



HEALTH RESEARCH INSTITUTE  
SANTIAGO DE COMPOSTELA

ANNUAL  
REPORT  
**2019**



## **EDITION AND PRODUCTION**

Scientific-Technical Coordination of the Health  
Research Institute of Santiago de Compostela

*Yolanda Liste Martínez.* Technical Management.

*José Ramón Castro Ruibal.* Technical Research  
Management and Promotion.





# ANNUAL REPORT 2019

HEALTH RESEARCH INSTITUTE  
SANTIAGO DE COMPOSTELA



"O IDIS prosegue a súa  
tendencia a mellorar, ano tras  
ano, en produción científica,  
recursos humanos e captación  
económica."

"IDIS remains true to its  
mission to improve its scientific  
production, its human capital  
and its fund-raising capabilities  
with every passing year."

**José Castillo Sánchez**  
**Director científico**  
**Scientific Director**

A handwritten signature in black ink, which appears to read "José Castillo", is positioned to the right of the printed name and title.



Unha vez máis correspóndeme presentarvos a actividade do Instituto de Investigación Sanitaria de Santiago, e de novo teño o pracer de poder presumir da vosa entrega, dedicación e actividade.

Como podedes comprobar, o IDIS prosegue a súa tendencia a mellorar, ano tras ano, en produción científica, recursos humanos e captación económica. Malia as limitacións orzamentarias de ámbito nacional e autonómico, os nosos indicadores permiten asegurar a progresión e excelencia da vosa actividade. Aínda que temos liñas de mellora e a investigación médica con ensaios clínicos multicéntricos e internacionais e en fases precoces é un obxectivo pendente de conseguir.

No ano 2019 centrámonos en tres importantes eixes organizativos, que xa están sendo percibidos por todo o noso colectivo: a renegociación do acordo coa Universidade de Santiago de Compostela, a reorganización da Fundación e a súa vinculación co IDIS e a tramitación da renovación da acreditación do IDIS no Instituto de Salud Carlos III. O acordo organizativo e funcional entre SERGAS, Consellería de Sanidade e USC era un obxectivo largamente esperado

Once again, I have been entrusted with the task of going over the activities of the Health Research Institute of Santiago de Compostela (IDIS), and again your dedication, devotion and work is for me a token of pride.

As you can see, IDIS remains true to its mission to improve its scientific production, its human capital and its fund-raising capabilities with every passing year. Despite the budgetary limitations at both national and regional level, our indicators ensure the progression and excellence in your projects. Although we still have room for improvement and clinical research with multicentre and international clinical trials at early stages remains a goal to be pursued.

In 2019 we have focused on three important organizational axes, whose results are already beginning to be felt across the board: the renegotiation of the agreement among the SERGAS (Galician Health Service), the Galician Ministry of Health and the University of Santiago de Compostela, the reorganization of the Foundation and its association with IDIS and the processing of the re-accreditation of IDIS with the Carlos III Health Institute.



e nunca conseguido por trabas máis ou menos xustificadas. Nestes meses chegamos a acordos que xa están permitindo a completa mobilidade dos investigadores, a xestión económica compartida e a coxestión de moitas plataformas. Aínda falta camiño por percorrer, pero a colaboración iniciada xa non ten volta atrás, porque da unión entre persoas, infraestruturas e proxectos só podemos esperar beneficios para todos. Confiemos en alcanzar que as dúas marcas de excelencia da investigación biosanitaria galega, CIMUS e IDIS, sexan utilizadas conxuntamente e así duplicaremos o capital científico e incrementaremos o prestixio internacional. CIMUS e IDIS son marcas complementarias e xuntas serán moito máis competitivas no cada vez máis complexo mundo da investigación e da innovación.

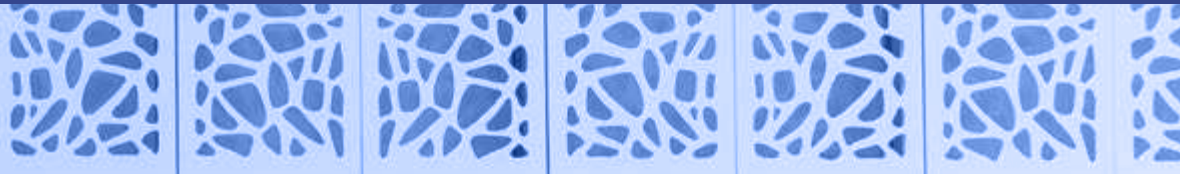
Ao longo deste ano conseguiu-se unha reorganización imprescindible para converter á Fundación nun servizo a disposición dos investigadores e identificada cos obxectivos do Instituto.

Non se trata de dúas entidades diferentes, senón dun Instituto que dispón dunha Fundación para a xestión de moitos procesos asociados á investigación, recursos humanos e económicos, tramitación dos proxectos e ensaios clínicos, mantemento e soporte das infraestruturas, obras, etc.

E o terceiro eixe foi toda a tramitación para conseguir a reacreditación do IDIS como instituto de investigación sanitaria acreditado no Instituto de Salud Carlos III. Esta acreditación, a terceira do IDIS, é un obxectivo prioritario para manter a competitividade e a excelencia da investigación, en colaboración con todos os institutos que comparten os nosos propios obxectivos. Aínda que a resolución final deste proceso corresponderá á memoria do 2020, creo que as referencias son o suficientemente boas para estar satisfeito de todo o que fixestes no IDIS nos últimos 5 anos.

Non é posible rematar a memoria do 2019 sen facer unha referencia aos obxectivos a conseguir no ano 2020. Manter o





The organizational and operational agreement among the SERGAS, the Galician Ministry of Health and the University of Santiago de Compostela was a long-awaited objective which had never come to fruition due to more or less justified obstacles. In these months we have reached agreements that are already resulting in the full mobility of researchers, shared economic management and the co-management of many platforms. There is still a long way to go, but the collaboration established is here to stay as only advantages for all can be expected from the combined effort and interaction by people, infrastructures and projects. Let us hope that the two marks of excellence in Galician biomedical research, CIMUS and IDIS, are able to work together and thus we will double the scientific capital and increase international prestige. CIMUS and IDIS are complementary brands and together they will become much more competitive in the ever-increasingly complex world of research and innovation.

Throughout this past year, an essential reorganization has been achieved to turn the Foundation into a service available to researchers and in line with the Institute's objectives. We are not before two different entities, but rather it is an Institute that has a Foundation for the management of the many processes associated with research, human and financial resources, the processing of clinical trials and projects as well as the maintenance and support of infrastructures, works, etc.

And the third axis has been the entire procedure to obtain IDIS's re-accreditation as an accredited health research institute with the Carlos III Health Institute. This accreditation, the third submitted by IDIS, is a priority objective in order to ensure competitiveness and excellence in research, working in collaboration with all the institutes that share our own objectives. Although the outcome of this process will be a matter for the 2020 report, I think the background is good enough to be satisfied with everything you have done at IDIS in the last 5 years.



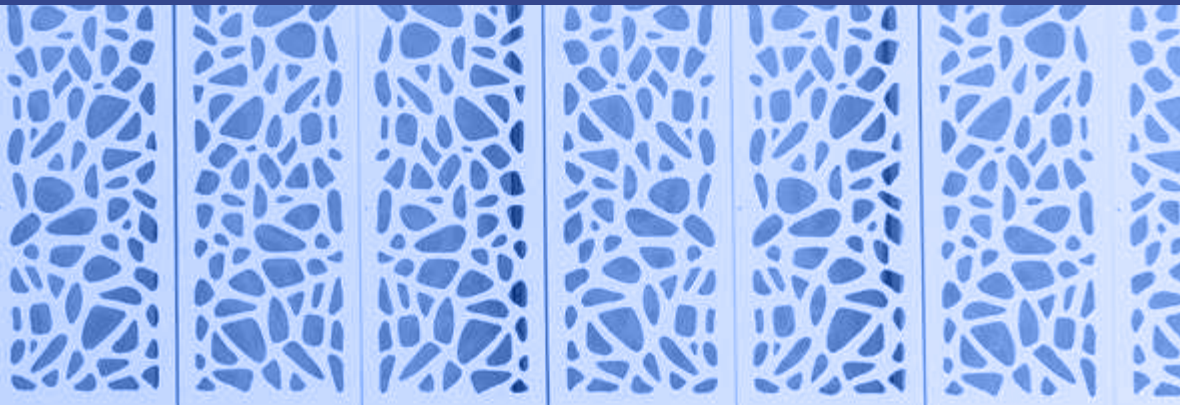


incremento en todos os indicadores que miden a actividade e produción do instituto é o obxectivo fundamental, pero temos tres retos específicos que temos que afrontar, co convencemento de que os imos a conseguir: a estabilización e a carreira profesional dos investigadores e do persoal técnico -obxectivo largamente esperado e sempre a piques de conseguirse-, a integración máis efectiva dos investigadores IDIS de Lugo coa dotación de infraestruturas para investigación, e a construción de novos espazos imprescindibles para a investigación en Santiago.

Sen dúbida, a terrible traxedia que nos afectou no primeiro semestre do 2020 influirá nos obxectivos 2020. Pero vexamos o positivo e desexemos que a comprensión do que é e o que pode ser o IDIS sexa mellor entendido por todos e que, desta vez si, a investigación sexa considerada como un valor engadido imprescindible para o avance da nosa sociedade.

Ademais, non basta que o IDIS sexa excelente agora, teremos que prepararnos para que sexa moito mellor nos seguintes anos.





I cannot end the 2019 report without mentioning the objectives to be achieved in 2020. The fundamental objective is to continue to improve the performance in all the indicators that measure the activities and production of the institute, but we have three specific challenges we need to face with the conviction that we will accomplish them: stable careers for researchers and technical staff – a long-sought objective which is never quite achieved – a most effective integration of Lugo IDIS researchers by providing them with research infrastructures, and the construction of new essential spaces for research in Santiago.

Undoubtedly, the appalling tragedy that has affected us all in the first semester of 2020 will have an impact on the 2020 goals. But let us focus on the positive and hope that this may prove an opportunity for everyone to better understand what IDIS is and what it can be, and that this time, at last, research is indeed considered an essential added value for the advancement of our society. Furthermore, it is not enough that IDIS is excellent now, the foundations will have to be laid to make it much better in the following years.





# SUMMARY

1  
EXECUTIVE  
SUMMARY

12

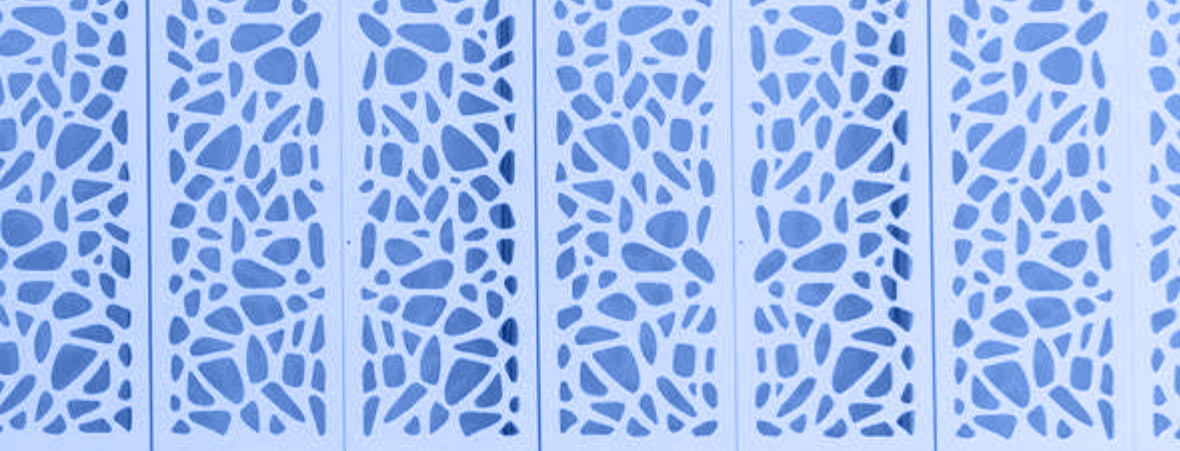
2  
GLOBAL  
ANALYSIS

16

3  
STRUCTURE

38





4

RECURRENT  
TRAINING

50

5

INNOVATION  
AND TRANSFER

53

6

PLATFORMS

61

7

COMPETITIVE  
FUNDING

69

8

STRATEGIC  
ALLIANCES

75

9

AREAS

79



The background is a solid dark blue. It features several concentric circles of varying sizes and colors, ranging from light blue to a slightly darker shade of blue. A large, bold, dark blue number '1' is positioned on the left side of the page. The text 'EXECUTIVE SUMMARY' is written in a white, sans-serif font, centered horizontally and partially overlaid by the number '1'.

# EXECUTIVE SUMMARY

ANNUAL REPORT 2019





The **Biomedical Research Institute of Santiago de Compostela** is a translational research centre for innovation and transfer knowledge that optimizes existing synergies between the *Xerencia de Xestión Integrada de Santiago de Compostela* and the *University of Santiago de Compostela*. It is accredited as a medical research centre of the *National Health System by the Institute of Health Carlos III*.







# 2019

## TOTAL FUNDS RAISED

**32.208.340,34 €**

**92**

Projects

**276**

Donations

**98**

Clinical trials

**65**

Staff  
contracts

**532**

Contracts and  
provision of  
services

**115**

Observational  
studies

**846**

Published articles

**7**

Granted patents

**1**

Software

**71**

Thesis

**44**

Requested patents

**1**

Utility Models



The background is a solid dark blue. It features a large, faint, dark blue number '2' on the left side. Overlaid on this are several thin, light blue concentric circles of varying sizes, some of which are partially cut off by the edges of the frame. There are also a few small, light blue dots scattered across the background.

# GLOBAL ANALYSIS

ANNUAL REPORT 2019



## Number of **groups** per area



**1280 people** are integrated in **94 groups** organized in **6 research areas**.

There is also a support area (*Scientific-Technical Coordination and common support platforms for research*).

20



13



16



17



14



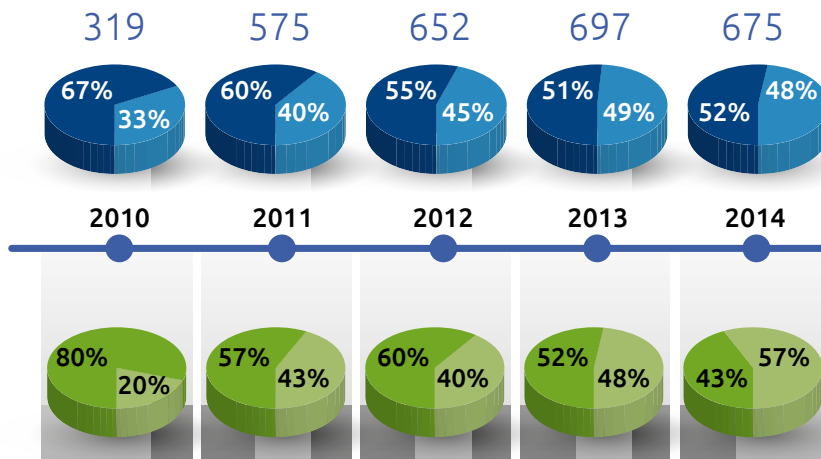
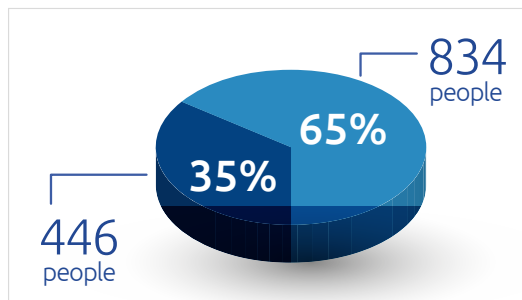
14





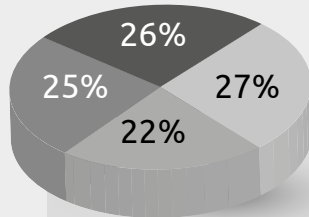
## History of a joint venture: **human resources in figures**

**1.280**  
people

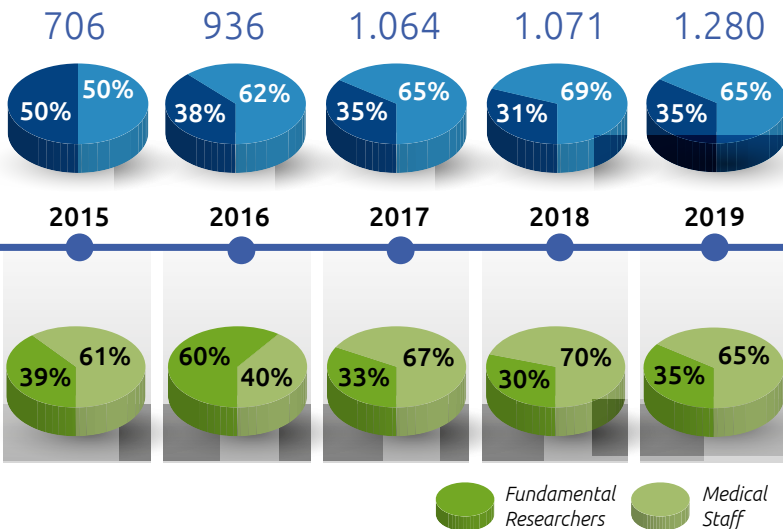




## 2. GLOBAL ANALYSIS

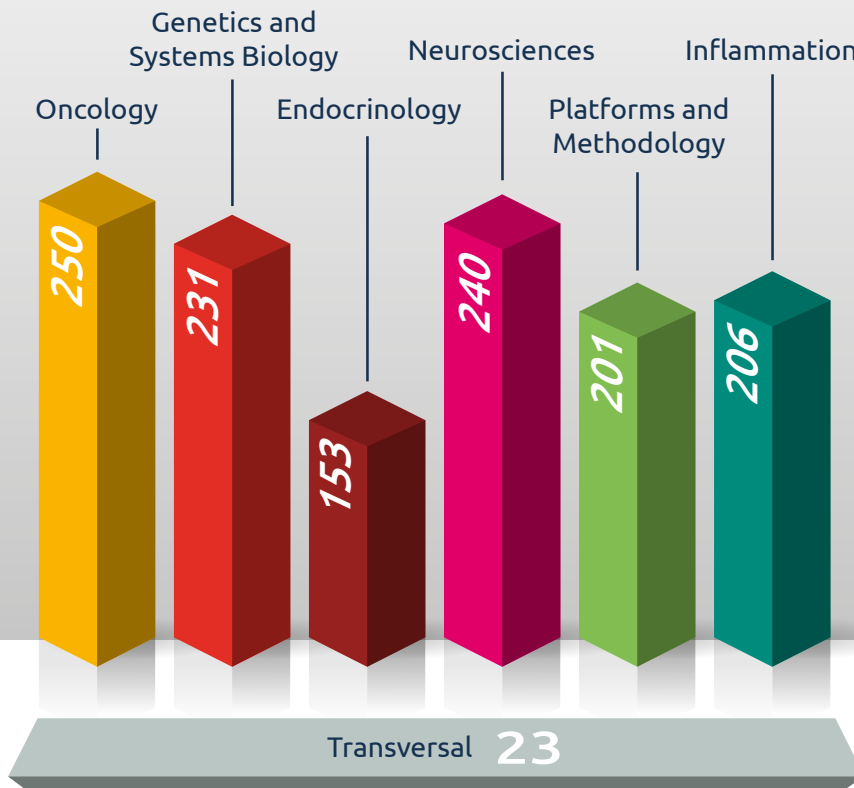


- Senior Researchers
- Postdoctoral Researchers
- Predoctoral Researchers
- Support Staff





## Number of **researchers per area**



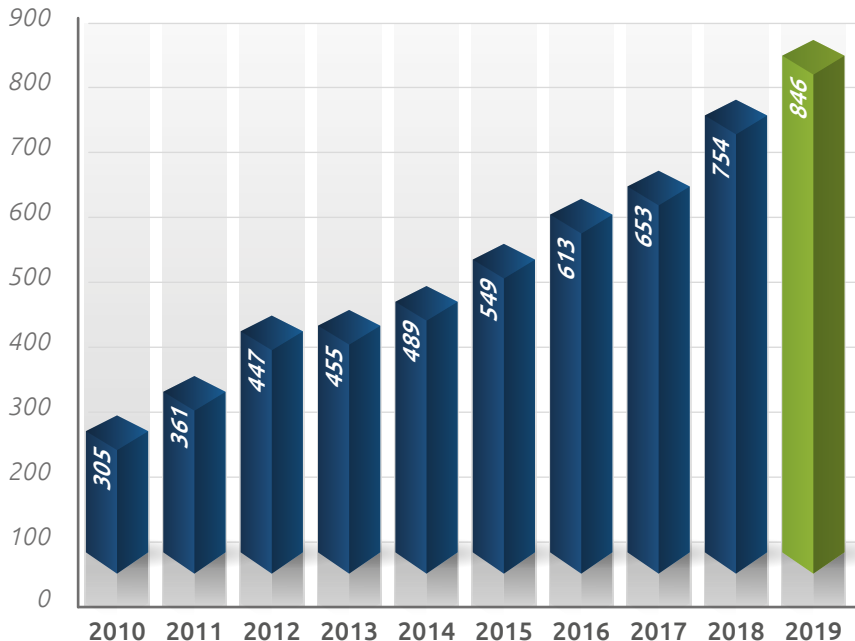






## Number of published articles each year

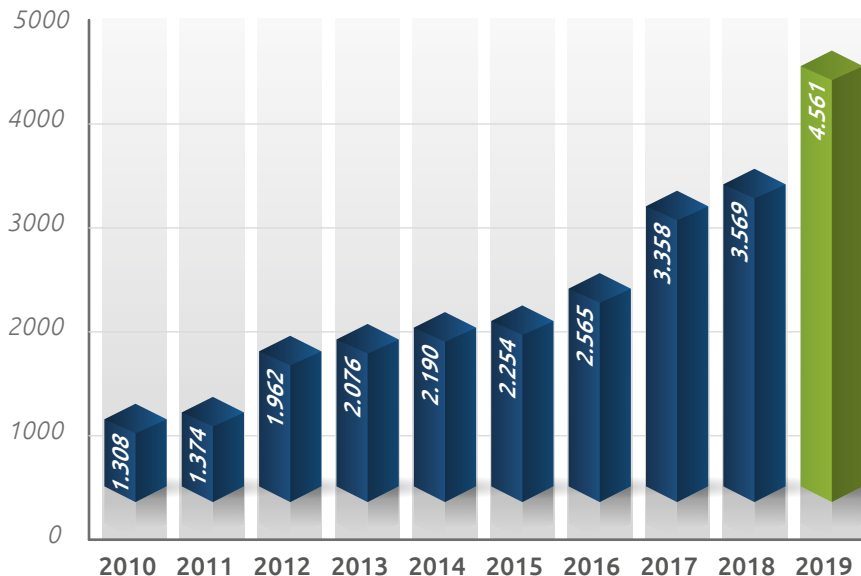
The Institute has published **846 original scientific articles, editorials and reviews** in 496 international journals indexed in the *Journal Citation Report* with an **cumulative impact factor of 4.561 points**.





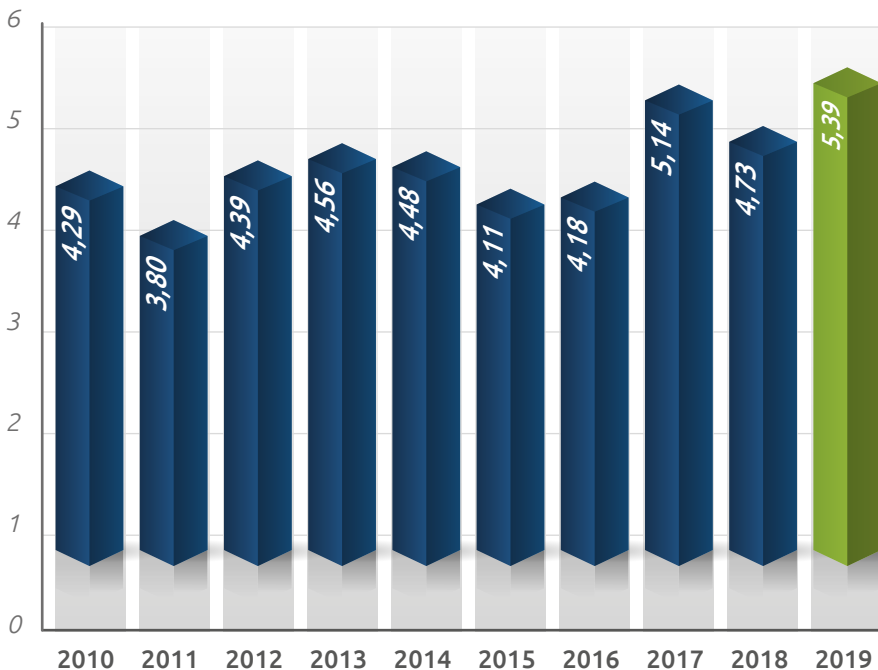
### Cumulative impact factor

The upward trend of the cumulative impact factor is maintained and it moves from 1.308 in 2010 to **4.561 in 2019**.





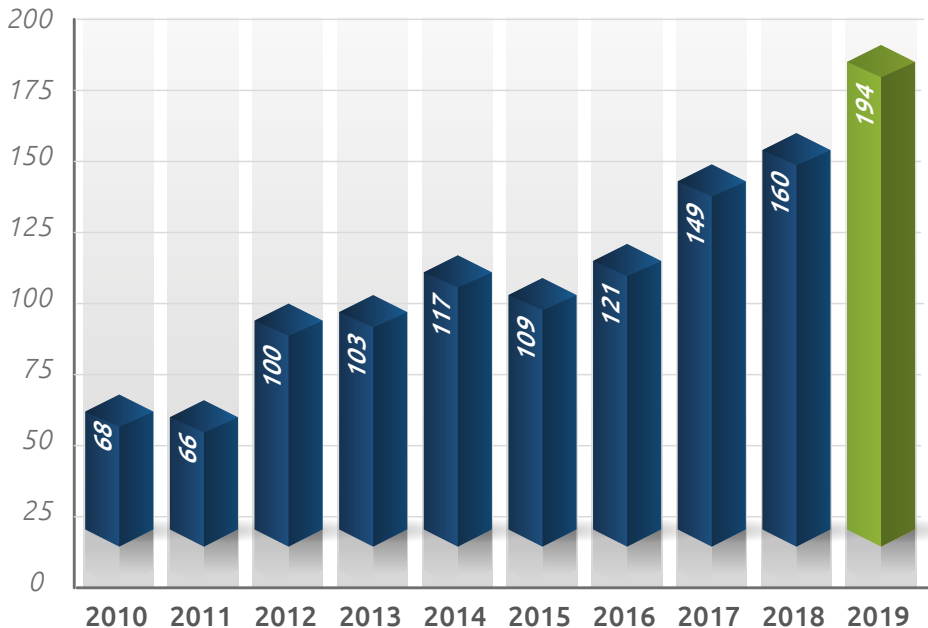
## Average impact factor





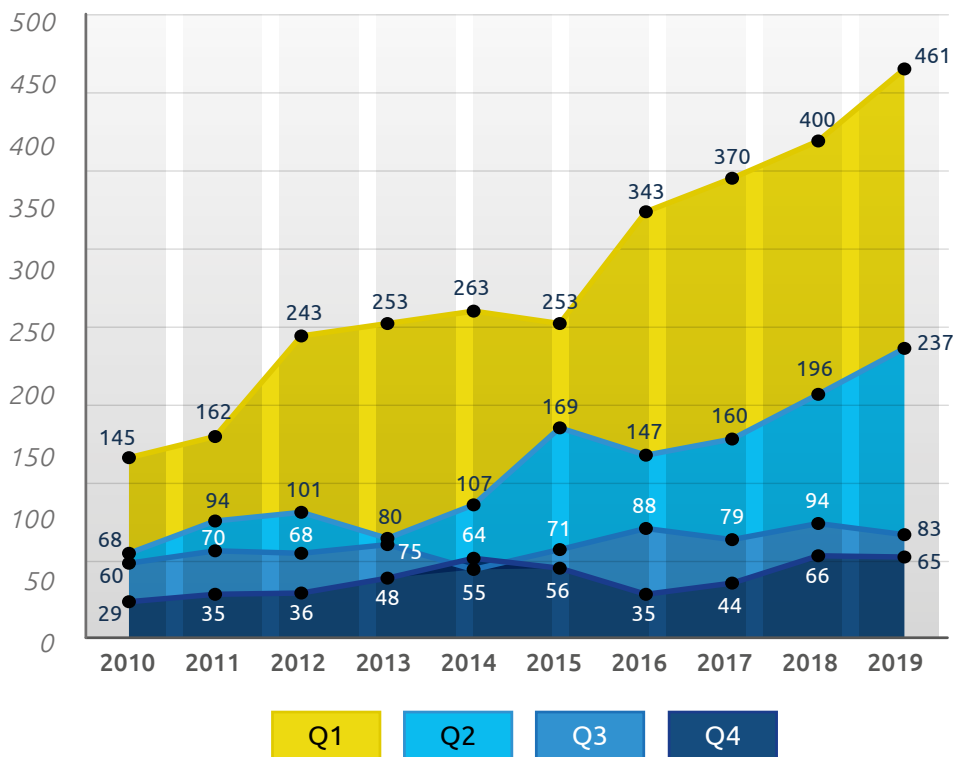
## Number of **published articles in the first decile**

A remarkable increase in the first decile for the same period from 68 articles published in 2010 to **194 in 2019**.





## Number of articles by year published in each quartile

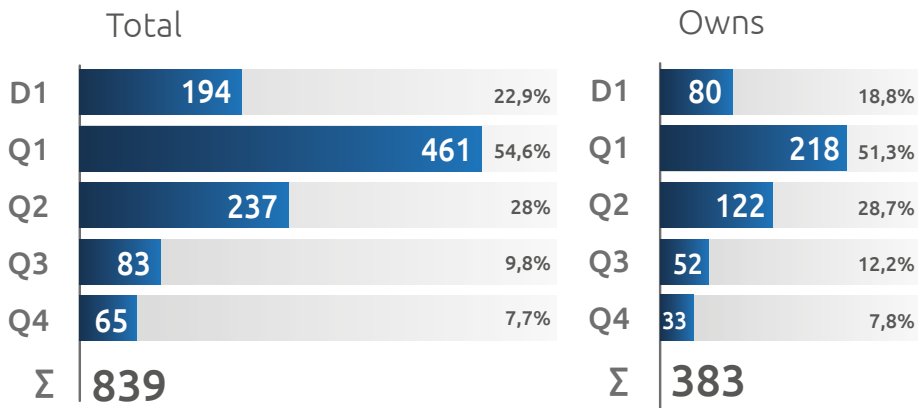




## Number and % of the total number of publications and articles in 2019

The number of articles per quartile **increased gradually during the period of 2010-2019 almost in every quartile and every year.**

Taking into account the relevance of the authors in the articles signature, we identify those in which the first or the last author is assigned to an IDIS group. We define them as articles of our own.





## ANNUAL REPORT 2019

*Health Research Institute. Santiago de Compostela*



378

Articles published in  
collaboration between the  
groups of the centres  
outside of Spain

197

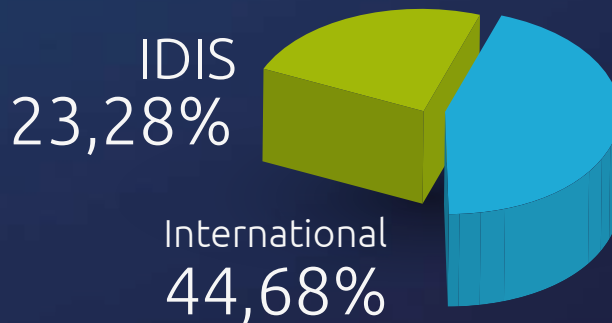
Articles published in  
collaboration between  
the IDIS groups



Number and % of articles published in collaboration between the IDIS groups and the groups of the centres outside of Spain.

In 2019, 23,28% of the work were carried out by teams in which members of more than one IDIS group were involved.

44,68% were done in collaboration with researchers from centres outside of Spain.





During 2019, the funds raised in competitive calls for **research projects**, the **recruitment of staff**, **infrastructures**, **agreements**, **contracts and provision of services**, **donations**, **clinical trials and observational studies** generated **32.208.340,34 €** which will complement the resources of the institutions that take part in IDIS.

AMOUNT

**32.208.340,34 €**



## Summary of the funds raised in 2019

CONCEPT	NUMBER	AMOUNT
Projects	92	<b>16.616,679,97 €</b>
Human resources	65	<b>5.188.076,76 €</b>
Donations	276	<b>800.319,10 €</b>
Contracts and provision of services	532	<b>4.653.285,12 €</b>
Transfer	7	<b>8.951,00 €</b>
Infrastructure	5	<b>1.028.956,56 €</b>
Studies ( <i>Clinical Trials, Observational Studies</i> )	212	<b>3.912.071,83 €</b>



2019

AMOUNT RAISED

**32.208.340,34 €**



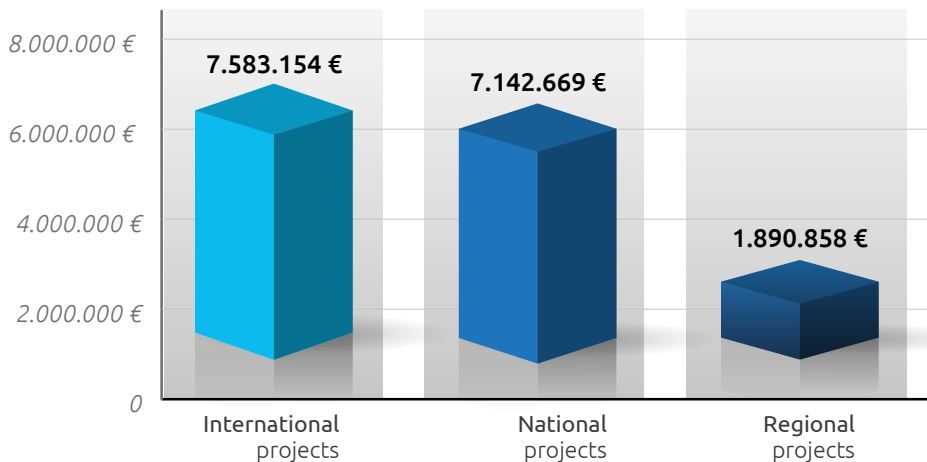
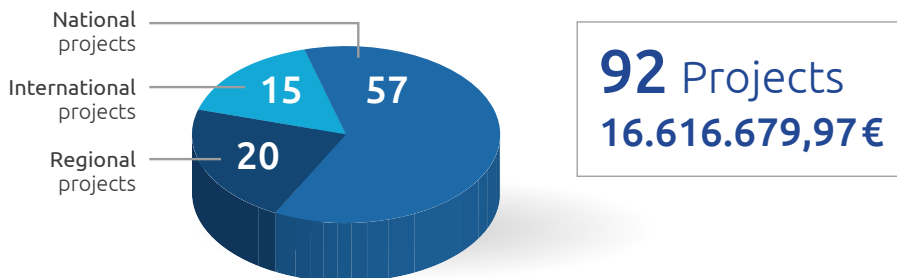


## 2. GLOBAL ANALYSIS



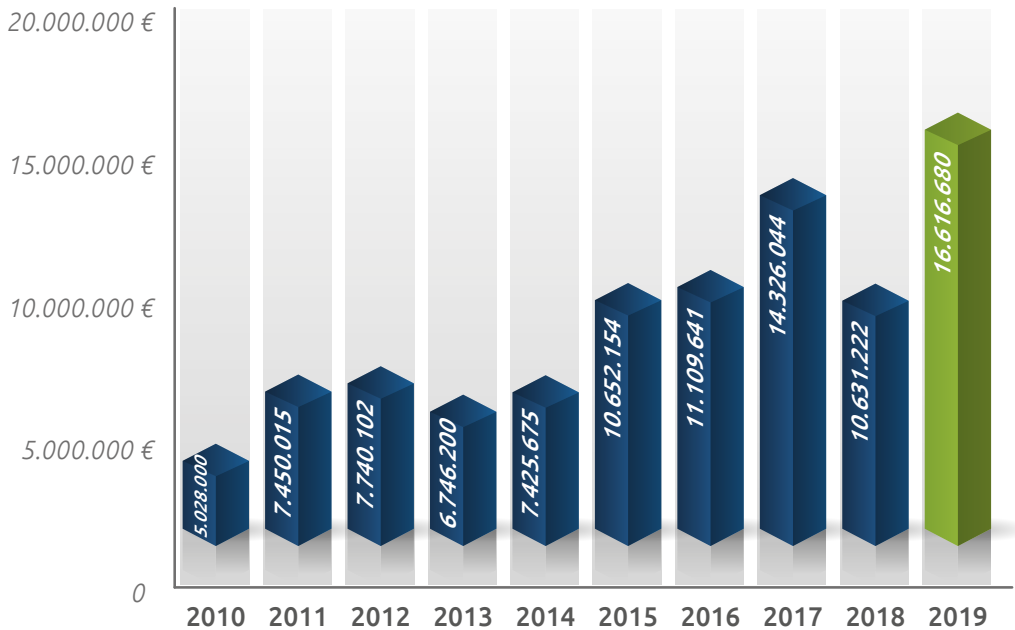


## Number and amount of funds raised in 2019 for projects by location





### Amount of funds raised by year for projects





**98**

## CLINICAL TRIALS

**22** National

**76** International

**114**

## OBSERVATIONAL STUDIES

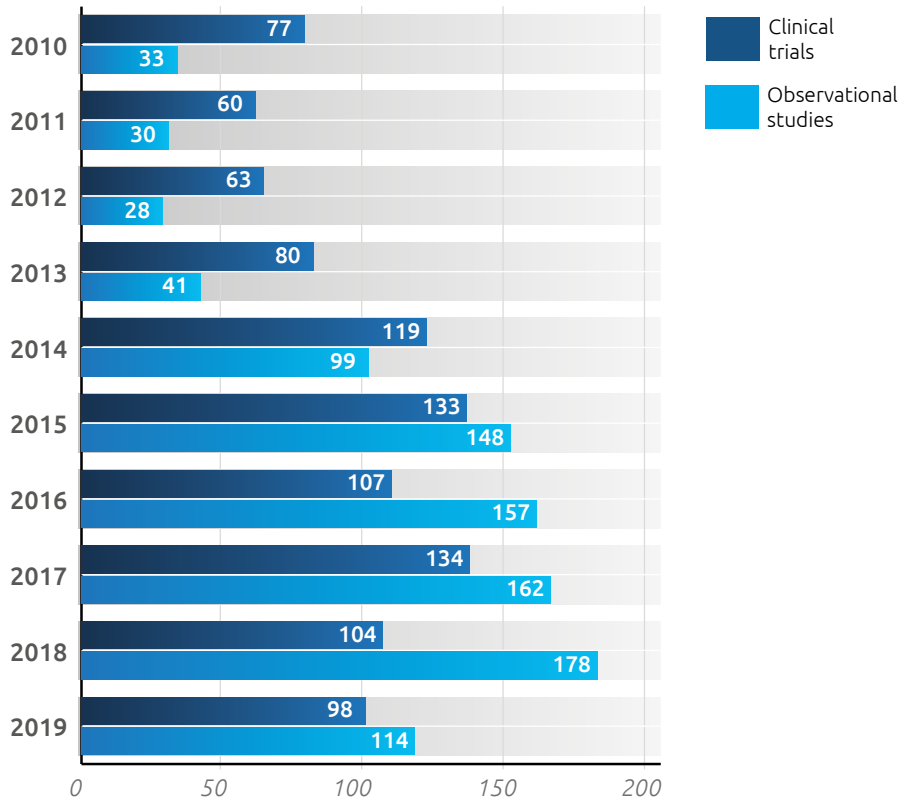
**58** National

**9** International

**6** Regional

**41** Local



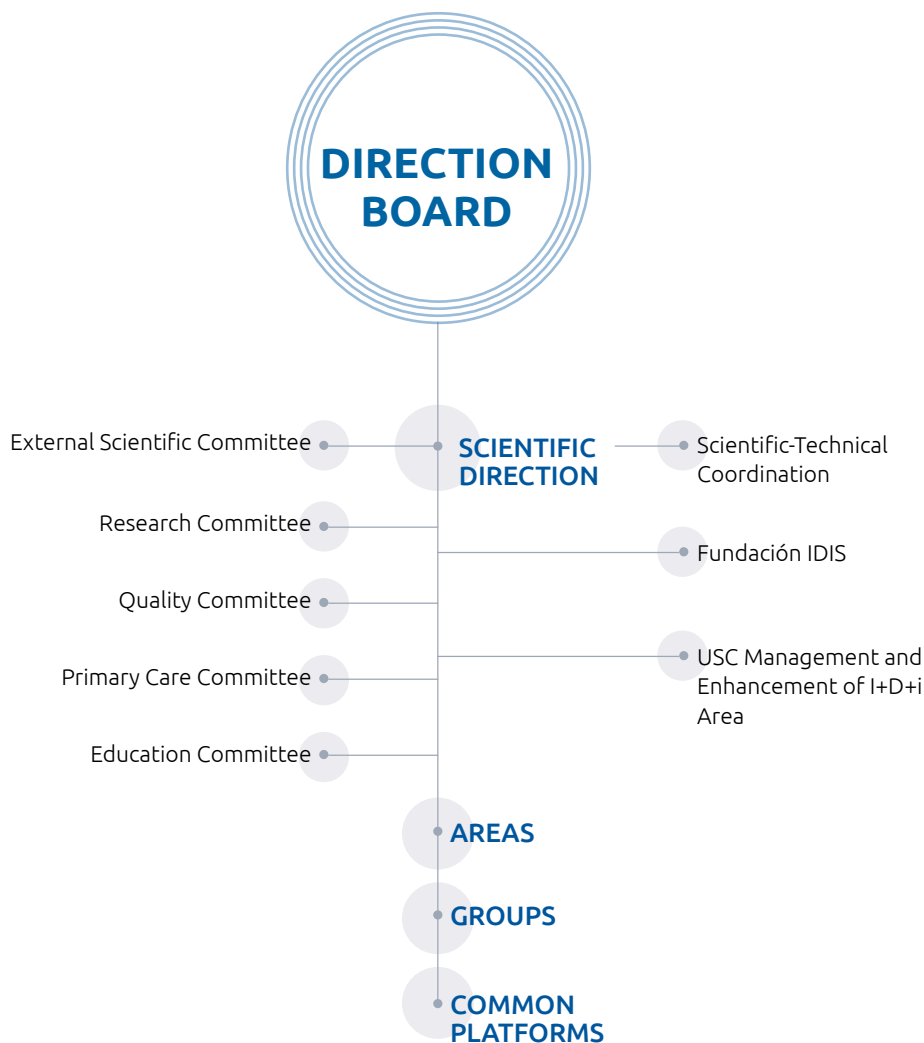
Number of **clinical trials** and **observational studies**



3

# STRUCTURE








## Government bodies





## Advisory bodies



### EXTERNAL SCIENTIFIC COMMITTEE

Ángeles Almeida Parra  
Melchor Álvarez de Mon Soto  
María del Carmen Ayuso García  
Joan Xavier Comella Carnicé  
Xosé García Bustelo  
María Teresa Miras Portugal  
Rosario Luquin Piudo



### RESEARCH COMMITTEE

**PRESIDENT**  
Federico Martinón Torres

**SECRETARY**  
Yolanda Liste Martínez

José Ramón Caeiro Rey  
Anxo Fernández Ferreiro  
Rodolfo Gómez Bahamonde  
Carlos Peña Gil  
Andrés Soto Varela  
Ana Vega Gliemmo  
Irene Zarra Ferro  
Isabel Lista García



## Advisory bodies



### QUALITY COMMITTEE

#### PRESIDENT

Luis León Mateos

#### SECRETARY

Yolanda Liste Martínez

Carlos Grande Sellera

Isabel Lista García

Pablo Mosquera Martínez

Beatriz Pais Iglesias



### EDUCATION COMMITTEE

#### PRESIDENT

Clara Álvarez Villamarín

#### SECRETARY

José Ramón Castro Ruibal

Ana Calvache González

Rogelio Leira Muíño

Sergio Cinza Sanjurjo

Francisca Lago Paz

María Torres Español

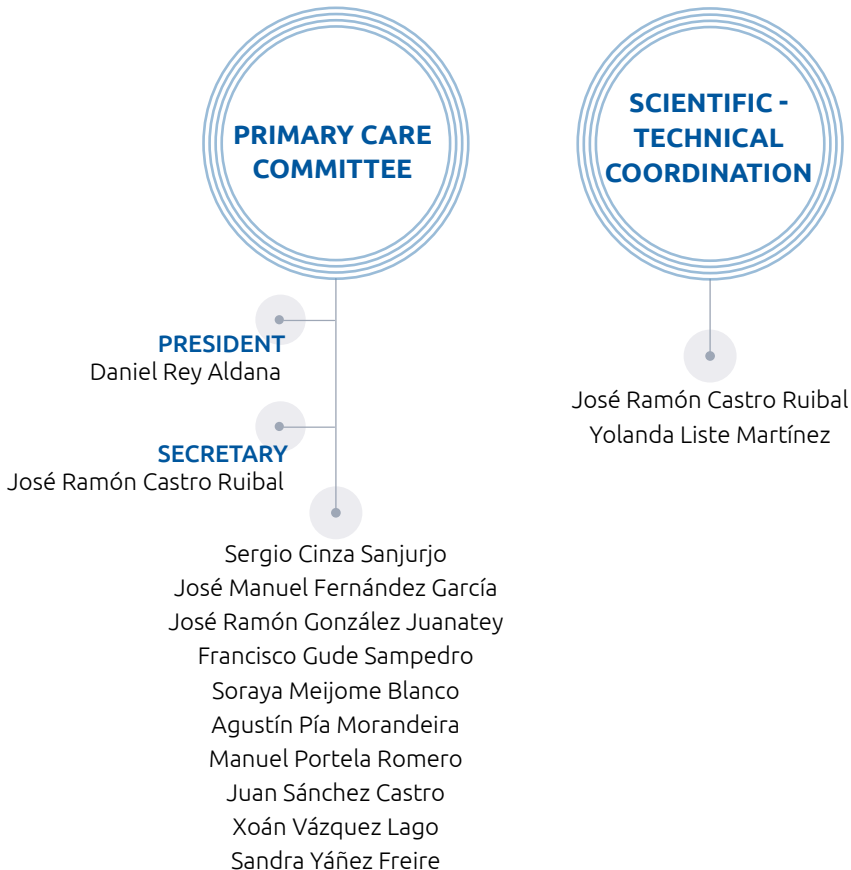
Ángel Díaz Lagares

Adrián Mosquera Orgueira

Diana Guallar Artal



## Advisory bodies





**A001 ONCOLOGY** *Coordinator: Rafael López López*

<b>C010</b>	Genetics of Human Diseases	<i>Fernando Domínguez Puente</i>
<b>C011</b>	Pathology	<i>José Ramón Antúnez López</i>
<b>C025</b>	NANOBIOFAR	<i>María José Alonso Fernández</i>
<b>C030</b>	Traslational Medical Oncology	<i>Rafael López López</i>
<b>C032</b>	Molecular Imaging	<i>Álvaro Ruibal Morell</i>
<b>E004</b>	Molecular Oncology	<i>José Antonio Costoya Puente</i>
<b>E018</b>	Cell Cycle and Oncology (CiClon)	<i>Anxo Vidal Figueroa</i>
<b>E028</b>	Stem Cells in Cancer and Aging	<i>Manuel Collado Rodríguez</i>
<b>E031</b>	Oncologic Endocrinology	<i>Román Pérez Fernández</i>
<b>E032</b>	Preclinical Animal Models	<i>Laura Sánchez Piñón</i>
<b>E033</b>	Viruses and cancer	<i>María del Carmen Rivas Vázquez</i>
<b>E037</b>	DNA Repair and Genome Integrity	<i>Miguel González Blanco</i>
<b>E042</b>	Translational Oncology (GIOT-HULA)	<i>Cristina Núñez González</i>
<b>E043</b>	Medical Physics and Biomathematics	<i>Juan Pardo Montero</i>
<b>E044</b>	Nano-Oncology and Translational Therapy Unit	<i>María de la Fuente Freire</i>
<b>AC01</b>	Lymphoproliferative Disorders	<i>José Luis Bello López</i>
<b>AC06</b>	Intraocular Tumours in Adults	<i>Antonio Piñeiro Ces</i>
<b>AC08</b>	Surgical Oncology	<i>Manuel Bustamante Montalvo</i>
<b>AC14</b>	Breast Patology	<i>Manuel Vázquez Caruncho</i>
<b>AC15</b>	Hematology HULA	<i>Jesús Antonio Arias Sampedro</i>



**A002 GENETICS AND SYSTEMS BIOLOGY***Coordinator: Ángel Carracedo Álvarez*

<b>C005</b>	Genetics	Ángel Carracedo Álvarez
<b>C009</b>	Translational Research in Digestive Diseases	Juan Enrique Domínguez Muñoz
<b>C020</b>	Genetics, Vaccines, Infections and Paediatrics (GENVIP)	Federico Martinón Torres
<b>C041</b>	Cancer Genetics and Rare Diseases	Ana Paula Vega Gliemmo
<b>E012</b>	Comparative Genomics of Human Parasites	Julio Manuel Maside Rodríguez
<b>E015</b>	Population Genetics in Biomedicine (GenPoB)	Antonio Salas Ellacuriaga
<b>E016</b>	Genetics of Neurological Disorders	María Jesús Sobrido Gómez
<b>E020</b>	Psychiatric Genetics	Javier Costas Costas
<b>E021</b>	Genetics and Developmental Biology of Kidney Diseases	Miguel Ángel García González
<b>E027</b>	Escherichia coli	Jorge Blanco Álvarez
<b>E035</b>	Genetics of Gastrointestinal Tumours	Clara Ruiz Ponte
<b>E036</b>	Stem Cells and Human Diseases	Miguel Ángel Fidalgo Pérez
<b>E040</b>	Mobile Genomes and Disease	José Manuel Castro Tubío



## A003 ENDOCRINOLOGY *Coordinator: Felipe Casanueva Freijo*

<b>C001</b>	Neoplasia and Endocrine Differentiation	<i>Clara Álvarez Villamarín</i>
<b>C006</b>	Molecular Endocrinology	<i>Felipe Casanueva Freijo</i>
<b>C008</b>	Obesity and Nutrition	<i>Carlos Diéguez González</i>
<b>C012</b>	Metabolic Disorders	<i>María de la Luz Couce Pico</i>
<b>C019</b>	Thyroid and Metabolic Disorders Unit (UETeM)	<i>David Araújo Vilar</i>
<b>C022</b>	Paediatric Nutrition	<i>Rosaura Leis Trabazo</i>
<b>C029</b>	Neurobesity	<i>Miguel López Pérez</i>
<b>C031</b>	Molecular Metabolism	<i>Rubén Nogueiras Pozo</i>
<b>E006</b>	Cytokines and Obesity (Citobes)	<i>María del Carmen García García</i>
<b>E023</b>	Obesidomics	<i>María Pardo Pérez</i>
<b>E025</b>	Cellular Endocrinology	<i>Jesús Pérez Camiña</i>
<b>E026</b>	Endocrine Physiopathology	<i>Luisa María Seoane Camino</i>
<b>E039</b>	Diabetes	<i>Sulay Tovar Carro</i>
<b>E041</b>	Epigenomics in Endocrinology and Nutrition	<i>Ana Belén Crujeiras Martínez</i>
<b>AC04</b>	Paediatric Endocrinology	<i>Manuel Pombo Arias</i>
<b>AC16</b>	Lipid Unit and Vascular Risk	<i>José Ignacio Vidal Pardo</i>



## A004 NEUROSCIENCES *Coordinator: José Castillo Sánchez*

<b>C004</b>	Neurobiology	<i>Antonio Canedo Lamas</i>
<b>C007</b>	Clinical Neurosciences (LINC)	<i>José Castillo Sánchez</i>
<b>C015</b>	Neurobiology of the Visual System	<i>Francisco González García</i>
<b>C018</b>	Experimental Neurology of Parkinson's Disease	<i>José Luis Labandeira García</i>
<b>C026</b>	BIOFARMA	<i>María Isabel Loza García</i>
<b>C033</b>	Design, Synthesis and Medical Evaluation of Bioactive Compounds and New Materials	<i>Antonio Mouriño Mosquera</i>
<b>C034</b>	Physics of Polymers and Colloids	<i>Victor Mosquera Tallón</i>
<b>C035</b>	R&D in Drugs Dose Forms and Delivery Systems	<i>Ángel Concheiro Nine</i>
<b>C036</b>	Magnetism and Nanotechnology (NanoMag)	<i>José Rivas Rey</i>
<b>C037</b>	Trace Elements, Spectroscopy and Speciation	<i>Pilar Bermejo Barrera</i>
<b>C038</b>	Analytical Chemistry of Compounds of Alimentary, Environmental and Biological Interest	<i>Antonia María Carro Díaz</i>
<b>E014</b>	Prion Diseases	<i>Jesús Rodríguez Requena</i>
<b>E019</b>	Cell Stress	<i>Juan Bautista Zalvide Torrente</i>
<b>E029</b>	Cognitive Neuroscience	<i>Fernando Díaz Fernández</i>
<b>AC03</b>	Critical Patient	<i>Julían Álvarez Escudero</i>
<b>AC11</b>	Life Support and Medical Simulation	<i>Antonio Rodríguez Núñez</i>
<b>AC12</b>	Otoneurology	<i>Marcos Rossi Izquierdo</i>



**A005 PLATFORMS AND METHODOLOGY***Coordinator: Francisco Gude Sampedro*

<b>C002</b>	Experimental Surgery	<i>Miguel Ángel Caínzos Fernández</i>
<b>C013</b>	Epidemiology, Public Health and Evaluation of Health Services	<i>Adolfo Figueiras Guzmán</i>
<b>C017</b>	Research Methodology	<i>Francisco Gude Sampedro</i>
<b>C021</b>	Clinical Analysis	<i>Santiago Rodríguez-Segade Villamarín</i>
<b>C024</b>	Radiology	<i>Miguel Souto Bayarri</i>
<b>E002</b>	Biostatistics	<i>Carmen María Cadarso Suárez</i>
<b>E013</b>	Microbiology	<i>María Luisa Pérez del Molino Bernal</i>
<b>E034</b>	Clinical Pharmacology	<i>María Jesús Lamas Díaz</i>
<b>E046</b>	PARAQUASIL	<i>José Blanco Méndez</i>
<b>AC09</b>	Oral Sciences (OSRG)	<i>Inmaculada Tomás Carmona</i>
<b>AC10</b>	Healthy ageing, fragility and chronicity. Research in Primary Care	<i>Juan Manuel Vázquez Lago</i>
<b>AC13</b>	Dermatology and Craniofacial Pathology (DePaCra)	<i>Pablo Ignacio Varela Centelles</i>
<b>AC17</b>	Comprehensive care of the patient. Epidemiology and physiopathology of frailty	<i>María Bermúdez López</i>
<b>AC18</b>	Surgical Research (GRICI)	<i>José Conde Vales</i>



**A006 INFLAMMATION***Coordinator: José Ramón González Juanatey*

<b>C003</b>	Hypertension	<i>Carlos Calvo Gómez</i>
<b>C014</b>	Rheumatology	<i>Juan Jesús Gómez-Reino Carnota</i>
<b>C016</b>	Cardiology	<i>José Ramón González Juanatey</i>
<b>C027</b>	Neuroendocrine Interactions in Rheumatic and Inflammatory Diseases (Neirid)	<i>Oreste Gualillo</i>
<b>C028</b>	Experimental and Observational Rheumatology	<i>Antonio González Martínez-Pedrayo</i>
<b>C039</b>	Biodiscovery HULA-USC	<i>Luis Miguel Botana López</i>
<b>C040</b>	Oral Medicine and Surgery (OMEQUI)	<i>Pedro Diz Dios</i>
<b>E001</b>	Cardiovascular Genetics	<i>María José Brión Martínez</i>
<b>E009</b>	Cellular and Molecular Cardiology	<i>Francisca Lago Paz</i>
<b>E030</b>	Platelet Proteomics	<i>Ángel García Alonso</i>
<b>E038</b>	Musculoskeletal Pathology	<i>Rodolfo Gómez Bahamonde</i>
<b>E045</b>	Translational Cardiology	<i>Sonia Eiras Penas</i>
<b>AC05</b>	Pneumology	<i>Luis Guillermo Valdés Cuadrado</i>
<b>AC07</b>	Semergal	<i>Sergio Cinza Sanjurjo</i>



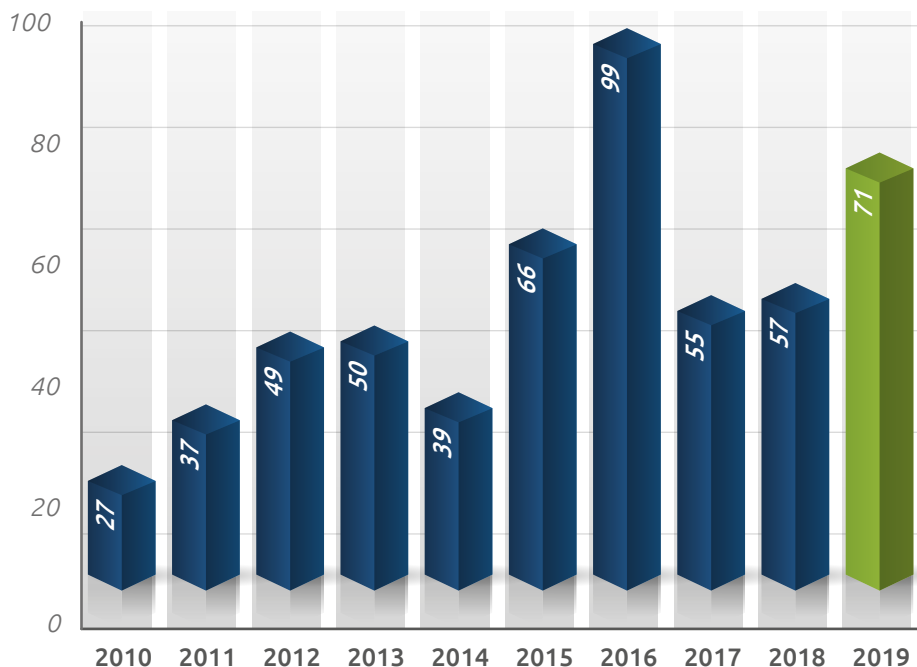
The background is a solid dark blue. It features several concentric circles of varying radii, some centered on the left and some on the right, creating a sense of depth and movement. A large, bold, dark blue number '4' is positioned on the left side, partially overlapping the text. The text 'RECURRENT TRAINING' is written in a clean, white, sans-serif font, centered horizontally and partially overlaid by the number '4'.

# 4 RECURRENT TRAINING

ANNUAL REPORT 2019



## Number of **thesis** each year









The background is a solid dark blue. It features several concentric circles of varying radii and colors, ranging from light blue to a slightly darker shade of blue. A large, bold, dark blue number '5' is positioned on the left side of the image. The text 'INNOVATION AND TRANSFER' is centered in the middle of the image in a white, sans-serif font.

# INNOVATION AND TRANSFER





- **Transfer acceleration through public funding and private investment.**
- **Adopting the Public-Private Partnership Model.**
- **Partnering.**
- **Disseminating our research.**
- **Intellectual property.**



A microscopic image of cells, likely from a tissue sample, showing green fluorescent staining of the cytoplasm and blue fluorescent staining of the nuclei. The cells are interconnected, forming a network-like structure.

### Transfer acceleration through public funding and private investment

#### ITEMAS network

Innovation in Medical and Health Technologies Network funded by the Instituto de Salud Carlos III.

#### CÓDIGO MÁIS project

Valorization program of SERGAS and USC.

#### IGNICIA

The IGNICIA Proof of Concept programme of the Galician Innovation Agency (GAIN) aims to enhance and support the transfer of research results generated by knowledge centres. IGNICIA seeks to accelerate and increase technology transfer, detecting projects with innovative and market potential, contributing to the profitability of public investment in research.

IDIS requested 16 projects and one of them was granted.

#### Atlantic Ket Med

Atlantic KET Med (AKM) is an Interreg funded, coordinated action aiming to establish a Transnational Advanced Pilot Manufacturing Ecosystem for Future Biomedical Products. Featuring partners with expertise in the Key Enabling Technologies (KETs), AKM plans to provide bottom-up support to the ecosystem through direct support of SMEs as well as top-down support through educational and infrastructure policies.

IDIS joins the ecosystem and it's the only Spanish research centre that participates in AKM.







A microscopic image of cells, likely stained with fluorescent dyes, showing a dense field of cells with blue and green fluorescence. The text 'Disseminating our research' is overlaid in white.

### Disseminating our research

#### BioInvestor Day

BIOSPAIN is the first biotech country based event in Europe organized by a national bioindustry association and one of the largest in the world by number of one-to-one meetings and number of participants companies.

Following the success of previous editions, BIOSPAIN 2018 (celebrated in Sevilla, Spain) hosted 773 attendees, more than 773 companies and institutions and over 1,550 delegates from 31 countries. Participating major companies, institutions, research centers of the Spanish biotechnology sector.

IDIS participated in Biospian and made contact and interviewed more than 30 potential partners.

#### BioINCUBATECH

BioIncubaTech is the High Technology Incubator for the promotion of innovation and biotechnology transfer in the field of health and food technologies to micro-SMEs. BioIncubaTech belongs to "High Technology Incubators for the promotion of innovation and technology transfer to micro-SMEs" Project, aimed to modernize the regional productive fabric. These Incubators are created as traction instruments aligned with the objectives of the EU 2020 and Horizon 2020 Strategy and will promote inter-regional cooperation, as well as collaboration between public and private sector agents at international level.

IDIS collaborates since the beginning of this proposal and helped to create the project.



## Intellectual property



43

Request

34 International Application

8 National Application

13 PCT Application

5

Granted







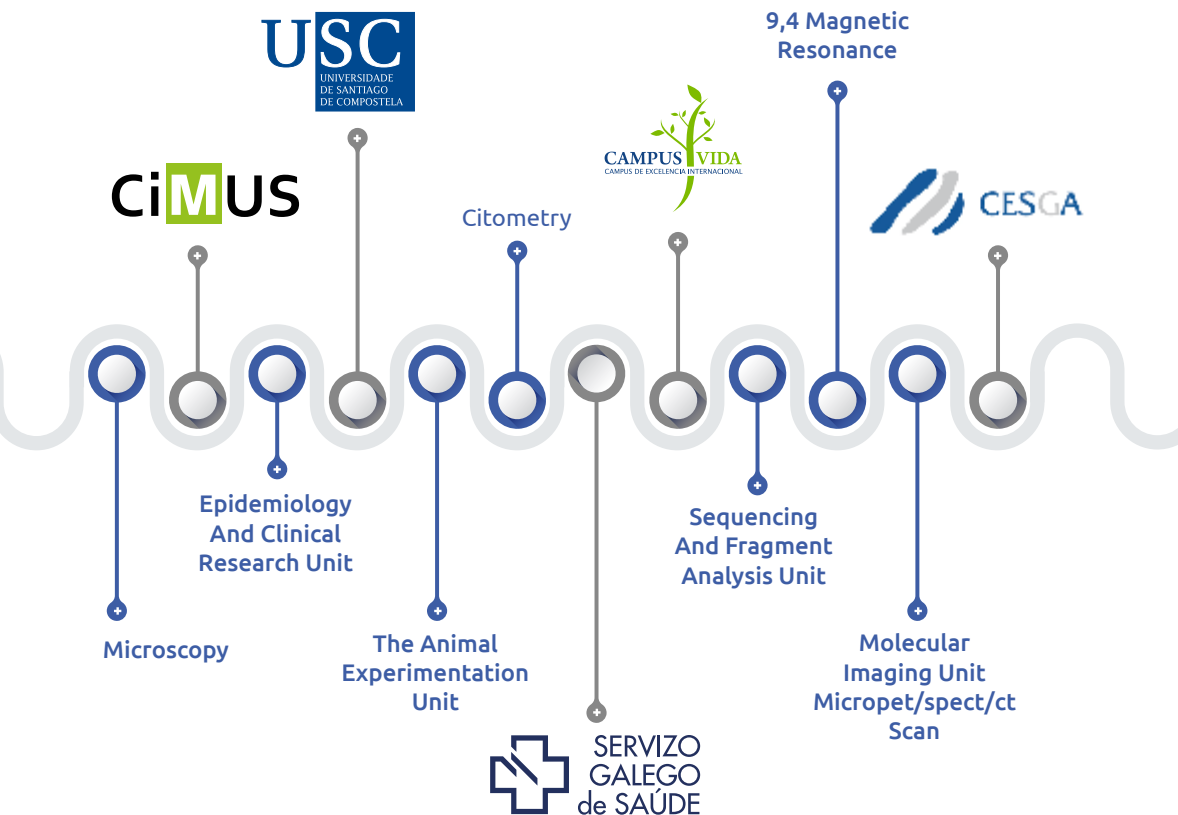




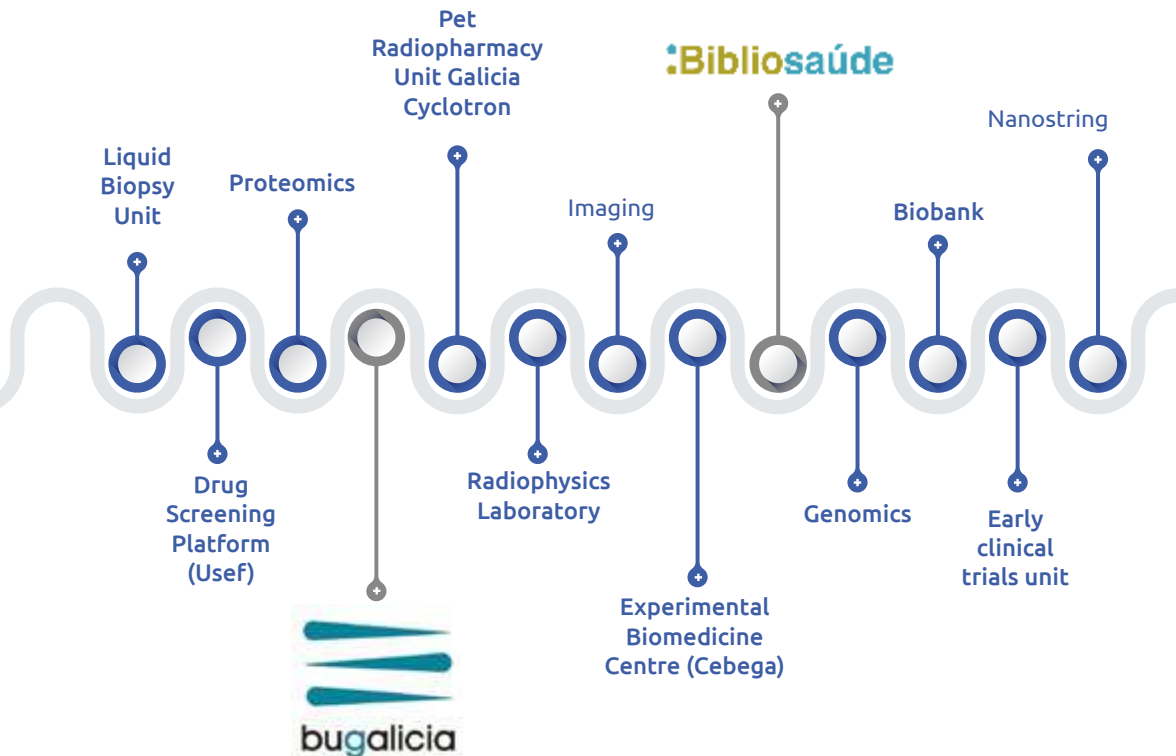
The background is a solid dark blue. It features several concentric circles of varying radii and colors, ranging from light blue to a slightly darker shade of blue. A large, bold, dark blue number '6' is positioned on the left side of the image. The word 'PLATFORMS' is written in a white, sans-serif, uppercase font, centered horizontally and partially overlapping the large number '6'.

# 6 PLATFORMS













## **Proteomics**

**Susana Belén Bravo López**

*[susana.belen.bravo.lopez@sergas.es](mailto:susana.belen.bravo.lopez@sergas.es)*

The proteomics platform was created to enhance, give support and offer a complete infrastructure in the field of proteomics to the Institute's researchers and other public and private bodies. It is equipped with the latest generation technology that allows the development of both studies of characterisation of complete proteomes as well as studies of analysis of differential expression.



## **Liquid Biopsy Unit**

**Laura Muinelo Romay**

*[laura.muinelo.romay@sergas.es](mailto:laura.muinelo.romay@sergas.es)*

The service for the analysis of circulating cells works with the CellSearch<sup>TM</sup> system (Veridex) that allows, through the use of immunomagnetic techniques of enrichment and identification by immunofluorescence, isolate and quantify present cells in peripheral blood. Its main application is aimed to the detailed analysis of circulating tumor cells (CTC), even though the computer also allows identify other kind of cells such as endothelial. In addition, the platform has the capacity to carry out studies with circulating DNA.



## **Flow Citometry**

**Pablo Hervella Lorenzo**

*pablo.hervella.lorenzo@sergas.es*

It is a technique of cells analysis that allows one to measure the characteristics of light scattering and fluorescence that cells have when they pass through a ray of light. This platform's main aims are:

- To advise users of the IDIS on the principles and applications of flow cytometry analysis and cell sorting.
- To develop, optimize and perform new analytic applications demanded by the users of the IDIS.
- To do cellular isolation through cell sorting.
- Quantify different soluble cytokines using multiplex tests.

## **Magnetic Resonance Imaging**

**Ramón Iglesias Rey**

*ramon.iglesias.rey@sergas.es*

MagneticResonanceImagingisperhaps the most versatile neuroimaging technique that exists today. The use of this platform in its different variants (anatomical, functional, spectroscopy and molecular imaging) allows one to perform a complete follow-up, non-invasive (in vivo) and longitudinal in time of the process associated with neurovascular diseases and other such as plasticity, reorganization and functional recovery in animal models.



## ***Biobank***

**Lydia Fraga Fontoira**  
(Manager)

Phone. (+34) 981 955 148

[biobanco.apa.santiago@sergas.es](mailto:biobanco.apa.santiago@sergas.es)

[lydia.fraga.fontoira@sergas.es](mailto:lydia.fraga.fontoira@sergas.es)

## ***Molecular Imaging Unit***

**Pablo Aguiar Fernández**

[pablo.aguiar.fernandez@sergas.es](mailto:pablo.aguiar.fernandez@sergas.es)

Our mission is to bridge the gap between in vitro biomedical research and in vivo preclinical and clinical imaging, providing novel molecular imaging biomarkers and imaging probes to gain information about physiology and pathology in vivo. We offer a core facility to provide opportunities for in vivo molecular imaging based on PET, SPECT and CT technologies.



### ***The Animal Experimentation Unit***

**Francisco Campos Pérez**

*francisco.campos.perez@sergas.es*

The Animal Experimentation Unit provides support in biomedical research with several animal models for IDIS research groups, in strictly controlled sanitary and environmental conditions. The Animal Experimentation Unit is accredited by the Ministry of Rural Environment of the Xunta de Galicia. It has rat and mouse housing facilities, surgery rooms and specialized qualified personnel, in accordance with current regulations. It also has an Ethics Committee on Animal Experimentation. It obtained the corresponding accreditation as an Authorized Body to carry out the evaluation of projects from a scientific or educational point of view.

It is responsible for advice on issues related to animal welfare, review of internal operational processes, issuance of reports and monitoring of projects. Its objective is to promote research, and to develop and implement biomedical training, providing professionals with the necessary resources for the development of these initiatives.

### ***Confocal Microscopy***

**Marta Picado Barreiro**

*marta.picado.barreiro@sergas.es*

The confocal scanning microscope is well-known for its ability to perform optical sectioning: a thin plane or section within a thick turbid medium is non-invasively imaged with high resolution and contrast. Real-time in vivo confocal fluorescence microscopy. Nuclear, cellular and morphologic detail is imaged in living intact tissue without having to excise physically and prepare thin sections or cultures.


The services include the infrastructure and specialised staff to perform analysis as...

- 3D imaging reconstruction
- Multiple labeling
- Colocalization
- In vivo fluorescence imaging







The background is a solid dark blue. It features several concentric circles of varying radii, some centered on the left and some on the right. A large, dark blue number '7' is positioned on the left side, partially overlapping the circles. The text 'COMPETITIVE FUNDING' is centered in the middle of the image in a white, sans-serif font.

# COMPETITIVE FUNDING



During 2019, **32.208.340,34 €** were raised in the following concepts: projects, human resources, transfer, donations, contracts, infrastructures, provision of services, agreements and studies.

TOTAL

**32.208.340,34 €**

**92**

Projects

**16.616.679,97 €**

**276**

Donations

**800.319,10 €**

**65**

Human resources

**5.188.076,76 €**

**532**

Contracts and  
provision of services

**4.653.285,12 €**

**212**

Studies (Clinical Trials,  
Observational Studies)

**3.912.071,83 €**

**5**

Transfer

**8.951 €**

**5**

Infrastructures

**1.028.956,56 €**



**92** PROJECTS

**16.616.679 €**

**7.583.154 €**

**15**

International projects

**7.142.669 €**

**57**

National projects

**1.890.858 €**

**20**

Regional projects



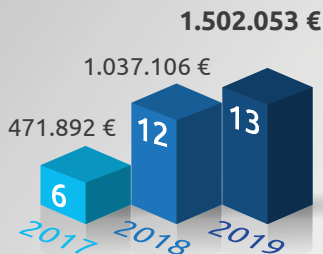
65 Human resources  
**5.188.076,76 €**

CONCEPT	NUMBER	AMOUNT
Postdoctoral Grant	9	<b>1.068.120 €</b>
Juan de la Cierva	3	<b>261.000 €</b>
Talento Senior	1	<b>64.000 €</b>
Technical Assistant PTA Grant	4	<b>144.000 €</b>
Predoctoral Grant	13	<b>905.574 €</b>
Garantía Juvenil	3	<b>117.600 €</b>
Marie S. Curie	1	<b>172.932 €</b>
Miguel Servet (I/II)	2	<b>377.500 €</b>
PFIS / iPFIS	4	<b>412.000 €</b>
Río Hortega	2	<b>107.464 €</b>
FPI	5	<b>463.750 €</b>
FPU	8	<b>673.826 €</b>
IDIS Predoctoral Grant	6	<b>396.000 €</b>
Stays Grant	3	<b>24.311 €</b>

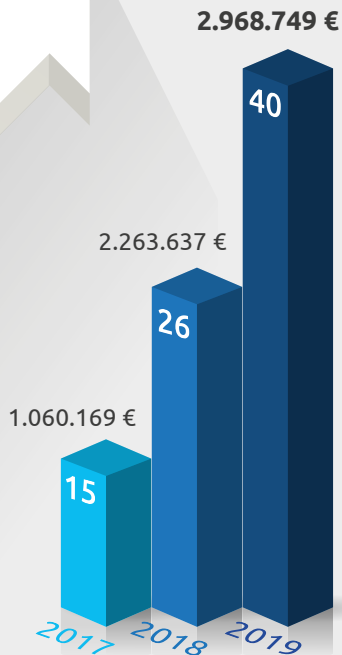


2017  
40 Human resources  
3.418.075 €

2019  
65 Human resources  
5.188.076 €



Postdoctoral Grant



Predocctoral Grant







The background is a solid dark blue. It features several concentric circles of varying radii and colors, ranging from a very light blue to a medium blue. A large, dark blue number '8' is positioned on the left side of the image. The text 'STRATEGIC ALLIANCES' is centered in the middle of the image in a white, sans-serif font.

# STRATEGIC ALLIANCES



## PLATFORMS

3

RNBB. BIOBANK Network

ITEMAS ISCIII. Innovation in Medical and Health Technologies

SCREN. Spanish Clinical Research Network ISCIII

**Red Biobancos**  
Instituto de Salud Carlos III

**ítemas isciíi**



Spanish  
Clinical  
Research  
Network  
ISCIII

BIOMEDICAL  
RESEARCH  
NETWORKING  
CENTRES

6

## CIBER

CIBEROBN (1),  
Physiopathology of Obesity and Nutrition

CIBERER, Rare Diseases

CIBERESP, Public Health and Epidemiology

CIBERCV: Cardiovascular Diseases

CIBERONC: Cancer

CIBER CIBERNED: Neurodegenerative Diseases

*cíberobn*

*cíberer*

*cíberesp*

*cíbercv isciíi*

*cíberonc isciíi*

(1) Scientific Direction IDIS



### RETICS

6

INVICTUS (1), Cerebrovascular diseases (stroke)

OFTARED, Eye Diseases

REDIAPP, Research Network on Preventive Activities and Health Promotion in Primary Care

RIER, Rheumatic Diseases

REDINREN, Kidney Diseases

TerCELL. Cell Therapy Network

NETWORKS FOR  
COOPERATIVE  
RESEARCH IN  
HEALTH

(1) Scientific Direction IDIS

INVICTUS

OFTARED  
RETICS Patología Ocular

REDIAPP

RIER

REDINREN

TerCel | isciiii

2

### OTHERS

EATRIS  
European Infrastructure for  
Translational Research

EMIR

EUROPEAN INSTITUTE  
FOR BIOMEDICAL  
IMAGING RESEARCH





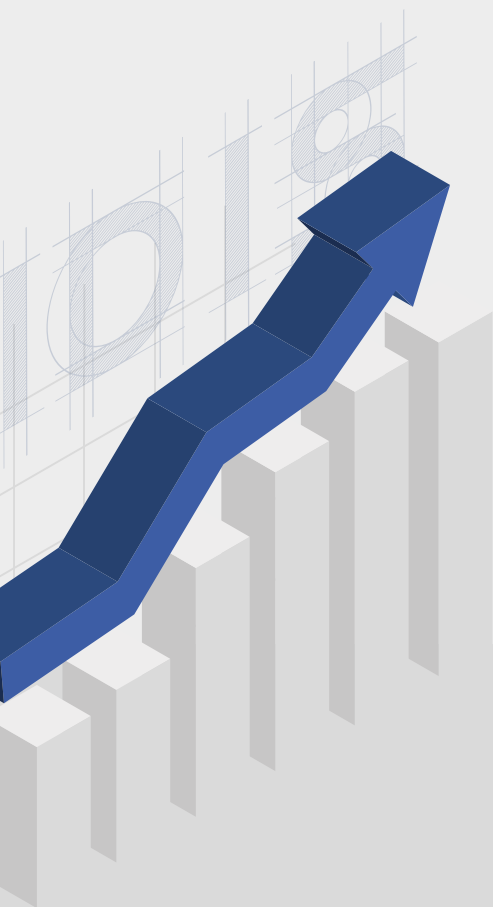


The background is a solid dark blue color. It features several concentric circles and arcs in a lighter shade of blue, creating a sense of depth and movement. There are also thin, straight lines and small white dots scattered across the background, adding to the abstract design.

9

AREAS





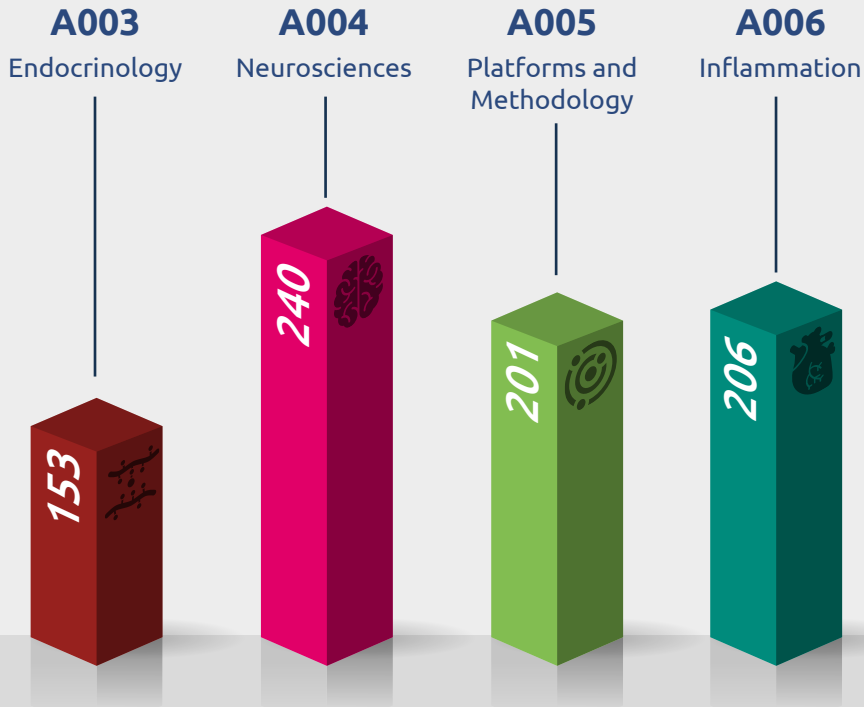
**A001**  
Oncology



**A002**  
Genetics and  
Systems Biology







PEOPLE

**1.280**are integrated  
in **94 groups****6** RESEARCH AREAS



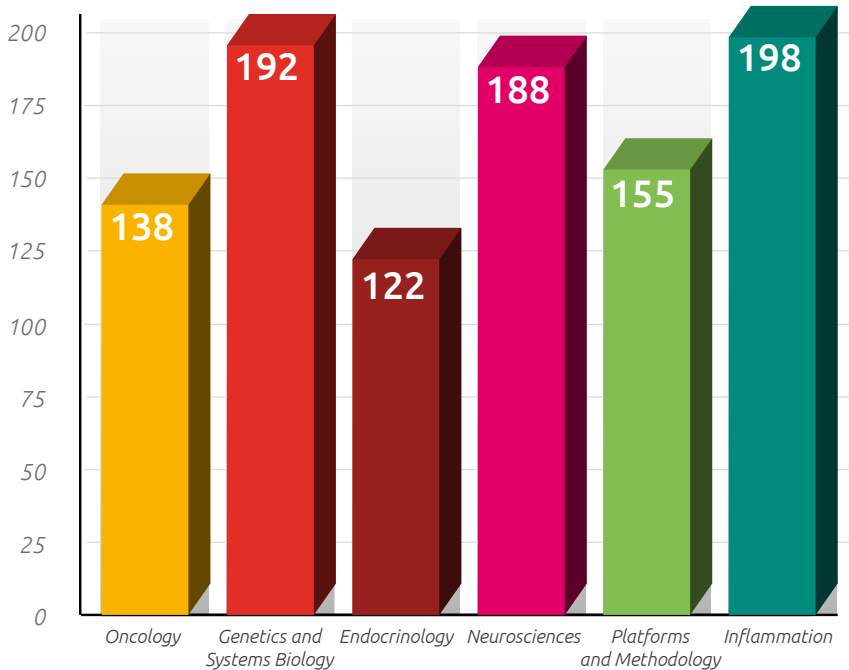


846

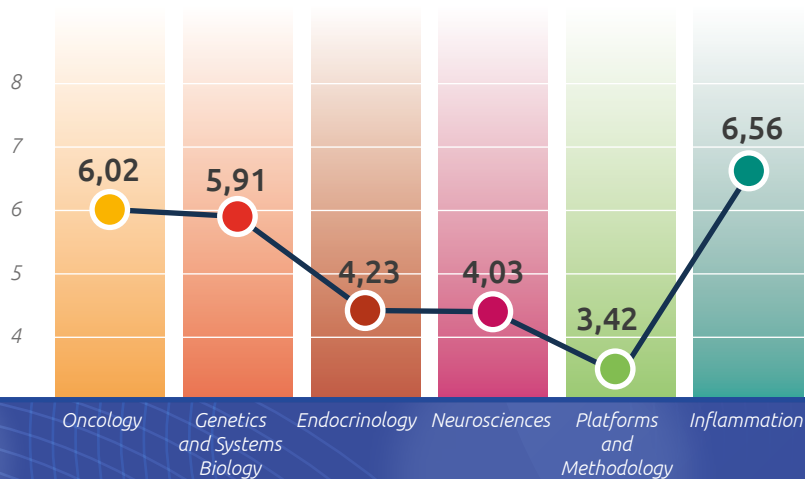
Publications



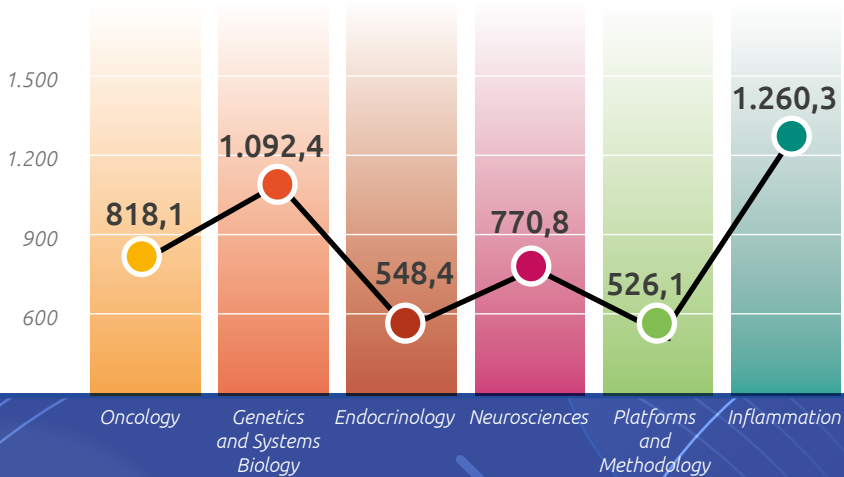
## Publications in 2019





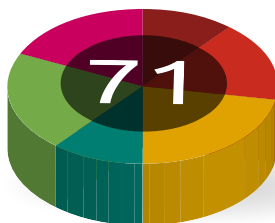




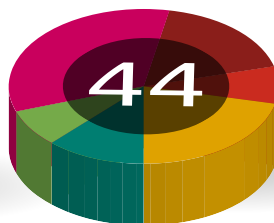


$$\Sigma f_i$$

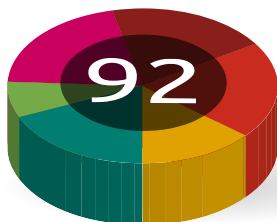




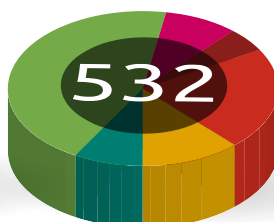
Thesis



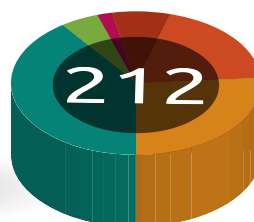
Patents



Projects  
16.616.679,97 €



Contracts  
4.653.285,12 €



Clinical Trials  
3.912.071,83 €

Oncology

Endocrinology

Platforms and  
Methodology

Genetics and  
Systems Biology

Neurosciences

Inflammation











## ANNUAL REPORT **2019**





XUNTA DE GALICIA  
CONSELLERÍA DE SANIDADE