptix <http://www.wooptix.com>; <https://youtu.be/zikTgub2fJQ>) was created, being the first spin-off generated by ULL.



Visualisation of neurons using Natural3D (Wooptix)

One crucial aspect in the entire process is the establishment of a Culture of Innovation. The education of researchers and awareness of the importance of Innovation and IPR, was supported with the publication of a handbook on Innovation and IPR guidelines, communication of the opportunities and support available, as well as with roundtable discussions and a first Innovation Summit focused on Innovation, translation, Summit that has been held in Tenerife. All these measures were implemented with the purpose of fostering the long-term innovation and IPR management capacity.

Several European academic organizations recommend that university leadership should provide the KTTOs with the necessary level of governance and financial autonomy, as well as strategic flexibility, within the university structures. Therefore, it is important that the KTTO function can operate in an external environment that fully supports industry-science links, including a proper legal framework for public academic institutions to engage in technology transfer activities and clear, transparent rules as to the ownership of intellectual property rights. The KTTO has established an appropriate protocol that facilitates the stimulation and monitoring the TT activities. In this regard, the KTTO should act through the implementation of a transversal structure, where the researchers are fundamental in translating their scientific findings, provided KTTO staff has a thorough in-depth knowledge of the academic environment and is in contact with the broader TTO community. One interesting tool for innovating the technology/knowledge transfer process are “open labs”, as common shared spaces for

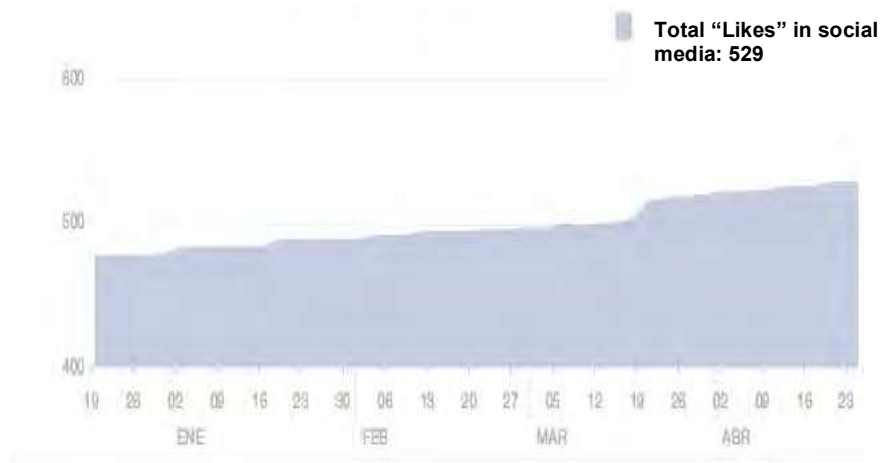
R&D between academy and industry, involving co-development of intellectual property, this should help to pave the way for future success. Many of these recommendations were already implemented during IMBRAIN project resulting in a clear improvement of many KTT indicators, namely patent licensing and spin-off creation.

The main conclusions of this analysis are the following:

1. The creation of the KTTO has contributed not only to improve the Technology Transfer results but has also helped to train specialized personnel and build a culture of innovation among biomedical researchers.
2. During IMBRAIN one patent license was granted and a spin-off was created for the first time in the ULL.

2.5.- Dissemination, promotion and societal interactions

IMBRAIN has actively designed and implemented strategies of social engagement and science communication. In fact, the proposal included a protocol for social engagement and communication to approach societal needs. In this way, IMBRAIN has implemented several participatory tools depending the objectives, context and always according to the type of target population. Among the different activities we must highlight, the Radio Nacional de España radio programme “Doble hélice” (<http://www.rtve.es/alacarta/audios/doble-helice/>), an initiative leaded by CIBICAN and RNE Canarias and directed and presented by Juanjo Martin, provided a complete information about medical news to listeners, discussing not only research findings but also history, cooperation and innovation in Medicine. The listeners have the opportunity to understand what there is behind a drug or a specific therapy. Lately, social media such as Facebook pages have added interactive community value to radio station operations on some level. Although the issue of whether social media, and namely Facebook, is increasing ratings in any appreciable way is still a topic future studies might investigate, as is the relationship between listener numbers and station ‘Likes’. In this case, the number of Facebook followers is 529 (Fig. X), and this number has steadily increased over the last years. Moreover, the number of social media messages had a higher impact, more than 15000 listeners have read and have made comments posts.



Additionally, IMBRAIN has fostered an important number of Scientific Events mainly addressed to researchers:

Scientific Events		
2013		
Doing Biology with Light		
Workshop on the last advances and breakthroughs using cell and molecular imaging techniques.		
Duration: 3 days	Guest speakers: 18	Attendees: 72
Communicating Science		
Presentation of new hired researchers strategies for communication: outreach and dissemination activities.		
Duration: 1 day	Guest speakers: 2	Attendees: 10
Business Development on the Life Sciences		
Introduction to the process of business development relevant to life sciences and biotechnology companies.		
Duration: 2 days	Guest speakers: 2	Attendees: 10
Funding lines in H2020 programm		
Presentation of road map of opportunities in H2020, programs and keys.		
Duration: 2 days	Guest speakers: 2	Attendees: 70
2014		
Opportunities and best practices for H2020 programs		
Two seminars on the overall structure of H2020 and on good practices in writing and managing.		
Duration: 1 day	Guest speakers: 1	Attendees: 15
Workshop on Molecular Pharmacology and Mechanisms of New Anticancer Drugs		

Content: International meeting on rational drug design and the medicinal chemistry of synthetic and natural compounds.		
Duration: 2 days	Guest speakers: 21	Attendees: 90
International Conference on Stem Cells and Immunity		
Recent advances in the generation of stem cells from various organisms and their implication from embryology to development.		
Duration: 4 days	Guest speakers: 24	Attendees: 80
Diabetes and Obesity in Renal Disease		
Discussion on common aspects of renal disease in diabetes and obesity.		
Duration: 5 days	Guest speakers: 21	Attendees: 100
2015		
Mineralcorticoid Receptor Cell Biology and Pharmacology		
Practical course and COST action on MR pharmacology and cell biology.		
Duration: 5 days	Guest speakers: 4	Attendees: 21
Health Economic Evaluation		
Introductory training course in the techniques of economic evaluation in health to support decision-making and new health technologies.		
Duration: 3 days	Guest speakers: 6	Attendees: 25
Analysis of Big Data in Biomedical Sciences: Possibilities and challenges		
Broad review on the ways and tools to exploit and integrate many large data sets available in biomedical sciences.		
Duration: 2 days	Guest speakers: 3	Attendees: 30
Conference on IMBRAIN Results		
Presentation of main scientific results from recruited IMBRAIN researches.		
Duration: 1 day	Speakers: 14	Attendees: 40
Research in Rare Research		
Workshop on the latest developments in scientific and legal aspects of rare diseases.		
Duration: 2 days	Guest speakers: 10	Attendees: 60
Science in Communication Media		
Workshop on key aspects of communicating scientific results in public media.		
Duration: 2 days	Guest speakers: 6	Attendees: 30
Technology Transfer in Biomedicine: Entrepreneurship for Dummies (2015)		
Workshop on biomedical innovation directed to researchers and potential entrepreneurs.		
Duration: 1 day	Guest speakers: 5	Attendees: 50

Innovation Summit			
Bringing together representatives of venture capital investors in biomedicine and biotechnology, technology transfer experts from Europe and USA, and CIBICAN researchers.			
Duration: 3 days	Guest speakers: 21	Attendees: 80	
TOTAL			
Events: 16	Duration: 39 days	Speakers: 160	Attendees: 783

Among activities focus on the general public, addressing and attracting people regardless of the level their scientific background, and also other professionals than scientists, IMBRAIN has also organized workshops and Science festivals:

Festivals and Dissemination Events			
2013			
- Practical workshop on science dissemination through scenic arts. - Audiovisual entertainment <i>Proton</i> – A talk show about matter evolution from the Big Bang to the Human Brain. - Orotava Science Festival			
2014			
- Orotava Science Festival - Fridays of Science: Discovering the Universe Cell			
2015			
- Orotava Science Festival			
Total			
Events: 6	Duration: 10 days	Speakers: 10	Attendees: 753

And finally, the presence of the project in mass media and social media channels can be summarized in 121 radio programs, as was detailed above, 13 press reports, 8 press releases and 21 presentations. Furthermore, IMBRAIN was releasing updated information through the **web page** <http://www.cibican.org> and the **Digital bulletin What's new** (3 issues), **CIBICAN in drops** (<http://cibican.blogspot.com.es>) and **Facebook** and **Twitter** (@CIBICANarias).

IMBRAIN during the initial process of preparation of the proposal have analysed, together with local and regional stakeholders, with purpose of understanding the possible health-related topics demanded in the Canary Islands.

2.6.- SWOT: Current analysis

The different activities carried out in the context of the IMBRAIN project have had a significant impact on the strengths, weaknesses, threats and opportunities of CIBICAN:

STRENGTHS
Increased number of Principal Investigators with high research potential (IMPROVEMENT!)
Recovered ability to successfully apply for core infrastructures (IMPROVEMENT!)
Stronger alliance with the Insular Council of Tenerife (IMPROVEMENT!)
NEW : Newly acquired state-of-the-art equipment and trained personnel

WEAKNESSES
Elaboration of a strategic plan in the process of being implemented (IMPROVEMENT!)
Relative improvement in the culture of innovation and exploitation of research results (IMPROVEMENT!)
Recognition that the lack of structures for IP management provides an opportunity for building proper structures and capacities (IMPROVEMENT!)
Building of high-level expertise in technology transfer (IMPROVEMENT!)
Significant improvement in the size of the research groups and age of the research staff (IMPROVEMENT!)
NEW : Internal resistance to changes

OPPORTUNITIES
Geographical location is an advantage for tackling specific rare diseases associated with the Canary Islands (IMPROVEMENT!)
NEW : Recognition that starting from scratch in innovation and technology transfer could avoid mistakes made elsewhere
NEW : Better alignment with European structural funds allocated to Canary Islands

THREATS
Significant increase in human resources, although not yet sustainable (IMPROVEMENT!)
Better opportunities to align with European structural funds managed by the regional government (IMPROVEMENT!)
Confirmation of the lack of a network of biotech/pharma industry
NEW : Uncertainty about the possibility to support high-quality infrastructures and personnel

Clearly, the IMBRAIN project has facilitated the strengthening of the position CIBICAN can play in the context of research carried out at the regional, national and international level, and it is well positioned to promote a culture of innovation and exploitation of results that could translate in new and alternative funding opportunities.

III.- SUSTAINABILITY

3.1.- Governance models

The Canary Islands' Centre for Biomedical Research (CIBICAN) was designed through collaboration between the University of La Laguna (ULL), the *Cabildo de Tenerife* (Local Tenerife Council) and the Canary Islands Government, to strengthen the international presence of the ULL's research groups active in the fields of Biomedicine and Health Sciences. The CIBICAN integrates research groups associated with the University's Biomedical Institutes and the Clinical Research Units at two University Hospitals, incorporating general services, scientific equipment and a knowledge base that will help accelerate biomedical research and the transfer of results to the healthcare sector. The CIBICAN began its existence fifteen years ago when the *Instituto Universitario de Tecnologías Biomédicas* (ITB), as a common initiative between University of La Laguna and the Cabildo de Tenerife (as a Foundation), and this becomes a reality in 2006 when the Canary Government created the ITB. Since its creation, one important accomplishment was the foundation of the future building, project funded by the Cabildo and the Instituto de Salud Carlos III and currently under construction in two phases.

The Research Centre is a great opportunity for talent attraction and retention, senior positions that bring together the excellence already present in the ULL and junior positions that can establish new research lines. In fact, RIS3, as a new and improved form of innovation policy, includes Research Infrastructures as an important tool that can help to concentrate regional human capital, attracting international researchers and technicians, turning science and innovation into a key instrument of regional development. Moreover, Universities can and do contribute to regional development through enhancing regional innovation through their research activities, promoting enterprise, business development and growth, contributing to the development of regional human capital and skills and improving social equality through regeneration and cultural development.

One possible model of organization, management, direction and evaluation for CIBICAN, will be one similar to the one implemented in most modern and advanced research centres in the world.

Different bodies can play a role in governance:

Governing Committee: It will be the maximum decision-making body, composed of institutional representation and participation of the social, economic and businesses associated with CIBICAN.

Scientific Director: the Scientific Director is who will lead the scientific strategy and direction with a particular focus on research, innovation, and professional leadership. The Director should be elected through a competitive international call. A written procedure for replacing the Director after a certain period of time should be established, specifying the length of time a Director will serve before the appointment is reviewed.

Program Manager: the Scientific Director may appoint a manager for the program with the responsibility to coordinate their respective research units.

Management Body: Technical Manager with competence in financial, administrative and technical management of the investigation.

External Scientific Committee: it will be the advisory body, formed by researchers of maximum prestige and experience in direction. This Committee will have the mission of advising the CIBICAN Scientific Director about the development of the Centre, reviewing regularly its activity. This Committee will help to define the Centre in the researcher selection process and in the continual evaluation of research activity.

Scientific Council: consists of the Scientific Director, the Program Manager and a representative of each CIBICAN Scientific Program. Its main mission is to advise the CIBICAN Scientific Director about programs, in terms of science, technology and knowledge transfer.

Business and Innovation Advisory Board: its role will be to advise researchers management body on specialized aspects of technology transfer and management of intellectual property, and to develop an international networking with the biotechnology and pharmaceutical industry.

In summary, the scientific activity based on a rigorous strategic planning and financing mechanisms, supported by a well-defined model of Governance, that are focused on achieving specific targets, together with an executive scientific leadership, and efficiency, that guides and support the capacity of the research groups to achieve the common objectives of the Centre will foster and promote an interdisciplinary research in strategic areas with a clear leaning towards the transfer of knowledge and generating returns for society.

3.2.- Funding recommendations

The different stakeholders involved in IMBRAIN must implement some essential instruments, aimed at fostering the long-term financial sustainability of the project.

Accountability and Autonomy

Faculty members have high standards around teaching, research and publishing, which are reinforced through peer review, grading and win rates on grants, they tend not to apply those standards and rigor to the administration. Although, it is common among them to indicate the faults, they do not recognize their own shortcomings. In this way, it is critical to articulate responsibilities, including decision rights, for each Research Centre. Thus once that is defined, different agreements can be negotiated between the ULL and the CIBICAN. These agreements should clearly specify what level of performance is expected. The CIBICAN performance will be evaluated by developing metrics for evaluation that everyone can understand and apply consistently (see Research evaluation section). It is clear that exists a clear relationship between autonomy and accountability with financial sustainability. In this regards, the independent funding scheme for excellent Research Centres is expected to enhance the University's reputation as a leading Academic Institution, develop its unique strong points, and improve its attractiveness as an employer for excellent researchers both from Spain and from abroad, and expand its strategic alliances with key partners. Funding for this is derived from resources released from indirect costs of the obtained from different funding sources. The ULL should apply a policy whereby a percentage of indirect costs of each externally funded project will be directed to CIBICAN.

Contract Programme

The main objective of this type of tool is help to consolidate the CIBICAN by financing its structural costs, with the mandatory condition for being able to access these funds of ensuring specific indicators and results. One possible source of these funds can be European Structural Funds, in fact based on the last Report of the Canary Islands Social Economic Council (2014-2015), the percentage of budget execution (FEDER) – Priority 1: Development of the Knowledge Economy during this period was

46.2%. This funding instrument will be introduced with the aim to promote the strategies of cooperation among research groups that will allow the increase in the quality of results in R+D+i, as well as the capacity to assume new challenges. CIBICAN, as a Research Centre, provides this organisational structure and favours an integrative and transdisciplinary research approach; therefore it is an appropriate mean for achieving this purpose. The funds will be calculated on the basis of results attained by the Centre in areas such as:

- **Strategy**
 - Defined Strategic Plan
 - Management model and budget
 - Capacities and infrastructures
 - Internationalization

- **Research outcomes**
 - Funding attraction
 - Ph.D. thesis
 - Publications
 - Number of patents
 - Number of Spin-off created
 - Scientific events organized
 - Research Dissemination and Communication

Health Research Institute

Health Research Institutes are the result of the association between a public hospital of the National Health System and a University (and other public or private research organisations). The main goal of the accreditation of Health Research Institutes are to build a bridge between basic and clinical research and moreover, to enhance the concept of the hospital as a research centre. This accreditation, as Health Research Institute, is an interesting instrument to enhance scientific and technological knowledge excellence and to build a significant critical mass of multidisciplinary scientists in institutes created by linking various state and regional institutions, both public and private, within the National Health System.

As the Institute of Health Carlos III (ISCIII) claims, Health Research Institutes should be created from pre-existing research centres and groups of proven quality which, combined, meet the necessary requirements established in Royal Decree 339/2004. The goal is to enhance the prestige of the centres comprising the institute through institutional recognition that makes it easier to increase human resources, infrastructures and new technologies in order to expand and strengthen the quality and quantity of research equipment and lines.

CIBICAN brings together researchers from academic and health care institutions, complying with the requirements for applying to an accreditation as a Health Research Institute by the ISCIII. This instrument will allow CIBICAN to apply to specific calls for Human Resources, Grants and Research Infrastructures.

3.3.- Research evaluation

The CIBICAN should submit an annual report to the Governing Committee at the end of each academic year. The annual report should summarize the activities of the Centre for the past year. As well as, any update or modification of its strategic plan should also be included in this annual report. The Centre will conduct a self-study and undergo a thorough review and evaluation of its activities and accomplishments. The External Scientific Committee is responsible for undertaking formal reviews of the CIBICAN every five years, with an interim review in between.

Full review

Full reviews should be held every five years, and these reviews will be aimed to establish whether the CIBICAN has the scientific and financial means to merit continued existence. The report is discussed at a meeting of the External Scientific Committee, with the Governing Committee highlighting any issues discussed previously with the Director. The Director is invited to attend the meeting to make a short presentation on the future directions of the Centre and to discuss any issues raised by the Committee. The review report should provide an assessment of the Centre's current and future scientific agendas and plans, the Centre's past performance and contribution to the community and beyond the Centre's current and future financial position.

The External Scientific Committee will reach its decision on the basis of an evaluation of different indicators:

- Centre's publication record and other academic achievements.
- Achievements and progress made against the objectives outlined when the Centre was established.
- Approval of objectives for the forthcoming five-year period, and beyond if appropriate.
- Evidence of the financial sustainability of the Centre.

Interim review

Interim reviews will be held close to the mid-point between full reviews. This review should provide an assessment of whether the Centre's plans are on track and highlight any issues, which need to be addressed. If any cause for concern is identified, the Director will be invited to meet with the External Scientific Committee to discuss issues raised in the report. The report will be discussed at a meeting of the External Scientific Committee, highlighting any issues discussed with the Director in advance.

REFERENCES

Red OTRI

<http://www.redotriuniversidades.net>

IUNE

http://www.iune.es/es_ES

IMBRAIN

<http://www.cibican.org/index.php?lang=us#>

Koenraad Debackere, The TTO, A University Engine Transforming Science Into Innovation. League Of European Research Universities, 2012

Informe Anual del Consejo Económico y Social de Canarias (2014-2015)
http://www.cescanarias.org/ces_ia_14-15/archivos/libro_ia14-15.pdf

Estrategia de Especialización Inteligente de Canarias 2014-2020

http://www3.gobiernodecanarias.org/aciisi/ris3/images/documents/ris3_canarias_v2.0.pdf

IV.- SUMMARY

IMBRAIN was the perfect instrument which allowed the development of both the ULL and its Centre for Biomedical Research Canarias (CIBICAN) in terms of innovation, jobs, growth and social progress.

The nomination of an Advisory Board consisting of internationally recognized experts specialized in Innovation was a key factor which contributed to the innovation objective by identifying and addressing exploitation issues and by forming a team to the use of the generated knowledge such as the protection of Intellectual Property and by launching a successful Knowledge of Technology Transfer Office (KTTO). This KTTO fulfilled the criterion of excellence.

The Work Programme was fulfilled according to the proposal made and the seven Work Packages indeed contributed to the expected impact. WPs tackled the challenge of ‘brain gain’ through networking and fruitful scientific exchanges with several European world class researchers, the acquisition of modern scientific equipment allowing through collection of new data to reach international competitive level, increase its scientific impact and reputation, the recruitment of experienced researchers, and the institutional mobilization.

The current SWOT analysis and its comparison with the pre-IMBRAIN SWOT analysis raised that the IMBRAIN project has facilitated the strengthening of the position CIBICAN can play in the context of research carried out at the regional, national and international level, and it is well positioned to promote a culture of innovation and exploitation of results that could translate in new and alternative funding opportunities.

In conclusion, the contribution to the regional sustainable socio-economic development is now reachable within a short time. This should be attainable thanks to the very good understanding and cooperation of Regional and Local authorities, funding agencies, representatives of the national research bodies, which all acknowledge the excellence of the project and are participating to ensure synergies with local, regional or national policies (see Minutes of the May 17 afternoon meeting, Annexes).

V.- ANNEXES

5.1.- Agenda of morning and afternoon sessions

5.2.- Minutes of the morning session

5.3.- Minutes of the afternoon session



IMBRAIN PROJECT – EX-POST EVALUATION

Presentation of Evaluation Report to the Steering Committee
University of La Laguna, 16th-19th May 2016

AGENDA

I. Preliminary technical session

Monday 16

Avenue: Hotel Mencey

Participants: Roland Pochet, José A. Costoya and Antonio Pineda (Evaluation Committee); Luis Blanco, Frank Heemskerk, Michael Johnson, David Pardoe and Christian J. Suojanen (Steering Committee & Advisory Board); Rafael Alonso (IMBRAIN coordinator).

20:00 – 23:00 *Meeting together and working dinner*

Tuesday 17

Avenue: Hotel Mencey (Room GUEZALA).

Language: English

08:15 – 09:15 Preparatory session and introduction to report: **Carlos Alonso, Antonio García, Roland Pochet, José A. Costoya, Antonio Pineda, Rafael Alonso**

Working session: Discussion on IMBRAIN aims and achievements

Participants: Roland Pochet, José A. Costoya and Antonio Pineda (Evaluation Committee); Luis Blanco, Frank Heemskerk, Michael Johnson, David Pardoe and Christian J. Suojanen (Steering Committee & Advisory Board); Francisco Almeida (Vice-chancellor of Research), Carmen Rubio (Vice-chancellor of Internationalization), Daniel Alonso (ULL Strategic Office); Rafael Alonso (IMBRAIN coordinator), Diego Álvarez de la Rosa (Team leader, Institute of Biomedical Technologies), José M. Padrón (Team leader, Institute of Bio-Organics), Randolph Revoredo (Bioavance Foundation).

09:15 – 09:30 President of Cabildo and IMBRAIN coordinator: **Carlos Alonso, Rafael Alonso**

- *Welcome, introduction and presentation of participants.*

09:30 – 10:00 Evaluation Committee: **Roland Pochet, José A. Costoya, Antonio Pineda**

- *Recapitulation of REGPOT program aims.*
- *Analysis of IMBRAIN results.*

10:00 – 11:00 IMBRAIN Advisory Board: **Luis Blanco, Frank Heemskerk, Michael Johnson, Dave Pardoe, Christian J. Suojanen**

- *Summary report (Christian J. Suojanen).*
- *Coherence between recommendations from the Advisory Board and project achievements.*
- *Discussion on future actions to support sustainability.*

11:00 – 11:30 *Coffee break*

11:30 – 12:30 All participants:

- *General discussion (to which Francisco Almeida, Carmen Rubio and Daniel Alonso will be incorporated).*

13:30 – 15:30 *Working lunch*

II. Presentation and discussion of the evaluation report to the Steering Committee

Participants: *Antonio Martín (Chairman, ULL chancellor), Francisco Almeida (vice-chancellor of Research), Carmen Rubio (vice-chancellor of Internationalization), Daniel Alonso (ULL Strategic Office), Julio Brito (General Manager, FGULL); Luis Blanco, Frank Heemskerk, Michael Johnson, David Pardoe and Christian J. Suojanen (Steering Committee Advisory Board); Rolan Pochet, José A. Costoya and Antonio Pineda (Evaluation Committee); Alfonso Beltrán (General Deputy of International Research Projects, ISCIII), Jesús Morera (Ministry of Health of the Canary Islands), Manuel Miranda (Director of the Canary Agency of Research, Innovation & Society of Information), Roberto Moreno (Director of the Canary Islands Health Service); Rafael Alonso (IMBRAIN coordinator); Representatives of researchers participating in IMBRAIN: Diego Álvarez de la Rosa, Isabel López-Bazzocchi, Serafín Corral, Ana Estévez, Javier Fernández, Tomás González, Víctor S. Martín, Manuel Norte, José M. Padrón, Pedro Serrano, Armando Torres.*

Avenue: *Graduate Room, School of Economics, University of La Laguna*

Language: *English/Spanish (simultaneous translation)*

16:00 *Driving by taxi to the University of La Laguna School of Economics*

16:45 – 17:00 **Antonio Martín** (Chairman)

- *Welcome and introduction*
- *Significance of IMBRAIN within ULL Strategic Research Plan, and institutional priorities to improve its research and innovation capacities*
- *Existing coherence between priorities of the Canary Government and the ULL on research.*

17:00 – 17:05 **Rafael Alonso** (IMBRAIN coordinator)

- *Brief summary of IMBRAIN project: aims and outcomes*

17:05 – 17:45 **Luis Blanco, Frank Heemskerk, Michael Johnson, David Pardoe, Christian J. Suojanen** (IMBRAIN Advisory Board and members of the Steering Committee)

- *Summary report, highlights of the program and main recommendations for excellence and sustainability*

17:45 – 18:05 **Roland Pochet, José A. Costoya, Antonio Pineda** (Evaluation Committee)

- *Summary of evaluation report on IMBRAIN achievements*
- *Recommendations from the Evaluation Committee*

- 18:05 – 19:00 **Alfonso Beltrán, Jesús Morera, Manuel Miranda, Roberto Moreno, Félix Fariña** (Representatives of National and Regional agencies)
- *National, Regional and Insular strategies for research and innovation in biomedicine, considering IMBRAIN evaluation report and ULL priorities*
 - *Generation of synergies and interactive use of budget from Structural EU funds*
- 19:00 **Antonio Martínón**
- *Concluding remarks and closing session.*
- 19:15 *Networking snack (all participants)*
- 20:30 *Driving by taxi to Mencey Hotel*
- 21:00 *Networking dinner (Evaluation Committee and Advisory Board)*

III. Visits to scientific infrastructures at ULL and Tenerife and meeting with researchers

***Participants:** Roland Pochet, José A. Costoya and Antonio Pineda (Evaluation Committee); Rafael Alonso, Tomás González, Manuel Norte (IMBRAIN researchers).*

- Miércoles 18** ***Avenue: Instituto de Astrofísica de Canarias***
- 10:00 – 14:00 *Visit to IAC laboratorios in La Laguna, and the Teide Observatory*
- 15:00 – 17:00 *Working lunch*
- 19:30 – 20:00 *Presentation of evaluation results at broadcasting program Double Helix*
- Jueves 19** ***Avenue: Institute of Bio-Organics Antonio González***
- 11:00 – 14:00 *Visit to IUBO and meeting with research teams*
- 15:00 – 17:00 *Working lunch*



IMBRAIN PROJECT – EX-POST EVALUATION
Presentation of Evaluation Report to the Steering Committee
University of La Laguna, 17th May 2016

MORNING SESSION

MINUTES

1. Welcome to participants

The participants were welcomed by the Head of the Evaluation Committee Roland Pochet, (Faculté de Médecine, Université Libre de Bruxelles, Belgium). Roland Pochet chaired the meeting.

2. Verification of the presence of participants

The following participants attended the meeting

IMBRAIN team - Rafael Alonso, José M. Padrón & Randolph Revoredo

Evaluation Committee - Roland Pochet, José A. Costoya & Antonio Pineda

Steering Committee & Innovation Business Advisory Board - Luis Blanco, Frank Heemskerk, Michael Johnson, David Pardoe & Christian J. Suojanen

ULL - Francisco Almeida (Vice-chancellor of Research), Carmen Rubio (Vice-chancellor of Internationalization), Julio Brito (General Manager of FGULL) & Daniel Alonso (ULL Strategic Office).

3. Adoption of the agenda

The agenda (**Annex 1**) for the First Working Session was adopted.

4. Tour de table/ introduction of the participants

The list of participants of the meeting with their contact information is presented in **Annex 2**.

5. Brief summary of IMBRAIN achievements.

Rafael Alonso gave an overall view of the tasks achieved with the implementation of IMBRAIN.

6. REGPOT program aims & analysis of IMBRAIN results.

Roland Pochet gave a brief presentation on the Evaluators Mission, stressing that they were selected by the European Commission from 70 names according to keywords of expertise. The experts have been involved as evaluators in other programs.

Next, it was shown a summary of the results achieved, being the full data collected in the final report. Briefly, 85% of recruited staff are in an unstable position (soon unemployed). The equipment acquired during the project is located in diverse centres. The recommendation is to gather the equipment in platforms that should be located in the new building. There is a need to have people to maintain it. Technology transfer has been a success. Through IMBRAIN 2 patents, 1 license and 1 spin-off (Wooptix). In addition, 2 more spin-offs are in the process of being launched soon. Funding attraction from the Spanish National Plan was 22% of the total budget 2013-2015 of the two Canary universities. Publications is not the main indicator, although there is a significant increase after IMBRAIN. The “IMBRAINERS” contribution is high compare to other REGPOT projects. Joint publications with other partners highlight this success, evidencing connectivity through collaborations with diverse centres across Spain & Europe. 2/3 of the budget was for HHRR and Equipment

Concerning the SWOT Analysis, it was highlighted as follows.

Strengths: Improvement: HHRR, Equipment

Weakness: Improvement in Intellectual Property and Innovation, size of research teams and aging of staff.

Opportunities: Should improve in other areas besides rare diseases. Discussion was established on the lack of proper communication of the project and its results.

Threats: No real improvement of industry. Uncertainty in the future of personal and equipment.

Recommendations

The recommendations of the Evaluators about the possible model of research centre for CIBICAN emphasized on a performance based funding model, providing an allocation mechanism of public funding, and how this at the end will contribute to improve the entire Institution.

The recommendations included

- Establishment of a Platform for providing external services
- Funding must come from third parties
- Organisational and Legal form of CIBICAN -> Research Asset Entity
- CIBICAN should applied to become a centre of excellence
- The consolidation and maintenance of the KTTO as a critical issue for success.

7. Presentation of the Innovation Business Advisory Board

Christian Suojanen gave a brief Presentation of the role of the Innovation Business Advisory Board. He commented the results from the innovation viewpoint. The board had been giving support and advice on the implementation of a Knowledge & Technology Transfer Office

(KTTO), including personnel formation, models on best practices, and partnering with Technology Transfer institutions across EU.

At the start of the project the board performed a SWOT. The results at the end of the project indicate a profound change in terms of innovation culture within CIBICAN researchers. The KTTO holds the best advisory board available, demonstrating engagement with industry: hyperoxaluria (E. Salido), renal function test (E. Porrini), CEAMED MDR anticancer drugs, India/Chile, 3D camera spinoff (Wooptix).

Mike Johnson remarked it is a model to export to other centres. David Pardoe added that the impact has been on both sides, CIBICAN and Technology Transfer institutions.

8. Discussion on future actions to support sustainability

Roland Pochet indicated that IMBRAIN/CIBICAN has been a success for ULL, and sustainability should be considered. He asked about the feasibility of one of the two possible models in the Spanish environment, one is the IAC related to ULL but independent, and the second is an Institute of Health, which implies seconding Hospitals. The Vice-chancellor of Research explained the policy of the University in terms of research which tries to support all areas. Concerning CIBICAN he explains there is an internal commission of 7 members (himself included) to define the structure of CIBICAN.

Christian Suojanen asked whether there is a need to have three institutes. The Vice-chancellor answer it comes from the previous government of ULL that approved CIBICAN as a union of the three institutes ITB, IUBO and IUETSPC. The members of CIBICAN will be selected by an external committee and on the basis of excellence.

Antonio Pineda raised the concern of having a health institute, which implies the involvement of Clinicians from Hospitals, which should follow the same evaluation process for their nomination. The Vice-chancellor indicated that at the moment there has not been conversations on that point.

Christian Suojanen asked about the interest of IUETSPC (the tropical disease institute) representatives in CIBICAN since they have not been participating in the events, seminars, meetings to which they have been invited but have not attended. The Vice-chancellor explained that the members of IUETSPC consider IMBRAIN and CIBICAN as independent projects. He added that the University is not forcing the 3 institutes to be together.

Christian Suojanen is concerned about time-schedule and motivation of the institutes, which are crucial for the sustainability of CIBICAN. Factor of time is crucial, but the time-frame proposed by the University is not making it happen.

Antonio Pineda asked about the overheads in case CIBICAN will become a Health Institute composed by diverse partners. Vice-chancellor indicated that the overheads will go entirely to CIBICAN.

9. Closing

Roland Pochet thanked all participants present and closed the meeting and announced that the conclusions of this session will aid to complete the evaluation report. José M. Padrón is thanked for the rapporteur activity of this report.

IMBRAIN PROJECT – EX-POST EVALUATION
Presentation of Evaluation Report to the Steering Committee
University of La Laguna, 17th May 2016

AFTERNOON SESSION

MINUTES

1. Welcome to participants and apologies

The participants were welcomed by the Rector Antonio Martín, who chaired the meeting. Apologies were received from Carmen Rubio (Vice-chancellor of Internationalization), Carlos Alonso (President of the Insular Council of Tenerife), Antonio García (CEO of the Scientific & Technological Park of Tenerife), and the researchers Javier Fernández, Diego Álvarez de la Rosa and Isabel López-Bazzocchi.

2. Adoption of the agenda and participants

The agenda (**Annex 1**) for the Second Working Session was adopted. The list of participants of the meeting with their contact information is presented in **Annex 2**.

3. Brief summary of IMBRAIN achievements

Antonio Martín gave a significance of IMBRAIN within ULL Strategic Research Plan and pointed out that IMBRAIN shows ULL the path to follow as a model to improve research and innovation capacities.

Rafael Alonso gave participants an overall view of the tasks achieved with the implementation of IMBRAIN.

4. Presentation of the IMBRAIN Advisory Board & Steering Committee

Members gave a brief Presentation of the role of the Innovation Business Advisory Board. They commented the results from the innovation viewpoint. The board had been giving support and advice on the implementation of a Knowledge & Technology Transfer Office (KTTO), including personnel formation, models on best practices, and partnering with Technology Transfer institutions across EU. They remarked it is a model to export to other centres, highlighting that the impact has been on both sides, CIBICAN and Technology Transfer institutions.

At the start of the project the board performed a SWOT. The results at the end of the project indicate a profound change in terms of innovation culture within CIBICAN researchers. The KTTO holds the best advisory board available, demonstrating engagement with industry: hyperoxaluria (E. Salido), renal function test (E. Porrini), CEAMED MDR anticancer drugs, India/Chile, 3D camera spinoff (Wooptix).

An open question was launched for discussion “*How should we proceed in the short-term?*”

5. Presentation of the Evaluators

Evaluators gave a brief presentation on the Evaluators Mission, stressing that they were selected by the European Commission from 70 names according to keywords of expertise. The experts have been involved as evaluators in other programs.

Next, it was shown a summary of the results achieved, being the full data collected in the final report. Briefly, 85% of recruited staff are in an unstable position (soon unemployed). The equipment acquired during the project is located in diverse centres. The recommendation is to gather the equipment in platforms that should be located in the new building. There is a need to have people to maintain it. Technology transfer has been a success. Through IMBRAIN 2 patents, 1 license and 1 spin-off (Wooptix). In addition, 2 more spin-offs are in the process of being launched soon. Funding attraction from the Spanish National Plan was 22% of the total budget 2013-2015 of the two Canary universities. Publications is not the main indicator, although there is a significant increase after IMBRAIN. The “IMBRAINERS” contribution is high compare to other REGPOT projects. Joint publications with other partners highlight this success, evidencing connectivity through collaborations with diverse centres across Spain & Europe. 2/3 of the budget was for HHRR and Equipment.

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Recommendations

The recommendations of the Evaluators about the possible model of research centre for CIBICAN emphasized on a performance based funding model, providing an allocation mechanism of public funding, and how this at the end will contribute to improve the entire Institution.

The recommendations included

- Establishment of a Platform for providing external services
- Funding must come from third parties
- Organisational and Legal form of CIBICAN -> Research Asset Entity

- CIBICAN should applied to become a centre of excellence
- The consolidation and maintenance of the KTTO as a critical issue for success.

6. Sustainability of CIBICAN according to Representatives of National, Regional and Insular agencies

Manuel Miranda (Director, Canary Agency of Research, Innovation & Society of Information), informed on the decrease in the investment in R&D in the recent years (0.4% of GDP of Canary Islands). Biomedical research is consistent with the RIS3 of the Canary Islands Government. In this context, the Canary Government finances IAC and PLOCAN together with the National Government. There should be long term financing of CIBICAN but urges short term financing. A commitment to derive structural funds from UE to this type of Project is demanded. The Regional Government should be convinced to this extent.

Alfonso Beltrán (General Deputy of International Research Projects, ISCIII) explained that ISCIII looks for capacities aggregation through Health Research Institutes. IMBRAIN serves as a model with international panels and ex-post evaluations. Sustainability is not only a matter of money, but reordering and optimisation of the existing resources.

Félix Fariña (ITC Counsellor, Insular Council of Tenerife) confirmed that the Insular Council of Tenerife is completely aligned with the Project providing full support to all programs directed to innovation and transfer. They will invest 2.5 M€ in 2017 in all strategic areas to reach a limit of 80 hired researchers in the subsequent years.

Roberto Moreno (Director, Canary Islands Health Service) congratulated the staff involved in the Project for its outstanding performance. Next, he reminded that the Canary Islands Health Service holds tight relationships with ULL. Sustainability problems remain the same even before the economic crisis started back in 2008. We have an awful HHRR policy. We are located in a poor region where resources are very limited. Tourism weight in GDP accounts for 60%, which makes fail industrial activity in other sectors.

Jesús Morera (Ministry of Health, Canary Islands) praised the outcome of the Project. He reinforces the commitment in health research within the Ministry of Health trying to create the basis to allow clinical scientists to reach funds in the form of a regional through Health Research Institute. CIBICAN should be part of this Health Research Institute of the Canary Islands.

7. Closing

Antonio Martinón thanked all participants present and closed the meeting. José M. Padrón is thanked for the rapporteur activity of this report.