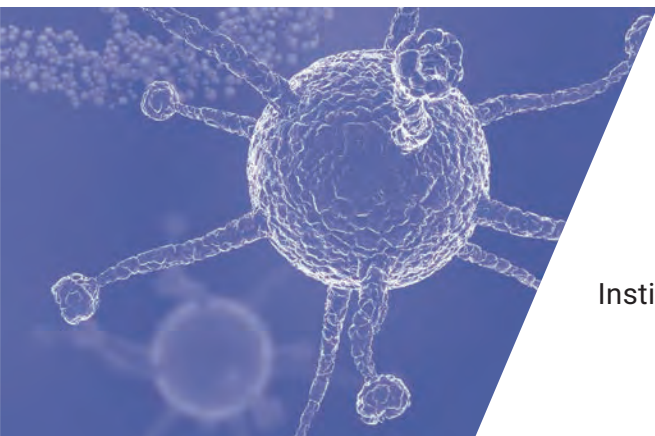


Annual Scientific Report 2019



Instituto de Investigación Sanitaria
Gregorio Marañón

Executive Summary

SCIENTIFIC REPORT

2019



Instituto de Investigación Sanitaria
Gregorio Marañón



**Hospital General Universitario
Gregorio Marañón**



**FUNDACIÓN INVESTIGACIÓN BIOMÉDICA
HOSPITAL GREGORIO MARAÑÓN**



CONSEJERÍA DE SANIDAD

Comunidad de Madrid

Dirección General de Investigación,
Formación e Infraestructuras Sanitarias



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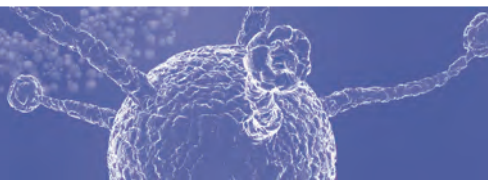


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Presentation



PRESENTATION



It is with great satisfaction that we present the 2019 Scientific Report of the **Health Research Institute of the Hospital General Universitario Gregorio Marañón (IiSGM)** in an exercise of dissemination of the activity carried out with the aim of, on the one hand, exposing before institutions and social agents the research and innovative capacity of the IiSGM and, on the other hand, and in a particularly relevant way, to recognize the **extraordinary effort made by the researchers** of each Research Group. This year it is especially important to highlight and thank the dedication of all the members of our institution in the extraordinarily adverse and complex circumstances that have resulted from the COVID pandemic.

The important research activity developed has allowed a significant growth (close to 20% with respect to the previous year) of the scientific production of the Institute, which has meant in the year 2019 to reach **4750 points of impact factor**. It is important to highlight the extreme rigor with which the awarding of publications to the IiSGM is analyzed, which clearly determines the robustness of the indicator. Additionally, of note are the significant number of publications (46%) led by IiSGM researchers, the degree of international collaboration in different publications and the proportion of originals in journals of first decile and quartile (46%).

In a similar way, the **innovation activity of the IiSGM** should be highlighted, which allows it to boast a portfolio of innovation assets, including a brand new «spin-off», adapted to the current needs of the health system and, above all, with great potential for future growth and highly attractive to the productive and industrial sector.

All this activity is possible thanks to the excellent capacity of the researchers to **compete effectively in competitive calls** for projects and human resources. This last aspect is especially noteworthy, since it is the basis for ensuring the generational replacement of the center's researchers. In this context, it is

important to highlight the commitment of the liSGM groups with the **training of researchers**, which has resulted in a significant number of doctoral theses defended throughout 2019 and the ambitious Researcher Training Plan (with 13 accredited courses) that is being developed under the coordination of the liSGM **Training Commission**.

The liSGM, through its managing body, the **Foundation for Biomedical Research Hospital Gregorio Marañón (FIBHGM)**, makes a continuous effort to improve its internal **management processes** and is committed to a **continuous quality improvement**, as a result of which it has recently achieved the European seal of excellence in human resources management «**Human Resources Strategy For Researchers**» (HRS4R), as well as becoming the **first Health Research Institute to be fully certified under ISO9001:2015** in the country.

Once again, we take the opportunity offered by this platform to express our sincere thanks to all the **liSGM researchers** for their efforts in a context as sensitive as that represented by scientific research in hospitals. Only a cohesive collective effort, duly aligned with a strategy around the improvement of patient health, provides the excellent results that are collected in this report. In the same way, it is important to thank all the **Area Coordinators, Group Leaders, Research Groups, Research Support Services (RSS), Clinical Services and especially the young researchers**, who are the basis of the development and activity of the liSGM.

The situation reflected in this report shows that our Institution maintains its evolution and growth, generating excellent expectations for the future and placing it in a privileged position to face the enormous future challenges that are in sight, to ensure not only compliance with the requirements of the new **Technical Guidelines for the Evaluation of Accreditation of Health Research Institutes** of the Carlos III Institute of Health, but especially to illuminate the foundations of biomedical research: observation, which generates questions, in clinical practice followed by a multidisciplinary cooperative research to answer them.

Thank you very much.

Dr. Ismael Buño Borde

Scientific Director Managing Director

Dr. Joseba Barroeta Urquiza

liSGM Hospital General Universitario Gregorio Marañón



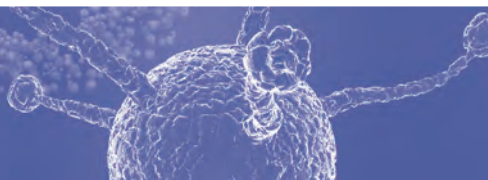
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Introduction



INTRODUCTION



MISSION

IiSGM is an institution that aims to carry out the highest quality cooperative translational research for generation of knowledge and fast application of advances in care practice and that contributes to the training of researchers.

All in all, to favor the efficiency of the National Health System by providing added value.

VISION

IiSGM must position itself as a leading center in biomedical investigation and technological and scientific innovation at both National and international level through quality groundbreaking cooperative multidisciplinary activity by generating innovative and efficient responses to the main challenges facing the public health.

VALUES

Ethics, leadership competitiveness, commitment, excellence, and innovation.

The **Health Research Institute of the Hospital General Universitario Gregorio Marañón (IiSGM)** is made up of the following bodies:

- Servicio Madrileño de Salud (SERMAS [Madrid Health Service]) through Hospital Universitario Gregorio Marañón, which is the basic core of the Institute, and groups from primary care in the hospital's catchment area.
- Universidad Complutense de Madrid (UCM).
- Universidad Carlos III de Madrid (UCIII MADRID).

- Fundación para la investigación biomédica del Hospital Gregorio Marañón (FIBHGM [Foundation for Biomedical Research Hospital Gregorio Marañón]) as the management body.
- Dirección General de Investigación, Formación e Infraestructuras Sanitarias (General Directorate for Research, Training, and Health Infrastructure) of the Consejería de Sanidad de la Comunidad de Madrid (Health Council of the Autonomous Community of Madrid).

Bodies that constitute the Institute of Health Research in Hospital Gregorio Marañón (IiSGM):



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Executive summary



Global Analysis



Analysis of the scientific production of liSGM and its bibliometric impact is an essential element in the evaluation of the Institute's research activity, given that both factors reflect the competitiveness of its researchers

In order to prepare this Scientific Report, we analyzed journals indexed in the **Web of Science** and in **PubMed**, an open-access database specialized in health sciences.

It is important to note that before being assigned to the different research Areas and Groups, the only publications considered were those in which liSGM, Hospital General Universitario Gregorio Marañón, or both were included in the institutional affiliation data in Web of Science. Nevertheless, as a somewhat novel aspect of this new edition and thanks to the recent implementation of the scientific management tool Fund@net, the search for publications is made based on the name(s) that the individual researcher at the liSGM has pointed out as being his/her own.

As in previous years, the total sum for the impact factor only takes into account information from indexed publications (eg, original articles, reviews, editorials, and proceedings papers) and **excludes** other types of publication (eg, letters to the editor and case reports). Of note, the impact factor presented in the figures corresponds to the relevant year of publication

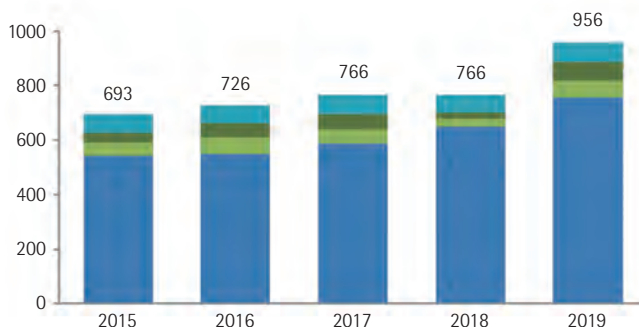
Publications involving different groups or areas of the liSGM are counted individually in each group and area, although only once for the calculation of the total impact factor.

The objective of the methodology used is none other than to apply internationally validated bibliometric tools for the analysis of scientific production, thus ensuring the robustness of the data contained in this Scientific Report.

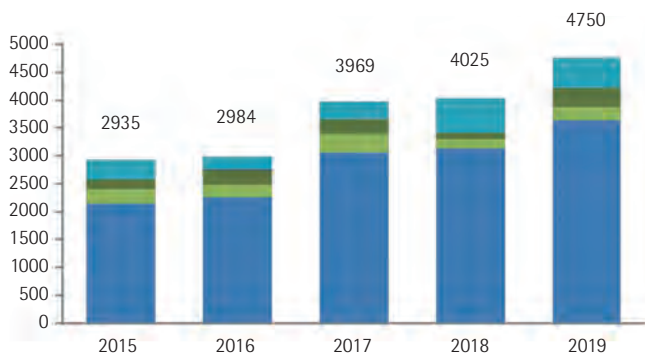
The following graphs provide a quantitative representation of the scientific output of liSGM during the year 2019.

The graphs show strong consolidation of the growth trend observed in recent years, with a total of **956 indexed publications** (884 excluding letters), which represent a **global impact factor over 4750 points** [4210 excluding letters], that is, **an increase of 1815 points** since 2015, as well as **an increase of 725 points** with respect to the previous year and **61,8% in the last 5 years**.

**Scientific output of IISGM in indexed journals
with impact factor: number of publications by type of publication**



Scientific output of IISGM: total impact factor by type of publication



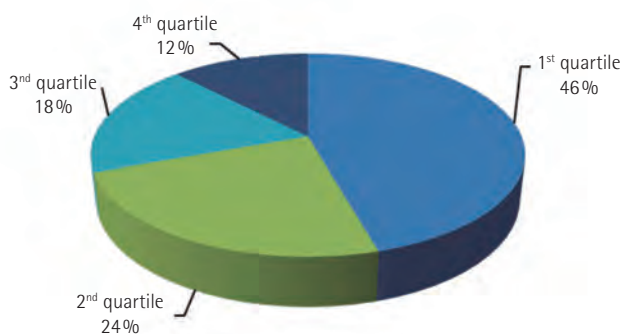
Letter	365	235	314	606	540
Proceedings Paper		5			
Review	170	272	254	118	329
Editorial Material	258	217	350	171	246
Article	2142	2257	3051	3130	3636
Total general	2935	2984	3969	4025	4750



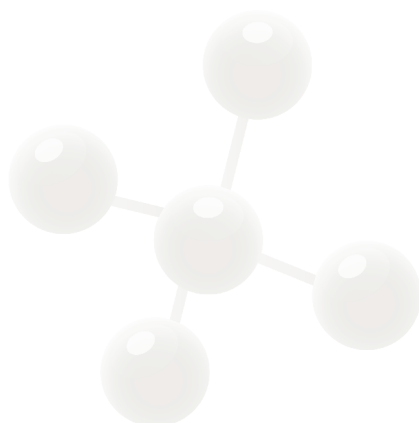
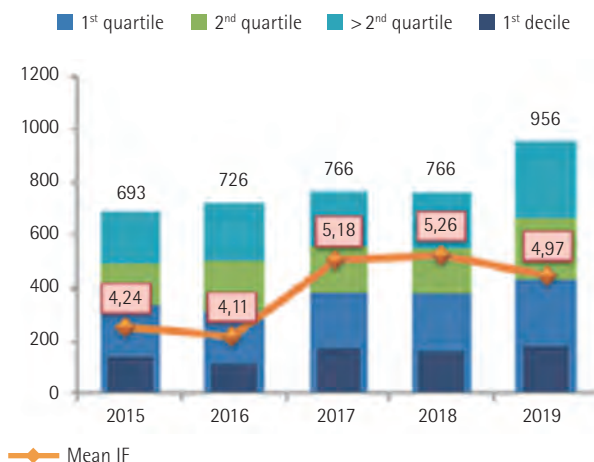
The previous figures summarize the total impact factor corresponding to the scientific production of the liSGM for each of the last 5 years and its distribution according to the different types of publication.

As can be observed, in this year 2019 the highest impact factor corresponds (in order) to: original articles, review and editorials. It is important to note that, once again this year, the increase in the overall impact factor was mainly due to the increase in the number of original articles.

Scientific output of liSGM in indexed journals with impact factor: distribution by quartiles (relative to 2019)

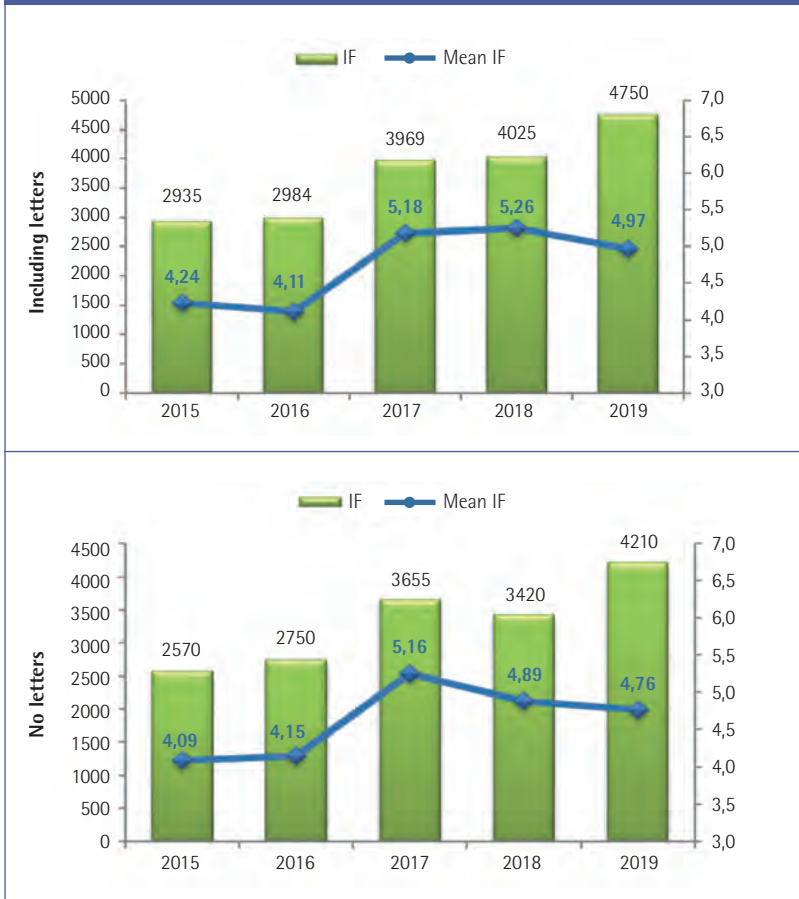


**Scientific output of liSGM in indexed journals with impact factor:
distribution of publications by deciles and quartiles (absolute values)**

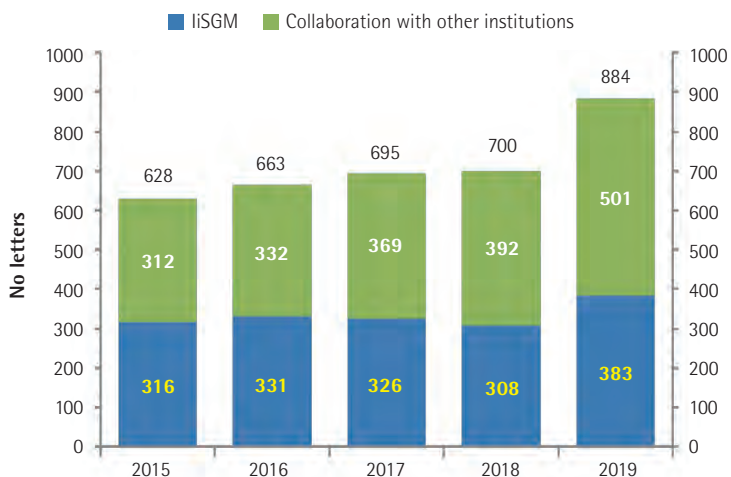
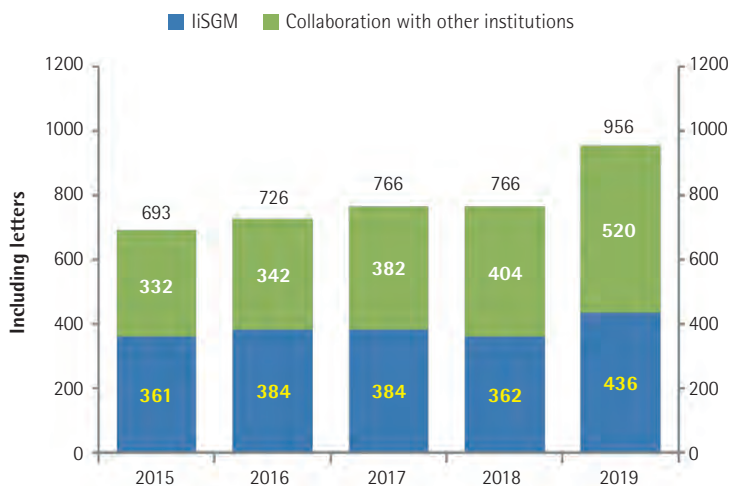


The distribution of liSGM publications according to quartile and decile is shown in the previous-figures. The absolute number of first-decile and first quartile publications continues to be greater than last year.

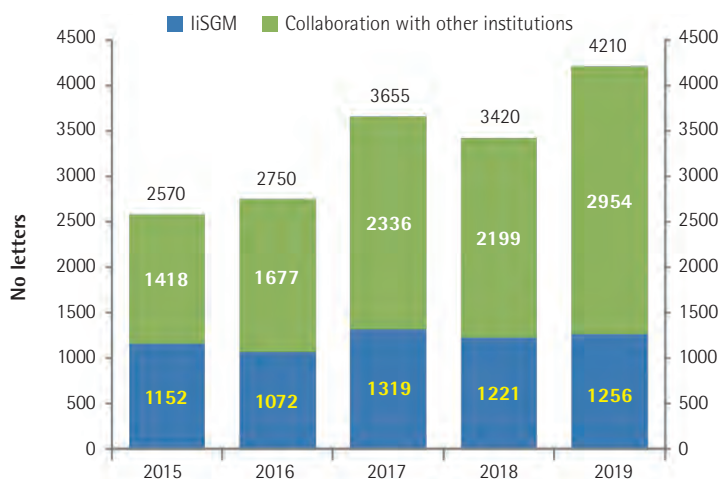
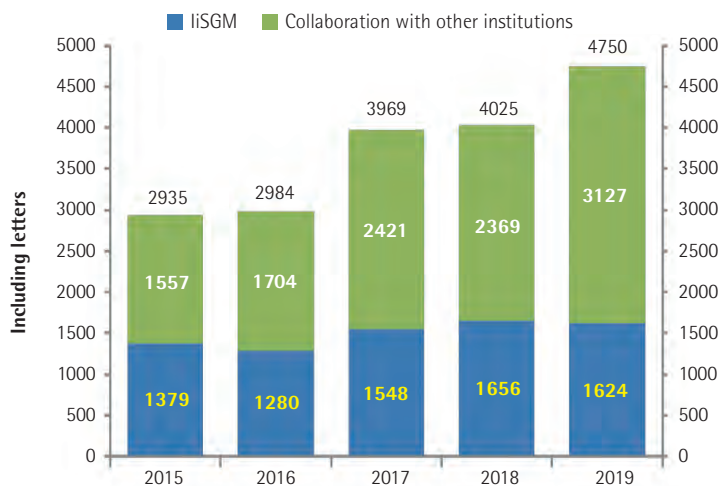
Global impact factor and mean impact factor by publication



Scientific output of IISGM in indexed journals with impact factor: total number of publications



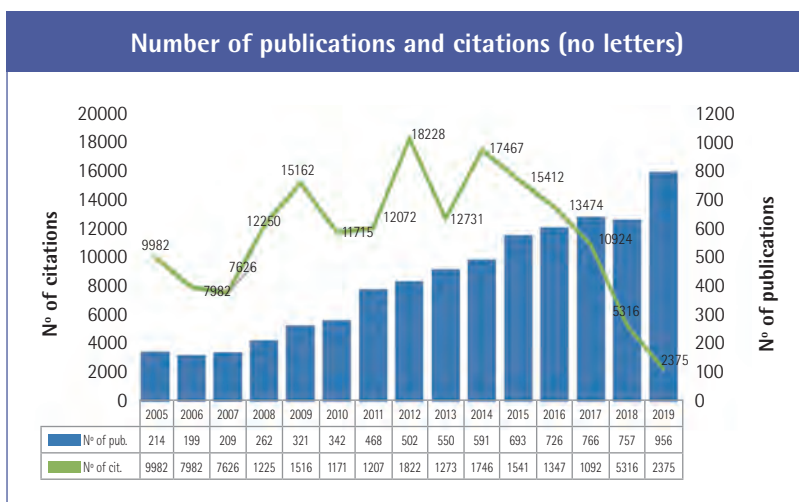
Scientific output of liSGM in indexed journals with impact factor: impact factor



The analysis of activity specifically includes publications whose principal authors (first, last, or corresponding author) are liSGM researchers.

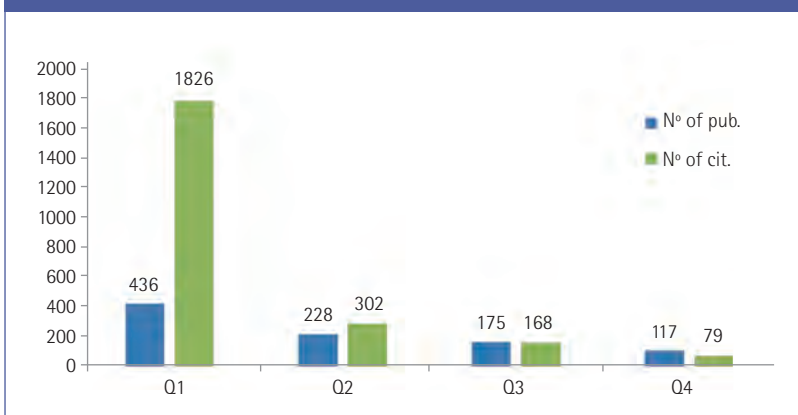
As for collaborative scientific output:

1. With letters: **54.4% of publications** and **65.8% of the impact factor** are accounted for by articles **generated in cooperation with other institutions**. Approximately **45.6% of the scientific output of liSGM** is accounted for by articles whose **main authors belong to the liSGM**.
2. Without letters: **56.7% of publications** and **70.2% of the impact factor** are accounted for by articles **generated in cooperation with other institutions**. Approximately **43.3% of the scientific output of liSGM** is accounted for by articles whose **main authors belong to the Institute**.



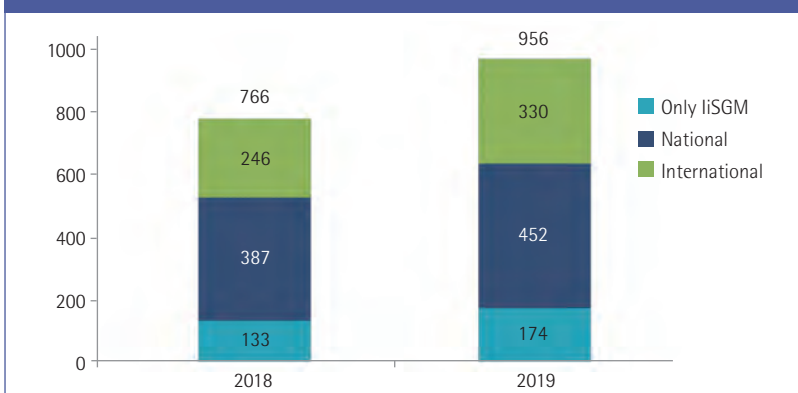
The number of citations for Institute publications over time is logically greater in older publications, although the number of citations is noteworthy, as is the number of first-quartile citations.

Number of publications and citations by quartile



It is important to highlight the number of collaborations between the IISGM research groups with other national and international research groups and their evolution over time: **34.52%** of the scientific output of the IISGM is in **collaboration with other international research groups**. **47.28%** with **other Spanish groups** and the rest (**18.2%**) are **IISGM's own publications**.

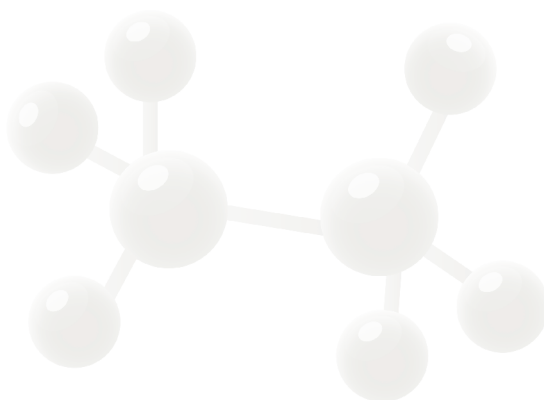
Scientific production of IISGM in indexed journals with impact factor: number of publications



Finally, one of the most relevant elements within the scientific structure of health research institutes is the grouping of research activity to priority areas, which are characterized by their scientific and social relevance and by their capacity for transferring knowledge to society.

liSGM has **seven priority research areas** and also a specific research group on Nursing Care whose scientific activity is set out in detail below in 2 figures per Research Area:

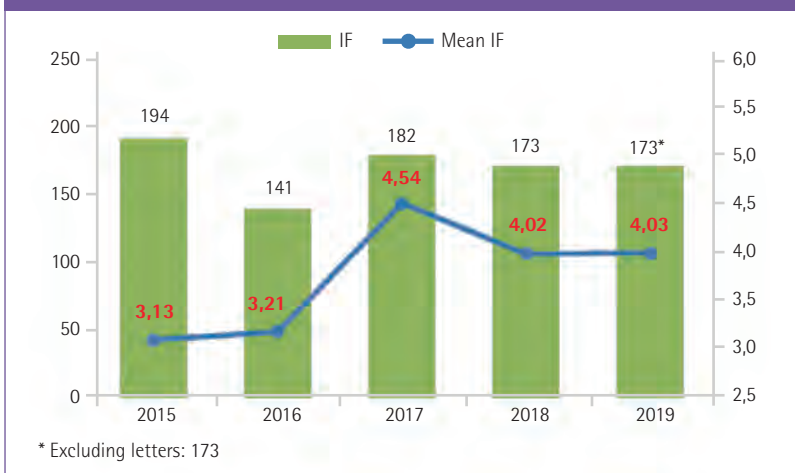
- The first (on the left) summarizes the total impact factor together with the mean impact factor by publication.
- The second (on the right) summarizes the scientific output of the research area distributed by first decile and quartiles.



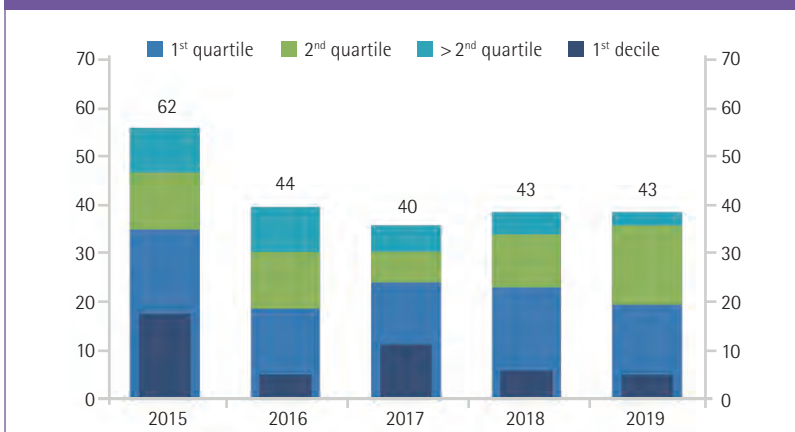
Both figures show the scientific output for the last 5 years:

AREA 1: BIOMEDICAL ENGINEERING

Scientific production of Area 1 in indexed journals with impact factor: total and mean impact factor

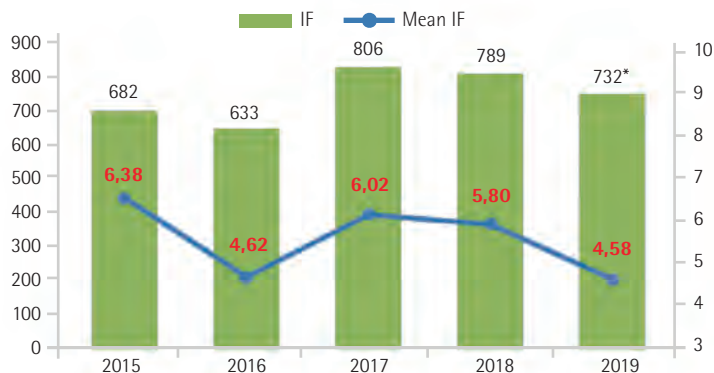


Scientific output of Area 1 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



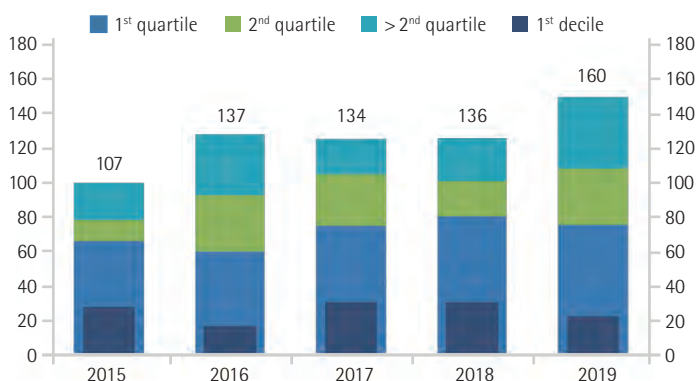
AREA 2: CARDIOVASCULAR DISEASES

Scientific production of Area 2 in indexed journals with impact factor: total and mean impact factor



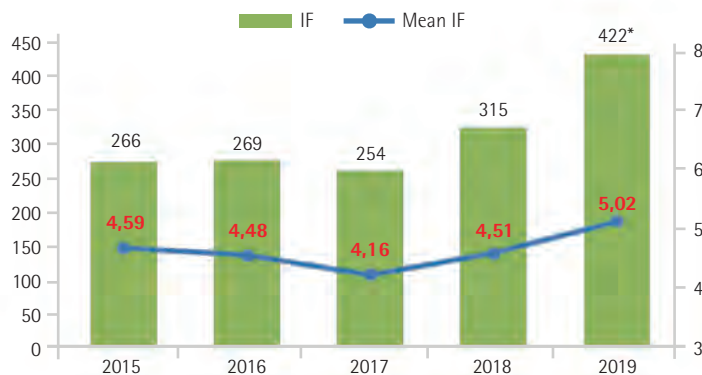
* Excluding letters: 630

Scientific output of Area 2 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



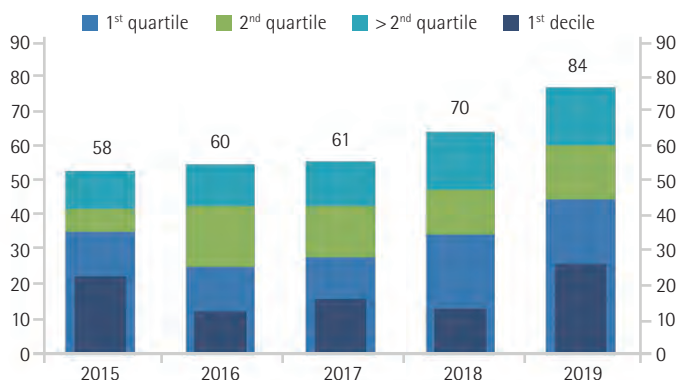
AREA 3: NEUROSCIENCE AND MENTAL HEALTH

Scientific production of Area 3 in indexed journals with impact factor: total and mean impact factor



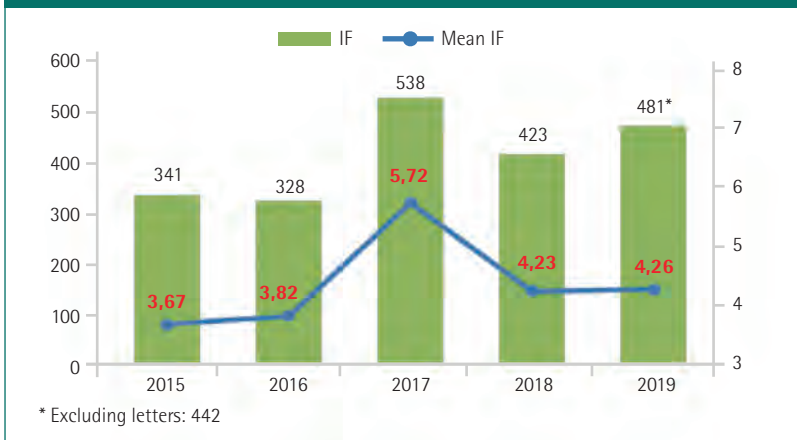
* Excluding letters: 400

Scientific output of Area 3 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)

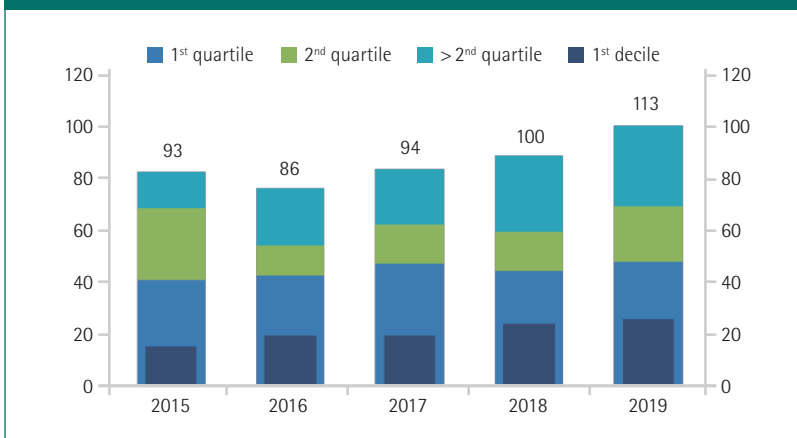


AREA 4: CLINICAL MICROBIOLOGY, INFECTIOUS DISEASES AND AIDS

Scientific production of Area 4 in indexed journals with impact factor: total and mean impact factor

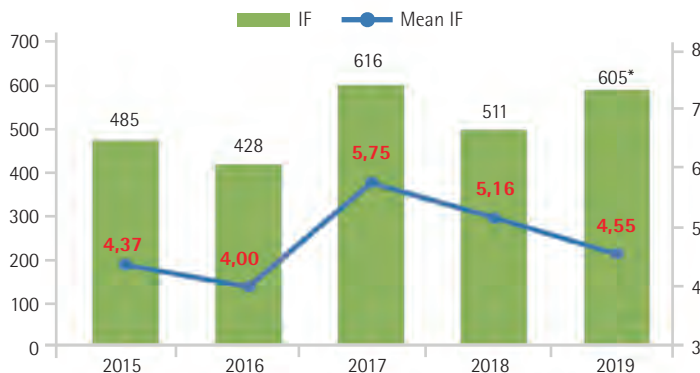


Scientific output of Area 4 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



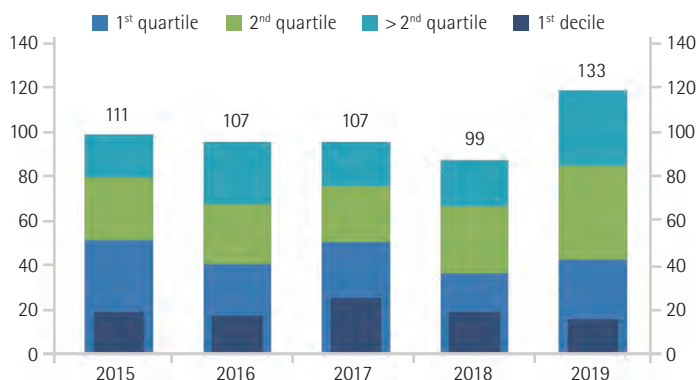
AREA 5: DISEASES OF THE IMMUNE SYSTEM

Scientific production of Area 5 in indexed journals with impact factor: total and mean impact factor



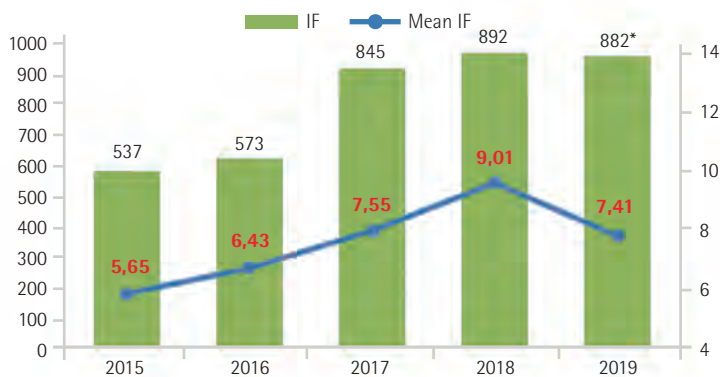
* Excluding letters: 502

Scientific output of Area 5 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



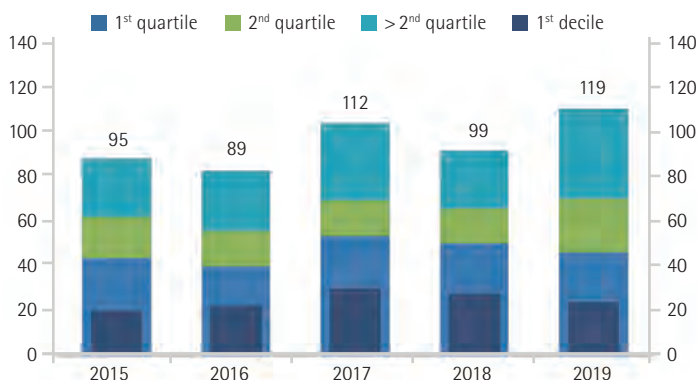
AREA 6: TRANSLATIONAL ONCOLOGY

Scientific production of Area 6 in indexed journals with impact factor: total and mean impact factor



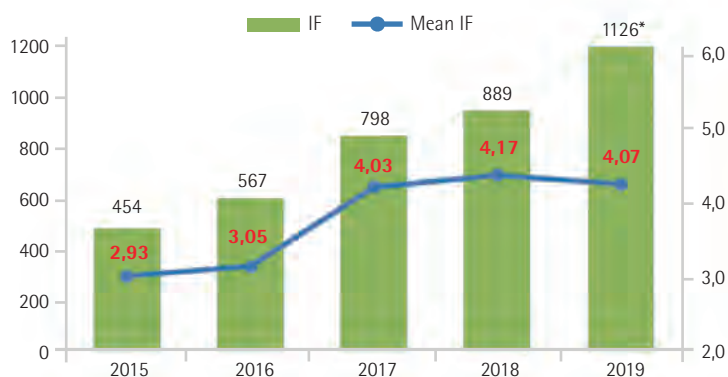
* Excluding letters: 841

Scientific output of Area 6 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



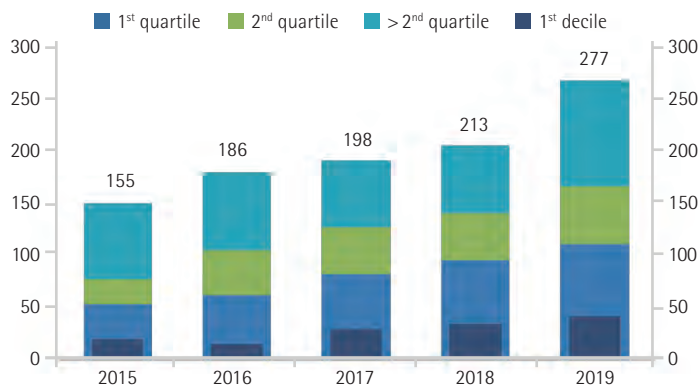
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION

Scientific production of Area 7 in indexed journals
with impact factor: total and mean impact factor



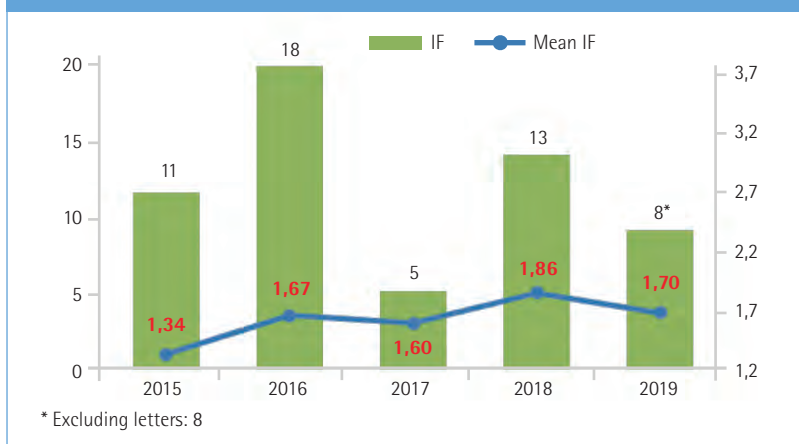
* Excluding letters: 1014

Scientific output of Area 7 in indexed journals with impact factor:
distribution of publications by decile and quartile (absolute values)

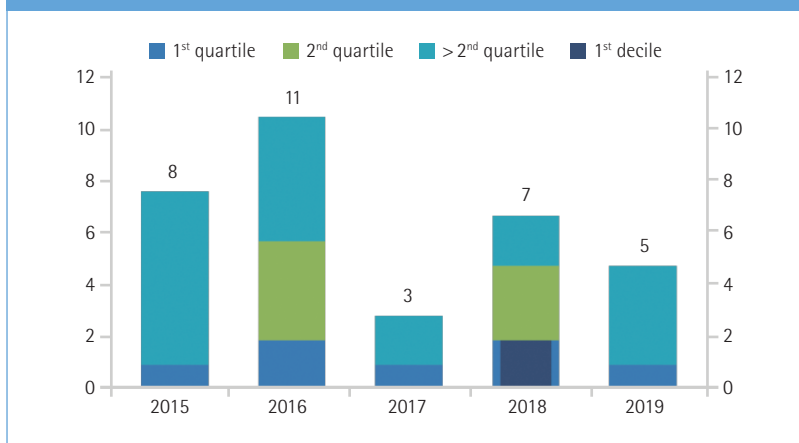


NURSING RESEARCH GROUP

Scientific production of Nursing Group in indexed journals with impact factor: total and mean impact factor

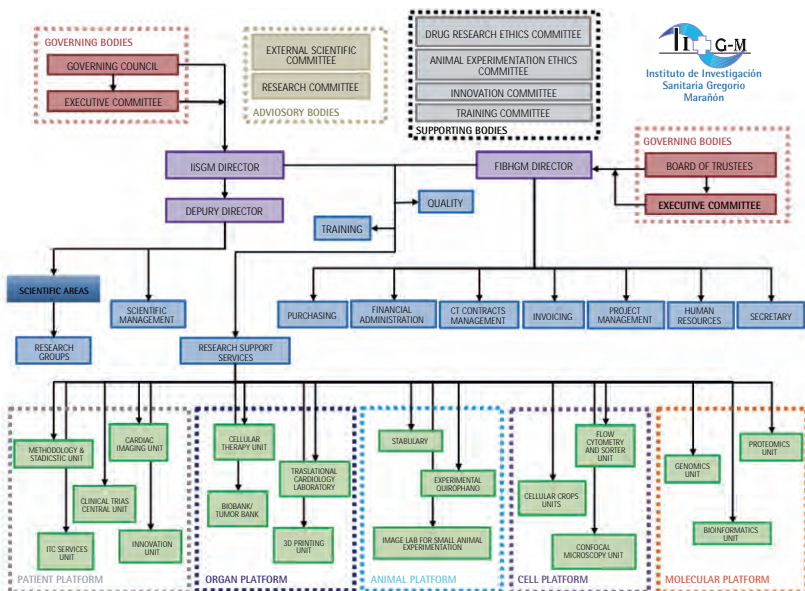


Scientific output of Nursing Group in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



Organizational Structure of IISGM

1. ORGANIZATION CHART



Structure of research areas and groups

STRUCTURE OF RESEARCH AREAS AND GROUPS

AREA 1: Biomedical Engineering

Coordinator: *Manuel Desco Menéndez*

Group	Group leader	Type of Group	Organization
1.01 Advanced technological applications and human health	Manuel Desco Menéndez	CONSOLIDATED	HGUGM-UC3M
1.02 Signal processing	Antonio Artés Rodríguez	CONSOLIDATED (in the proces of integration)	UC3M
1.03 Computer architecture, communications, and systems: ARCOS	Jesús Carretero Pérez	CONSOLIDATED (in the proces of integration)	UC3M
1.04 Nonparametric statistics and intensive computing	Juan Romo Urróz	CONSOLIDATED (in the proces of integration)	UC3M

AREA 2: Cardiovascular diseases

Coordinator: *Francisco Fernández-Avilés Díaz*

Group	Group leader	Type of Group	Organization
2.01 Natural history of heart disease	Francisco Fernández-Avilés Díaz	CONSOLIDATED	HGUGM-UCM
2.02 Cardiovascular pathophysiology	Victoria Cachofeiro Ramos	CONSOLIDATED	UCM
2.03 Cardiac celular electrophysiology	Eva Delpón Mosquera	CONSOLIDATED	UCM
2.05 Cardiology and heart transplantation in infants	Constancio Medrano López	EMERGING	HGUGM
2.06 Blood lipids and cardiovascular risk	Luis Antonio Álvarez-Sala Walther	EMERGING	HGUGM-UCM
2.07 Acute cerebral ischemia. Stroke	Antonio Gil Núñez	EMERGING	HGUGM

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UC3M: Universidad Carlos III.

AREA 3: Neuroscience and Mental Health

Coordinator: *Celso Arango López*

Group	Group leader	Type of Group	Organization
3.01 Neurobiological and psychological bases of mental disorders. Disorders of neurodevelopment	Celso Arango López	CONSOLIDATED	HGUGM-UCM
3.03B Neurological diseases	Francisco Javier Grandas Pérez	EMERGING	HGUGM

AREA 4: Clinical Microbiology, Infectious Diseases and AIDS

Coordinator: *Patricia Muñoz García de Paredes*

Group	Group leader	Type of Group	Organization
4.01 Infectious diseases	Patricia Muñoz García de Paredes	CONSOLIDATED	HGUGM-UCM
4.02 Clinical and epidemiological aspects of HIV infection and associated conditions	Juan Berenguer Berenguer	CONSOLIDATED	HGUGM

AREA 5: Diseases of the Immune System

Coordinator: *Eduardo Fernández-Cruz Pérez*

Group	Group leader	Type of Group	Organization
5.01 Pathophysiology and clinical research into chronic inflammatory and immunological diseases	Eduardo Fernández-Cruz Pérez	CONSOLIDATED	HGUGM
5.02 Molecular biology of HIV	M ^a Ángeles Muñoz Fernández	CONSOLIDATED	HGUGM
5.03 Systemic autoimmune diseases	José María Álvaro Gracia	CONSOLIDATED	HGUGM
5.05 Pathogenesis of the immunoallergic response	José Manuel Zubeldia Ortuño	EMERGING	HGUGM
5.06 Immune regulation and homeostasis in diseases of the immune system	Rafael Correa Rocha	EMERGING	HGUGM
5.07 Infections in pediatric patients	María Luisa Navarro Gómez	CONSOLIDATED	HGUGM

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UC3M: Universidad Carlos III.

AREA 6: Translational Oncology**Coordinator:** *Miguel Martín Jiménez*

Group	Group leader	Type of Group	Organization
6.01 Interdisciplinary oncology and biotechnology	Felipe Ángel Calvo Manuel	CONSOLIDATED	HGUGM-UCM
6.02 Translational medical oncology and personalized cancer therapy	Miguel Martín Jiménez	CONSOLIDATED	HGUGM-UCM
6.03 Genetics and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation	José Luis Díez Martín/ Ismael Buño Borde	CONSOLIDATED	HGUGM
6.04 Surgical oncology	Luis González Bayón	EMERGING	HGUGM

AREA 7: Systemic Diseases and Organ Transplantation**Coordinator:** *Rafael Bañares Cañizares*

Group	Group leader	Type of Group	Organization
7.01 Vascular damage and inflammation in chronic kidney disease, dialysis, and kidney transplantation. Pathophysiology of the kidney	Marian Goicoechea Diezhandino	CONSOLIDATED	HGUGM
7.02 Pathophysiology and natural history of liver and digestive diseases	Rafael Bañares Cañizares	CONSOLIDATED	HGUGM-UCM
7.04 Diseases of the critically ill child	Jesús López-Herce Cid	CONSOLIDATED	HGUGM
7.05B Pathophysiology, outcome, and therapeutic strategies in chronic respiratory insufficiency and respiratory disorders of sleep	Luis Puente Maestu/Ignacio Garutti Martínez	CONSOLIDATED	HGUGM
7.06 Regenerative medicine in plastic surgery	José M ^a Lasso/Rosa Pérez Cano	EMERGING	HGUGM
7.07 Experimental kidney transplantation	Enrique Lledó García	EMERGING	HGUGM
7.08 Pediatric endocrinology	María Dolores Rodríguez Arnao	ASOCIATED	HGUGM

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UC3M: Universidad Carlos III.

STRUCTURE OF RESEARCH AREAS AND GROUPS

Group	Group leader	Type of Group	Organization
7.10 Regeneration and biomaterials in musculoskeletal disease	Francisco Javier Vaquero Martín	ASOCIADTED	HGUGM-UCM
7.11 Iron metabolism disorders	María Rosa Peraíta Adrados	ASOCIADTED	HGUGM
7.12 Emergency medicine	Javier Muñoz González	ASOCIADTED	HGUGM
7.16 Regenerative medicine and system development: cardiovascular and osteochondral	M ^a Begoña Quintana Villamandos	EMERGING	HGUGM
7.18 Peritransplant evaluation (liver)	José María Pérez Peña	ASOCIADO	HGUGM
7.19 Perianesthetic assessment	Carmen Fernández Riveira	ASOCIADTED	HGUGM
7.20 Anesthesia, toxins, and arrhythmias	Matilde Zaballos García	ASOCIADTED	HGUGM
7.21 Biopathology of aging	José Antonio Serra Rexach	CONSOLIDATED	HGUGM
7.22 Pathophysiology of the neonate and developing child	Manuel Sánchez Luna	EMERGING	HGUGM
7.25 Artificial circulation laboratory	Juan Francisco del Cañizo López	EMERGING	HGUGM-UCM
7.26 Evaluation of health services and clinical epidemiology	Rosa Plá Mestre	EMERGING	HGUGM
7.27 Hospital pharmacy and pharmacogenomics	María Sanjurjo Sáez	CONSOLIDATED	HGUGM
7.28 Clinical nutrition	Cristina Velasco Gimeno	EMERGING	HGUGM
7.29 Vascular pathophysiology and pharmacology	Francisco Pérez Vizcaino	CONSOLIDATED	UCM
7.31 Pathophysiology in women, pregnancy, labor, and puerperium	Santiago Lizarraga Bonelli & Juan Antonio deLeón	EMERGING	HGUGM
7.32 Physical medicine and rehabilitation	Pilar acrespo Cobo & Marta Supervía Pola	EMERGING	HGUGM

Nursing Research Group

Coordinator: Ana García Pozo

Group	Group leader	Organization
Research in nursing	Ana García Pozo	HGUGM

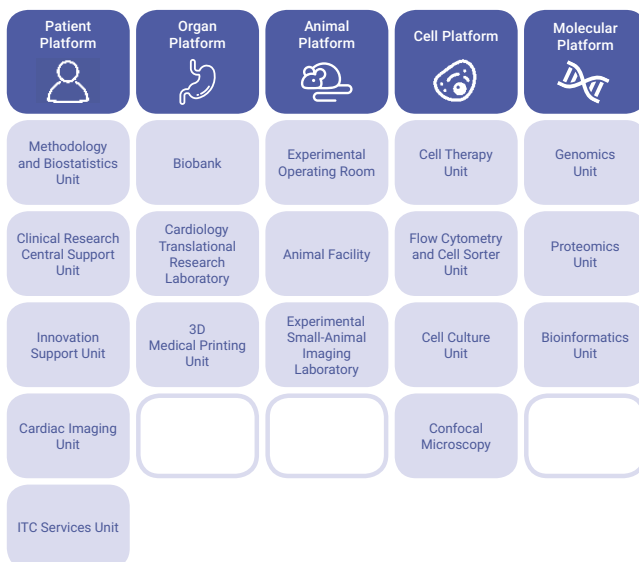
UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UC3M: Universidad Carlos III.

Research Support Services (RSSs)

liSGM has organized research support services into various technology platforms according to the object of research. Thus, liSGM aims to promote the human and technological interrelationships necessary when investigating the object of biomedical research from different technological perspectives.

Five platforms have been developed, as follows:

- 1. Patient platform.**
- 2. Organ platform.**
- 3. Animal platform.**
- 4. Cell platform.**
- 5. Molecular platform.**



Publications generated with the participation of the Research Support Services (RSSs)				
	RSS	Publications of the main WOS collection in journals indexed in the JCR with impact factor	Publications of the main WOS collection in journals without impact factor	Other publications
Patient Platform	Methodology and Biostatistics Unit	9		
	Cardiac Imaging Unit	39		4
	Cell Therapy Unit	2		
Organ Platform	Translational Cardiology Laboratory	29		4
	Biobank	28		
Animal Platform	Experimental operating room	1		
	Medical Imaging laboratory	19	5	
Cell Platform	Flow Cytometry and cell sorter Unit	28		
	Cell Culture Unit	2		
	Confocal Microscopy Unit	3		
Molecular Platform	Genomics Unit	5	1	
	Bioinformatics Unit	1	1	

Innovation, knowledge transfer, and translation to practice

INNOVATION SUPPORT UNIT

Innovation is a key element in the development of the research community, especially in the health care sector. liSGM's commitment to this activity is unwavering and has led to the creation of a structure aimed at providing researchers with a smooth path from the innovative idea to the development of the end product.

The objectives of the liSGM include encouraging and developing innovation within the organization by promoting the transfer of the results obtained by its professionals to society, the health system, the scientific community, and the financial system.

The Innovation Support Unit came into being from a powerful research and technological development group in the area of biomedical instrumentation and engineering at Hospital General Universitario Gregorio Marañón, with a solid record in transferring technology to the industrial sector.

The unit is structured in such a way that it provides channels for the ideas and proposals of professionals working at the hospital. Thus, the unit can support and advise researchers along the different stages of the innovation and transfer process, with the aim of turning their proposals into products and services that add value to the health system and society.

The purposes of the Innovation Support Unit include the following points:

- Providing the necessary support to professionals working at the hospital to help them innovate
- Bringing the culture of innovation and entrepreneurship closer to health/research professionals
- Establishing channels to enable appropriate training and information for professionals working in innovation
- Promoting and strengthening alliances between the Innovation Support Unit and the various agents of innovation, both with other management structures, as well as with companies and R&D organizations and the business fabric

- Acting as a bridge between the agents of innovation from outside the IISGM by offering ad hoc support services, both as interlocutors and as managers of innovation projects

In 2019, its structure was as follows:

- Head of unit: Manuel Desco Menéndez.
- Project manager: Beatriz Pérez.
- Innovation manager: Hugo De Navascués.
- Innovation manager: Eva Caravilla.
- Research manager: Trajana Garrido.
- Quality control technician: Elena Rodríguez.

Development and promotion of innovation is a specific area of the Strategic Plan of the IISGM.

In 2012, the Innovation Committee was set up to supervise and provide assistance in all areas associated with innovation. It provides regular analyses, studies, and follow-up of IISGM innovation projects and provides criteria and support to ensure appropriate implementation and development.

The members of the Innovation Committee cover the different professional profiles associated with the IISGM: researchers, physicians, managers, and personnel from other areas such as nursing, management/administration, and technical staff. The Innovation Committee is made up of the following members:

Steering Committee:

- Presidente: Dr. Ismael Buño (Director del IISGM).
- Vicepresidente: Dr. Manuel Desco (Director de la UAI).
- D. Thierry Bardinot (gerente de la FIBHGM)

Members:

- Dr. Francisco Fernández-Avilés Díaz (Jefe de Servicio de Cardiología).
- Dr. Rubén Pérez-Mañanes (Servicio de Cirugía Ortopédica y Traumática).
- Dra. Ana Herranz (Jefa de Sección de Farmacia Hospitalaria).
- Dr. Rafael Correa (Jefe de Grupo del Laboratorio de Inmunoregulación).
- Dr. Iván Márquez (Coordinador de la Unidad de Cáncer heredofamiliar).
- Dr. Guillermo Rodríguez (Especialista de Área en el Servicio de Anestesia y Reanimación).
- D. Carlos Blanco (Vicegerente de Investigación y Transferencia de la UC3M).
- Dra. Sonia García de San José (SubDirectora Gerente del HGUGM).
- *Secretaría:* Beatriz Pérez (Gestora de Proyectos de la UAI).

The identification and registration of the results of research to ensure that they are protected is key to promoting transfer and use of these results and the development of commercial technology-based projects.

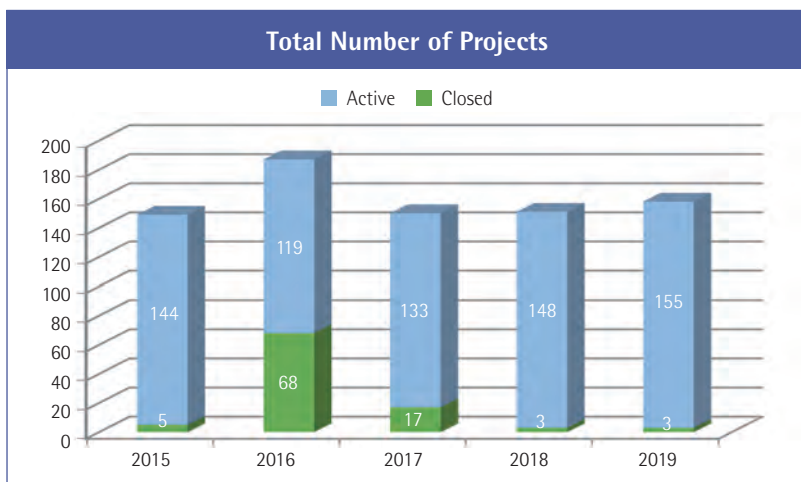
liSGM activity in innovation during 2019 can be seen in the following 3 main areas:

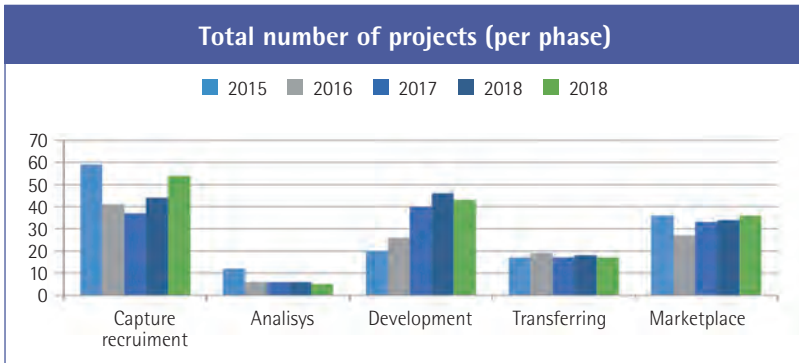
1. Intellectual and industrial property

- a) Patents applied for: 2 international patents, and 1 intellectual property registrations.
- b) Patents awarded: 1 national patent and 1 intellectual property registrations.
- c) Transfer of patents: 1 family of patents.

2. Innovation projects portfolio:

- a) During 2019, 22 new innovation projects were started in the unit. The year closed with 155 active projects. The following figures show the distribution. of projects classified by area and development phase over the last 5 years
- b) With respect to calls for innovation projects, liSGM has obtained more than 663,604 €.





3. Contracts:

A total of 11 new contracts have been closed, both with companies and national and international organizations, 3 of them contracts were collaborative and another 1 was technology licensing.

Other initiatives and achievements of the Unit during 2019 include the following:

- One project selected to participate in HealthStart: Madri+d Foundation for Knowledge Program to promote the creation of technology start-ups in the health sector
- 83 meetings have been held with companies, collaborators and internal researchers.
- 155 innovation projects managed.
- Participation of the unit in 16 informative sessions on innovation in national events and 6 sessions given by the UAL.
- The Unit is actively working with 81 national and international technological partners.

It is noteworthy that the webpage of the IISGM includes a specific section on innovation, which describes services provided by the ISU, the members of the ISU, contact details, latest news, and notable successes:

- Present an innovative idea or project by contacting <http://www.iisgm.com/innovacion/unidad-de-apoyo-a-la-innovacion/comunica-tu-idea-2/>
- Material for consultation such as the Innovation Guide <http://www.iisgm.com/innovacion/unidad-de-apoyo-a-la-innovacion/normativa-de-inventos-del-iisgm/>

INNOVATION PORTFOLIO

Below, we show the project portfolio, or «innovation funnel», generated by IISGM and active as at December 2019.

	ICTs Health	Material and devices	Medicines and pharmaceutical products	Biotechnology and molecular diagnosis	Imaging	Care organization
Ideas proposed (not developed)	8	13	5	14	3	11
Ideas under assessment	1	4	0	0	0	0
Ideas under development	7	10	2	8	5	11
Ideas under transfer	3	4	2	4	3	1
Ideas in the market	10	5	5	2	7	7

* ICT: information and communications technology.

The intellectual and industrial property of the IISGM included in the technology portfolio is detailed below.

This information is constantly updated and can be consulted at: <http://www.iisgm.com/innovacion/propiedad-intelectual-e-industrial/propiedad-intelectual-e-industrial/>



Technology Companies / Start Up

The creation, consolidation and proliferation of companies requires a series of prerequisites to be met:

- Investment in R&D that contributes to the creation of new technological opportunities.
- Risk capital to finance the first stages of development of a start up.
- A culture favourable to entrepreneurship in the environment.
- Specific programmes to support the creation of start-ups.
- A regulatory-institutional framework that favours R&D&I, the protection of intellectual property and bringing researchers closer to the business world.

In this regard, it is worth highlighting the creation of the following companies:

AMBIOX BIOTECH, S.L.

Ambiox Biotech is characterized by its entrepreneurial spirit, capacity for innovation, and social commitment. Its mission is to apply innovative developments in nanotechnology to the field of biomedicine, thus bringing added value to Society that can be appreciated at international level. The creativity and innovation of Ambiox Biotech are developed for application in human health care, thus forging a link between science and the market.

The company was created as a spin-off at Universidad de Alcalá de Henares. Its team includes M^a Ángeles Muñoz, Director of the HIV Molecular Biology Group of the IISGM.

SIMCOSMETIC BIOTECH, S.L.

SimCosmetic Biotech develops new dermocosmetics using natural ingredients. Its biotechnology platforms are designed to combine natural ingredients in order to generate new high-quality protected dermocosmetics with synergetic activity.

The company was the fruit of a joint venture between Hospital Gregorio Marañón, Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), and the University of Freiburg (Germany), as well as with leading companies in the field of natural ingredients and development of cosmetics. SimCosmetic's key advantage in developing new dermo-cosmetic and skin care products is its ability to cooperate with various public and private organizations.

NATURE 4D

Nature 4D designs, develops, and sets up advanced imaging devices tailored to the needs of the client. These devices have multiple applications in the field of biomedicine and basic research.

Nature 4D was created as a spin-off at Universidad Carlos III de Madrid based on technology developed within the framework of the IISGM. Its activity focuses on advanced optical imaging techniques, specifically advanced microscopy and preclinical optical imaging techniques. Thanks to a software application developed and registered by the sponsor and the company's highly specialized experience, Nature 4D offers tailored solutions involving optical imaging devices with user-friendly software for the acquisition and representation of data in 2D and 3D.

CORIFY CARE, S.L.

Corify Care is a spin-off of funded by main world-wide experts on cardiac arrhythmias which is going to introduce in the market a novel medical device to non-invasively map cardiac arrhythmias in real time. This novel technology will improve the treatment in more than 10 million of atrial fibrillation patients only in Europe. Its non-invasive electroanatomical mapping system allows the possibility to map all atrial fibrillation patients even during a regular visit to the cardiologist s without the need of invasive catheters.

Corify Care was created as a spin-off at IISGM de Universitat Politècnica de Valencia. Its team includes Andreu Climent (CEO), Francisco Fernández-Avilés and Felipe Atienza of Cardiovascular Diseases Area of the IISGM.



Interventional and non interventional clinical studies

During the year 2018, a total of **1115** clinical studies (clinical trials and observational studies) were active in our hospital. A total of 208 studies were implemented.

Approximately 95% of the clinical trials with medicines started during 2018 were Phase I, II, and III studies.

As for the distribution by research areas, almost 46.1% of the clinical trials were led by the Translational Oncology Area (Area 6).

ACTIVE CLINICAL STUDIES	
2015	945
2016	1048
2017	1226
2018	1190
2019	1115

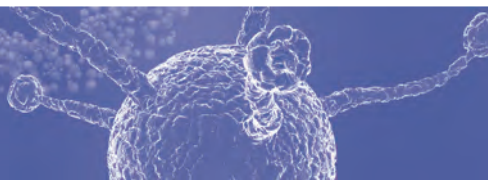
NEW CLINICAL STUDIES			
	Clinical Trials	Observational studies	Total
2015	150	73	223
2016	125	57	182
2017	148	83	231
2018	136	74	210
2019	140	68	208

DISTRIBUTION OF CLINICAL TRIALS SIGNED BY PHASE (%)					
	2015	2016	2017	2018	2019
Phase I	5.33	7.2	6.8	11.7	7.28
Phase II	31.34	30.4	30.8	34.5	37.1
Phase III	58	56.8	52.5	48	43.7
Phase IV	1.33	2.4	6.3	3.6	4.6
Others (Medical device, Vaccines)	4	6.4	3.6	2.2	7.29

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2019 (National/International)		
	Nº	%
National	67	32.2
International	141	67.68

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2019 BY RESEARCH AREA OF IISGM		
	Nº	%
Area 1	0	0
Area 2	17	8,2
Area 3	18	8.7
Area 4	7	3.4
Area 5	26	12.5
Area 6	96	46.2
Area 7	41	19.7
Nursing group	0	0
Associated clinicians	3	1.4

Fundings of liSGM



The global analysis of Institute funding was performed by collecting all income obtained by research groups both from competitive/noncompetitive projects and from clinical trials, agreements with various bodies, and donations.

The objective of this methodology is to be able to provide information on the capacity of liSGM groups to generate income.

The total income generated by liSGM researchers 'own activity in 2019 came to 16.476.182 15,503,687 € that is, 6,3 % more than in 2018.

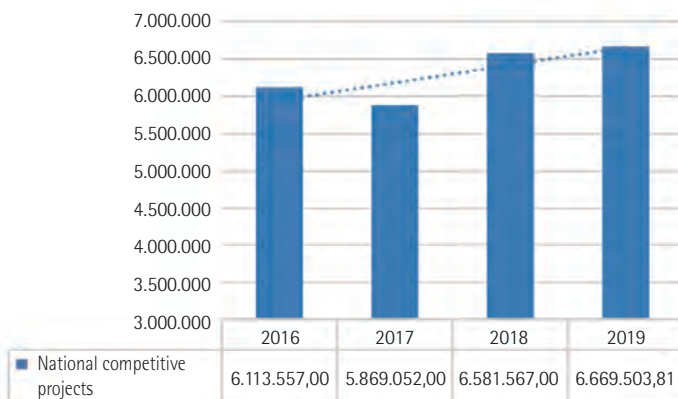
To these revenues must be added the nominative subsidy granted to this foundation by the Consejería of Health of the Community of Madrid, which would raise total revenues to **17.098.402 euros**.

	2015	2016	2017	2018	2019
Total income generated by researchers	13,235,424 €	14,219,400 €	14,431,258 €	15,503,687 €	16,476,182 €
Nominative subsidy C. Madrid				612,220 €	622,220 €

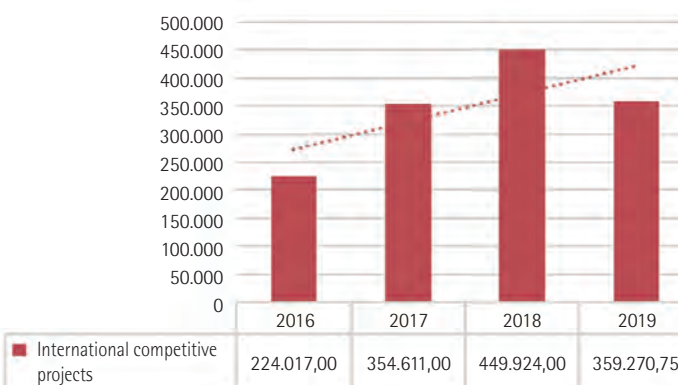
As in previous years, this income is earmarked for the support and development of research activities in the groups.

EVOLUTION OF INCOME GENERATED BY RESEARCHERS BY CATEGORY

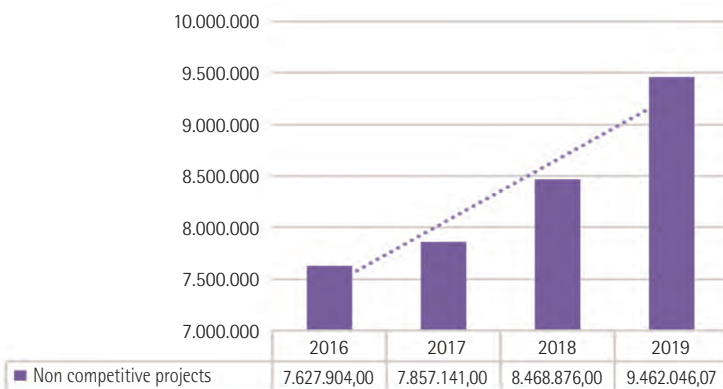
National competitive projects



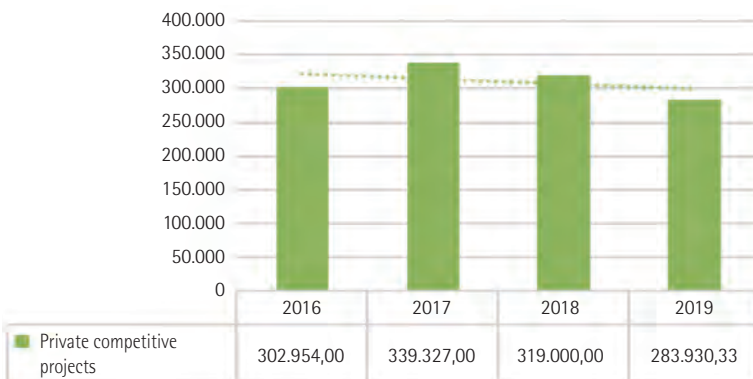
International competitive projects



Non competitive projects

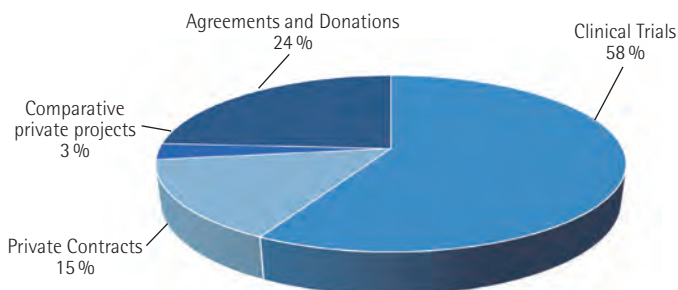


Private competitive projects



Overall, the distribution of income is as in previous years, with national competitive projects representing 39% and Clinical Trials 33%.

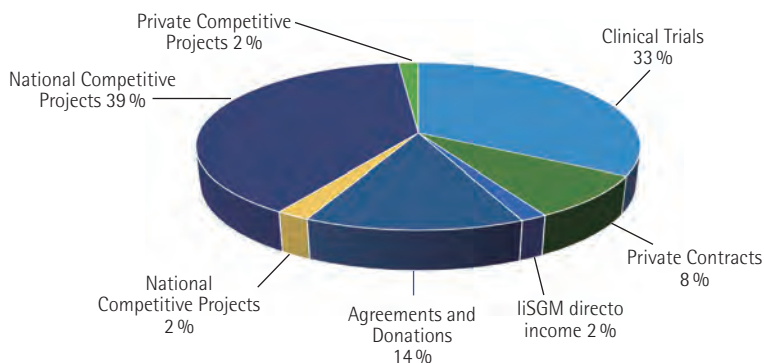
Distribution of private funding (2019)



57 % of income was from the private sector

Of all income generated exclusively by researchers, 58 % was from the private sector, reaching the figure of 9,745,976 euros in 2019, 58 % of this amount was from clinical trials activity.

Resources generated by IISGM researchers (20129)



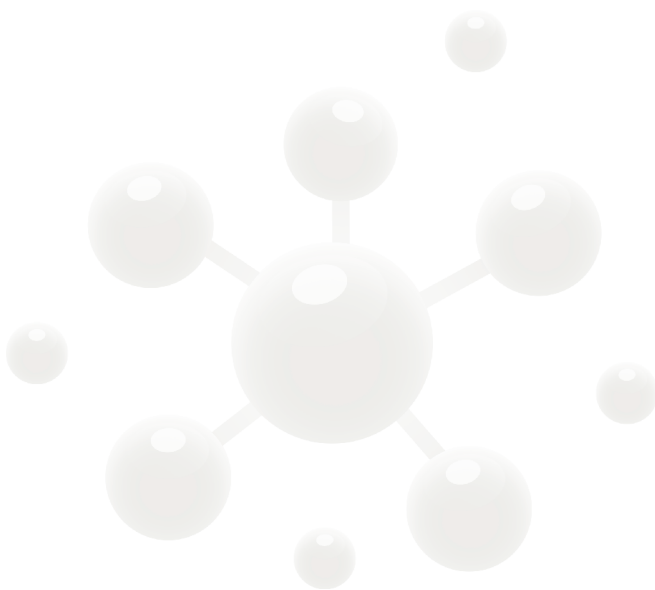
43% of the resources obtained from competitive calls

Despite the reduction in funds available for research projects through competitive call, especially in the public sector, the IISGM continues to have a considerable ability to generate income from competitive calls. In fact funds generated through National Competitive calls have increase 13,4% over the last 2 years.

As in previous years, in the case of individual information provided by each group in this report, only projects obtained by groups in **competitive calls (public and private)** where the principal investigator was a group researcher are reported.

Therefore, other sources of funding have not been taken into account.

The objective of this premise is to provide information on the capacity of each of the groups to obtain funding in a competitive environment.



List of active projects in 2019 by area of research

		Research projects		Human resources	
			Not managed by FIBHGM		Not managed by FIBHGM
AREA 1: BIOMEDICAL ENGINEERING	Group 1.01-Advanced technology applications and human health	16	9	9	9
	GROUP 1.02: Signal processing		12	4	
AREA 2: CARDIOVASCULAR DISEASE	GROUP 2.01: Natural history of heart disease	21		3	
	GROUP 2.02: Cardiovascular pathophysiology		1		3
	GROUP 2.03: Cardiac cellular electrophysiology		4		
	GROUP 2.07: Acute cerebral ischemia: Stroke	1			
AREA 3: NEUROSCIENCE AND MENTAL HEALTH	GROUP 3.01: Neurobiological and psychological bases of mental disorders. Neurodevelopmental disorders.	23		18	
	GROUP 3.03B: Neurologic diseases	2		1	
AREA 4: CLINICAL MICROBIOLOGY, INFECTIOUS DISEASES AND AIDS	GROUP 4.01: Infectious diseases	14		13	
	GROUP 4.02: Clinical and epidemiological aspects of HIV and associated conditions	1		2	

(Continued)

LIST OF ACTIVE PROJECTS IN 2019 BY AREA OF RESEARCH

(Cont.)

		Research projects		Human resources	
			Not managed by FIBHGM		Not managed by FIBHGM
AREA 5: DISEASES OF THE IMMUNE SYSTEM	GROUP 5.01: Pathophysiology and clinical investigation of chronic inflammatory and immune diseases	8		4	
	GROUP 5.02: Molecular biology of HIV	6		3	
	GROUP 5.03: Systemic autoimmune diseases	1			
	GROUP 5.06: Immune homeostasis and regulation in diseases associated with the immune system	7		4	
	GROUP 5.07: Infections in the pediatric population	4		3	
AREA 6: TRANSLATIONAL ONCOLOGY	GROUP 6.02: Translational medical oncology and personalized cancer therapy	4			
	GROUP 6.03: Genetics and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation	2		2	
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.01: Inflammation and vascular damage in chronic kidney disease. Renal pathophysiology	2			
	GROUP 7.02: Pathophysiology and natural history of liver and digestive diseases	10		6	
	GROUP 7.04: Diseases of the critically ill child	5		2	

(Continued)

(Cont.)

		Research projects		Human resources	
			Not managed by FIBHGM		Not managed by FIBHGM
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.05B Pathophysiology, outcome, and therapeutic strategies in chronic respiratory insufficiency and respiratory disorders of sleep	3			
	GROUP 7.16: Regenerative medicine and system development: cardiovascular and osteochondral	1	2		
	GROUP 7.20: Anesthesia, toxins, and arrhythmias	1			
	GROUP 7.21 Biopathology of aging	1			
	GROUP 7.22 Pathophysiology of the neonate and developing child	1			
	GROUP 7.25: Artificial circulation laboratory	3		1	
	GROUP 7.27: Hospital pharmacy and pharmacogenomics	1		1	
	GROUP 7.29: Pharmacology and vascular pathophysiology		4		
	GROUP 7.31 Pathophysiology in women, pregnancy, labor, and puerperium	2		1	
NURSING CARE GROUP		1			

Scientific publications

The list presented below shows all the referenced publications in which investigators from the IISGM participated in during 2019.

Publications with an impact factor greater than **10 points are highlighted**.

In order to obtain the total impact factor, only information from publications indexed as original articles, reviews, editorials, and proceedings papers have been taken into account. Other types of publication (eg, letters to the editor and case studies) have not been included.

It is important to note that publications involving different groups or areas of the Institute are computed individually in each group and area, although only once for purposes of the calculation of the Institute's total impact factor.

Journal	IF	Nº	Amount IF	Q
ACTA DERMATO-VENEREOLOGICA	4.016	1	4.016	Q1
ACTA OPHTHALMOLOGICA	3.362	1	3.362	Q1
ACTAS ESPAÑOLAS DE PSIQUIATRIA	1.681	1	1.681	Q3
ACTAS UROLOGICAS ESPAÑOLAS	0.873	12	10.476	Q4
ADICCIONES	3.167	1	3.167	Q1
ADVANCES IN DATA ANALYSIS AND CLASSIFICATION	1.603	1	1.603	Q2
ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY	2.45	1	2.45	Q2
ADVANCES IN THERAPY	3.871	1	3.871	Q1
AGING CELL	7.238	1	7.238	Q1
AGING CLINICAL AND EXPERIMENTAL RESEARCH	2.697	1	2.697	Q3
AGING AND DISEASE	5.402	1	5.402	Q1
AIDS	4.511	6	27.066	Q1
ALLERGY	8.706	1	8.706	Q1
AMERICAN JOURNAL OF CARDIOLOGY	2.57	2	5.14	Q2
AMERICAN JOURNAL OF EMERGENCY MEDICINE	1.911	1	1.911	Q2
AMERICAN JOURNAL OF PERINATOLOGY	1.474	1	1.474	Q3
AMERICAN JOURNAL OF PHYSIOLOGY-RENAL PHYSIOLOGY	3.144	1	3.144	Q2

(Continued)

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Journal	IF	Nº	Amount IF	Q
AMERICAN JOURNAL OF TRANSPLANTATION	7.338	3	22.014	Q1
AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE	2.126	1	2.126	Q2
ANALES DE PEDIATRIA	1.313	20	26.26	Q3
ANAESTHESIA	5.739	1	5.739	Q1
ANATOMICAL RECORD-ADVANCES IN INTEGRATIVE ANATOMY AND EVOLUTIONARY BIOLOGY	1.634	4	6.536	Q3
ANESTHESIA AND ANALGESIA	4.305	2	8.61	Q1
ANESTHESIOLOGY	7.067	1	7.067	Q1
ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY	4.969	1	4.969	Q1
ANNALS OF BIOMEDICAL ENGINEERING	3.324	1	3.324	Q2
ANNALS OF CLINICAL MICROBIOLOGY AND ANTIMICROBIALS	2.705	1	2.705	Q3
ANNALS OF CLINICAL AND TRANSLATIONAL NEUROLOGY	3.66	1	3.66	Q2
ANNALS OF EMERGENCY MEDICINE	5.799	2	11.598	Q1
ANNALS OF NONINVASIVE ELECTROCARDIOLOGY	1.131	1	1.131	Q4
ANNALS OF ONCOLOGY	18.274	5	91.37	Q1
ANNALS OF THE RHEUMATIC DISEASES	16.102	2	32.204	Q1
ANNALS OF SURGERY	10.13	2	20.26	Q1
ANNALS OF THORACIC SURGERY	3.639	2	7.278	Q1
ANNALS OF TRANSLATIONAL MEDICINE	3.297	2	6.594	Q2
ANNUAL REVIEW OF GENOMICS AND HUMAN GENETICS	7.243	1	7.243	Q1
ANTIMICROBIAL AGENTS AND CHEMOTHERAPY	4.904	5	24.52	Q1
ANTIMICROBIAL RESISTANCE AND INFECTION CONTROL	3.594	1	3.594	Q1
ANTIOXIDANTS	5.014	1	5.014	Q1
ANTIVIRAL RESEARCH	4.101	3	12.303	Q1
APPLIED CLINICAL INFORMATICS	2.147	1	2.147	Q3

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Journal	IF	Nº	Amount IF	Q
ARCHIVOS DE BRONCONEUMOLOGIA	4.957	14	69.398	Q1
ARCHIVES OF DISEASE IN CHILDHOOD	3.041	1	3.041	Q1
ARCHIVES OF ENDOCRINOLOGY METABOLISM	1.802	1	1.802	Q4
ARCHIVOS ESPANOL DE UROLOGIA	0.395	3	1.185	Q4
ARCHIVES OF GERONTOLOGY AND GERIATRICS	2.128	1	2.128	Q3
ARCHIVES OF WOMENS MENTAL HEALTH	2.5	1	2.5	Q3
ARTHRITIS RESEARCH & THERAPY	4.103	1	4.103	Q1
ARTHRITIS & RHEUMATOLOGY	9.586	2	19.172	Q1
ATENCION PRIMARIA	1.087	2	2.174	Q3
AUSTRALIAN CRITICAL CARE	2.214	2	4.428	Q1
AUSTRALIAN OCCUPATIONAL THERAPY JOURNAL	1.055	1	1.055	Q4
AUSTRALASIAN JOURNAL OF DERMATOLOGY	1.789	2	3.578	Q3
AUTOIMMUNITY REVIEWS	7.767	1	7.767	Q1
BOLETIN DE MALARIOLOGIA Y SALUD AMBIENTAL	0.433	1	0.433	Q4
BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY	2.727	1	2.727	Q3
BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS	2.985	1	2.985	Q2
BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION	3.853	2	7.706	Q2
BIOLOGICAL PSYCHIATRY	12.095	1	12.095	Q1
BIOMEDICAL OPTICS EXPRESS	3.921	1	3.921	Q1
BIOMED RESEARCH INTERNATIONAL	2.276	1	2.276	Q3
BIOMOLECULES	4.082	2	8.164	Q2
BLOOD	17.543	1	17.543	Q1
BLOOD CANCER JOURNAL	8.023	1	8.023	Q1
BMC CANCER	3.15	4	12.6	Q3
BMC GASTROENTEROLOGY	2.489	1	2.489	Q3

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Journal	IF	Nº	Amount IF	Q
BMC GENOMICS	3.594	1	3.594	Q2
BMC INFECTIOUS DISEASES	2.688	2	5.376	Q3
BMC NEPHROLOGY	1.913	2	3.826	Q3
BMC PEDIATRICS	1.909	1	1.909	Q2
BMC PSYCHIATRY	2.704	1	2.704	Q2
BMC PUBLIC HEALTH	2.521	1	2.521	Q2
BMJ-BRITISH MEDICAL JOURNAL	30.223	1	30.223	Q1
BONE MARROW TRANSPLANTATION	4.725	1	4.725	Q1
BRAIN IMAGING AND BEHAVIOR	3.391	1	3.391	Q2
BRAIN SCIENCES	3.332	1	3.332	Q2
BRAIN STIMULATION	6.565	1	6.565	Q1
BREAST CANCER RESEARCH	4.988	1	4.988	Q2
BREAST CANCER RESEARCH AND TREATMENT	3.831	3	11.493	Q2
BREAST JOURNAL	1.991	1	1.991	Q3
BRITISH JOURNAL OF CANCER	5.791	1	5.791	Q1
BRITISH JOURNAL OF HAEMATOLOGY	5.518	1	5.518	Q1
BRITISH JOURNAL OF PHARMACOLOGY	7.73	1	7.73	Q1
CANADIAN MEDICAL ASSOCIATION JOURNAL	7.744	1	7.744	Q1
CANCER CHEMOTHERAPY AND PHARMACOLOGY	2.967	1	2.967	Q2
CANCER MEDICINE	3.491	2	6.982	Q2
CANCER	5.742	2	11.484	Q1
CANCERS	6.126	2	12.252	Q1
CARBOHYDRATE RESEARCH	1.841	1	1.841	Q2
CARDIOLOGY JOURNAL	1.669	1	1.669	Q3
CARDIOLOGY IN THE YOUNG	1	1	1	Q4
CARDIOLOGY	1.791	7	12.537	Q3

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Journal	IF	Nº	Amount IF	Q
CARDIOVASCULAR DIABETOLOGY	7.332	3	21.996	Q1
CARDIOVASCULAR JOURNAL OF AFRICA	0.897	1	0.897	Q4
CARDIOVASCULAR RESEARCH	8.168	1	8.168	Q1
CARDIOVASCULAR TOXICOLOGY	2.284	1	2.284	Q3
CATHETERIZATION AND CARDIOVASCULAR INTERVENTIONS	2.044	1	2.044	Q3
CELL	38.637	1	38.637	Q1
CELL REPORTS	8.109	1	8.109	Q1
CEREBROVASCULAR DISEASES	2.698	1	2.698	Q2
CHEMOTHERAPY	1.641	1	1.641	Q4
CIRUGIA ESPANOLA	1.323	9	11.907	Q3
CIRCULATION RESEARCH	14.467	1	14.467	Q1
CIRCULATION-ARRHYTHMIA AND ELECTROPHYSIOLOGY	4.393	1	4.393	Q1
CIRCULATION-CARDIOVASCULAR INTERVENTIONS	5.493	2	10.986	Q1
CIRCULATION	23.603	2	47.206	Q1
CLEFT PALATE-CRANIOFACIAL JOURNAL	1.347	1	1.347	Q3
CLINICAL ANATOMY	1.967	1	1.967	Q2
CLINICAL CANCER RESEARCH	10.107	3	30.321	Q1
CLINICAL CARDIOLOGY	2.248	1	2.248	Q3
CLINICAL CHEMISTRY AND LABORATORY MEDICINE	3.595	1	3.595	Q1
CLINICA CHIMICA ACTA	2.615	1	2.615	Q2
CLINICAL COLORECTAL CANCER	3.245	1	3.245	Q3
CLINICAL DRUG INVESTIGATION	2.267	1	2.267	Q3
CLINICAL AND EXPERIMENTAL DERMATOLOGY	1.977	1	1.977	Q3
CLINICAL AND EXPERIMENTAL RHEUMATOLOGY	3.319	3	9.957	Q2
CLINICAL INFECTIOUS DISEASES	8.313	2	16.626	Q1

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Journal	IF	Nº	Amount IF	Q
CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY	6.628	1	6.628	Q1
CLINICAL JOURNAL OF PAIN	2.893	2	5.786	Q2
CLINICAL KIDNEY JOURNAL	3.388	4	13.552	Q1
CLINICAL MICROBIOLOGY AND INFECTION	7.117	2	14.234	Q1
CLINICAL MICROBIOLOGY REVIEWS	22.556	1	22.556	Q1
CLINICAL NUTRITION	6.36	4	25.44	Q1
CLINICAL PEDIATRICS	1.026	1	1.026	Q4
CLINICAL RESEARCH IN CARDIOLOGY	5.268	1	5.268	Q1
CLINICAL RHEUMATOLOGY	2.394	2	4.788	Q3
CLINICAL & TRANSLATIONAL ONCOLOGY	2.737	12	32.844	Q3
CLINICAL TRANSPLANTATION	1.665	3	4.995	Q3
COLLOIDS AND SURFACES B-BIOINTERFACES	4.389	2	8.778	Q1
COMPREHENSIVE PHYSIOLOGY	6.604	1	6.604	Q1
COMPUTERS IN BIOLOGY AND MEDICINE	3.434	1	3.434	Q1
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE	3.632	1	3.632	Q1
CONTACT DERMATITIS	3.952	1	3.952	Q1
CORTEX	4.009	1	4.009	Q1
CURRENT MEDICINAL CHEMISTRY	4.184	1	4.184	Q1
CURRENT NEUROLOGY AND NEUROSCIENCE REPORTS	4.376	1	4.376	Q1
CURRENT OPINION IN ALLERGY AND CLINICAL IMMUNOLOGY	3.246	1	3.246	Q3
CURRENT OPINION IN INFECTIOUS DISEASES	4.577	1	4.577	Q1
CURRENT OPINION IN RHEUMATOLOGY	4.006	1	4.006	Q2
CURRENT UROLOGY REPORTS	2.307	1	2.307	Q2
CYTOTHERAPY	4.218	1	4.218	Q1
DEVELOPMENTAL AND COMPARATIVE IMMUNOLOGY	3.192	1	3.192	Q1

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Journal	IF	Nº	Amount IF	Q
DIABETES & METABOLISM	4.731	1	4.731	Q1
DIABETES RESEARCH AND CLINICAL PRACTICE	4.234	1	4.234	Q1
DIGESTIVE AND LIVER DISEASE	3.57	2	7.14	Q2
DRUGS IN R&D	2.277	1	2.277	Q3
EJSO	3.959	1	3.959	Q1
ELECTRONICS	2.412	1	2.412	Q2
EMERGING INFECTIOUS DISEASES	6.259	2	12.518	Q1
EMERGENCY MEDICINE JOURNAL	2.491	1	2.491	Q1
EMERGENCIAS	3.173	6	19.038	Q1
ENDOCRINE CONNECTIONS	2.592	1	2.592	Q3
ENDOCRINE	3.235	2	6.47	Q3
ENDOCRINOLOGIA DIABETES Y NUTRICION	1.18	6	7.08	Q4
ENDOSCOPY	7.341	1	7.341	Q1
ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA	1.654	11	18.194	Q4
EPIGENOMICS	4.112	1	4.112	Q2
EPILEPSY & BEHAVIOR	2.508	1	2.508	Q2
ESC HEART FAILURE	3.902	1	3.902	Q2
EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	3.288	1	3.288	Q2
EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	3.941	3	11.823	Q1
EUROPEAN GERIATRIC MEDICINE	1.232	1	1.232	Q4
EUROPEAN HEART JOURNAL	22.673	4	90.692	Q1
EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE	3.813	4	15.252	Q2
EUROPEAN HEART JOURNAL-CARDIOVASCULAR PHARMACOTHERAPY	6.696	1	6.696	Q1
EUROPEAN JOURNAL OF AGEING	2.413	1	2.413	Q2

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Journal	IF	Nº	Amount IF	Q
EUROPEAN JOURNAL OF CANCER	7.275	5	36.375	Q1
EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES	2.837	4	11.348	Q2
EUROPEAN JOURNAL OF DERMATOLOGY	2.782	8	22.256	Q2
EUROPEAN JOURNAL OF EMERGENCY MEDICINE	2.17	1	2.17	Q2
EUROPEAN JOURNAL OF HAEMATOLOGY	2.22	1	2.22	Q3
EUROPEAN JOURNAL OF HEALTH ECONOMICS	2.367	1	2.367	Q1
EUROPEAN JOURNAL OF HEART FAILURE	11.627	3	34.881	Q1
EUROPEAN JOURNAL OF HOSPITAL PHARMACY-SCIENCE AND PRACTICE	0.892	2	1.784	Q4
EUROPEAN JOURNAL OF INTERNAL MEDICINE	4.329	9	38.961	Q1
EUROPEAN JOURNAL OF NEUROLOGY	4.516	5	22.58	Q1
EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING	7.081	1	7.081	Q1
EUROPEAN JOURNAL OF PAEDIATRIC NEUROLOGY	2.51	1	2.51	Q2
EUROPEAN JOURNAL OF PREVENTIVE CARDIOLOGY	5.864	2	11.728	Q1
EUROPEAN JOURNAL OF PUBLIC HEALTH	2.391	1	2.391	Q2
EUROPEAN JOURNAL OF TRAUMA AND EMERGENCY SURGERY	2.139	1	2.139	Q2
EUROPEAN NEUROPSYCHOPHARMACOLOGY	3.853	3	11.559	Q1
EUROPEAN POLYMER JOURNAL	3.862	1	3.862	Q1
EUROPEAN PSYCHIATRY	4.464	1	4.464	Q1
EUROPEAN UROLOGY	17.947	1	17.947	Q1
EUROPACE	4.045	2	8.09	Q2
EUROSURVEILLANCE	6.454	3	19.362	Q1
EXPERT OPINION ON BIOLOGICAL THERAPY	3.224	1	3.224	Q2
EXPERT OPINION ON DRUG SAFETY	3.383	1	3.383	Q2
EXPERT OPINION ON INVESTIGATIONAL DRUGS	5.081	1	5.081	Q1

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Journal	IF	Nº	Amount IF	Q
EXPERT OPINION ON ORPHAN DRUGS	0.805	1	0.805	Q4
EXPERT OPINION ON PHARMACOTHERAPY	2.878	1	2.878	Q2
EXPERT REVIEW OF GASTROENTEROLOGY & HEPATOLOGY	3.514	1	3.514	Q2
EXPERT REVIEW OF MEDICAL DEVICES	2.2	1	2.2	Q3
FASEB JOURNAL	4.966	1	4.966	Q1
FOOT & ANKLE INTERNATIONAL	2.292	1	2.292	Q2
FREE RADICAL BIOLOGY AND MEDICINE	6.17	1	6.17	Q1
FRONTIERS IN IMMUNOLOGY	5.085	4	20.34	Q1
FRONTIERS IN MICROBIOLOGY	4.235	1	4.235	Q2
FRONTIERS IN NEUROANATOMY	3.292	1	3.292	Q1
FRONTIERS IN NEUROLOGY	2.889	1	2.889	Q2
FRONTIERS IN ONCOLOGY	4.848	1	4.848	Q2
FRONTIERS IN PEDIATRICS	2.634	1	2.634	Q1
FRONTIERS IN PHYSIOLOGY	3.367	1	3.367	Q1
FRONTIERS IN PSYCHIATRY	2.849	3	8.547	Q2
FUNGAL GENETICS AND BIOLOGY	3.071	1	3.071	Q2
FUTURE GENERATION COMPUTER SYSTEMS -THE INTERNATIONAL JOURNAL OF ESCIENCE	6.125	1	6.125	Q1
FUTURE MEDICINAL CHEMISTRY	3.607	1	3.607	Q2
FUTURE ONCOLOGY	2.66	1	2.66	Q3
GASTROENTEROLOGIA Y HEPATOLOGIA	1.581	6	9.486	Q4
GASTROENTEROLOGY	17.373	3	52.119	Q1
GASTROINTESTINAL ENDOSCOPY	6.89	1	6.89	Q1
GENERAL THORACIC AND CARDIOVASCULAR SURGERY	1.088	1	1.088	Q4
GUT	19.819	1	19.819	Q1
HAEMATOLOGICA	7.116	3	21.348	Q1

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Journal	IF	Nº	Amount IF	Q
HEAD AND NECK-JOURNAL FOR THE SCIENCES AND SPECIALTIES OF THE HEAD AND NECK	2.538	1	2.538	Q1
HEALTH AND QUALITY OF LIFE OUTCOMES	2.344	1	2.344	Q2
HEALTH RESEARCH POLICY AND SYSTEMS	2.365	1	2.365	Q2
HEART	5.213	5	26.065	Q1
HEART FAILURE CLINICS	2.327	1	2.327	Q3
HEMATOLOGICAL ONCOLOGY	2.832	1	2.832	Q2
HEMATOLOGY-ONCOLOGY CLINICS OF NORTH AMERICA	3.107	1	3.107	Q2
HEMODIALYSIS INTERNATIONAL	1.839	1	1.839	Q3
HEPATOLOGY	14.679	3	44.037	Q1
HUMAN BRAIN MAPPING	4.421	3	13.263	Q1
HUMAN MUTATION	4.124	1	4.124	Q1
HYPERTENSION RESEARCH	2.941	1	2.941	Q2
HYPERTENSION	7.713	1	7.713	Q1
IEEE ACCESS	3.745	1	3.745	Q1
IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS	5.223	3	15.669	Q1
IEEE SIGNAL PROCESSING LETTERS	3.105	1	3.105	Q2
IEEE TRANSACTIONS ON INFORMATION THEORY	3.036	3	9.108	Q2
IEEE TRANSACTIONS ON MEDICAL IMAGING	6.685	1	6.685	Q1
IEEE TRANSACTIONS ON SIGNAL PROCESSING	5.028	1	5.028	Q1
IMMUNOLOGY AND ALLERGY CLINICS OF NORTH AMERICA	3	1	3	Q3
INDIAN JOURNAL OF DERMATOLOGY	1.523	1	1.523	Q3
INDIAN JOURNAL OF PEDIATRICS	1.508	1	1.508	Q3
INFECTIOUS DISEASES	2.494	1	2.494	Q3
INFECTION GENETICS AND EVOLUTION	2.773	2	5.546	Q3
INFECTION	3.04	1	3.04	Q2

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Journal	IF	Nº	Amount IF	Q
INFLAMMATORY BOWEL DISEASES	4.261	1	4.261	Q2
INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED	2.106	1	2.106	Q2
INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY	2.917	2	5.834	Q3
INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS	4.621	2	9.242	Q1
INTERNATIONAL JOURNAL OF CANCER	5.145	1	5.145	Q1
INTERNATIONAL JOURNAL OF CARDIOLOGY	3.229	7	22.603	Q2
INTERNATIONAL JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE	2.772	2	5.544	Q2
INTERNATIONAL JOURNAL OF CLINICAL AND EXPERIMENTAL MEDICINE	0.166	1	0.166	Q4
INTERNATIONAL JOURNAL OF CLINICAL PHARMACY	1.616	1	1.616	Q4
INTERNATIONAL JOURNAL OF CLINICAL PRACTICE	2.444	1	2.444	Q2
INTERNATIONAL JOURNAL OF DERMATOLOGY	2.067	1	2.067	Q3
INTERNATIONAL JOURNAL OF DRUG POLICY	4.444	1	4.444	Q1
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	2.849	2	5.698	Q1
INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES	4.556	3	13.668	Q1
INTERNATIONAL JOURNAL OF NANOMEDICINE	5.115	1	5.115	Q1
INTERACTIVE CARDIOVASCULAR AND THORACIC SURGERY	1.675	2	3.35	Q3
INTERNAL MEDICINE JOURNAL	1.677	1	1.677	Q3
INVESTIGATIONAL NEW DRUGS	3.525	1	3.525	Q2
JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE	7.574	5	37.87	Q1
JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY	8.277	1	8.277	Q1
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY	20.589	3	61.767	Q1
JOURNAL OF THE AMERICAN GERIATRICS SOCIETY	4.18	1	4.18	Q1

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Journal	IF	Nº	Amount IF	Q
JOURNAL OF THE AMERICAN HEART ASSOCIATION	4.605	4	18.42	Q1
JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY	5.439	7	38.073	Q1
JOURNAL OF BIOMEDICAL SCIENCE	5.762	1	5.762	Q1
JOURNAL OF CARDIAC SURGERY	1.49	2	2.98	Q3
JOURNAL OF CARDIOTHORACIC AND VASCULAR ANESTHESIA	2.258	1	2.258	Q3
JOURNAL OF CARDIOVASCULAR PHARMACOLOGY	2.598	1	2.598	Q2
JOURNAL OF CARDIOVASCULAR SURGERY	1.415	1	1.415	Q3
JOURNAL OF CARDIOVASCULAR TRANSLATIONAL RESEARCH	3.312	1	3.312	Q2
JOURNAL OF CELLULAR PHYSIOLOGY	5.546	2	11.092	Q1
JOURNAL OF CHEMOTHERAPY	1.661	1	1.661	Q4
JOURNAL OF CLINICAL APHERESIS	1.629	2	3.258	Q4
JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM	5.399	1	5.399	Q1
JOURNAL OF CLINICAL MEDICINE	3.303	11	36.333	Q1
JOURNAL OF CLINICAL MONITORING AND COMPUTING	2.108	1	2.108	Q3
JOURNAL OF CLINICAL NEUROSCIENCE	1.76	1	1.76	Q3
JOURNAL OF CLINICAL ONCOLOGY	32.956	3	98.868	Q1
JOURNAL OF CLINICAL PHARMACY AND THERAPEUTICS	1.833	1	1.833	Q4
JOURNAL OF CLINICAL SLEEP MEDICINE	3.586	1	3.586	Q2
JOURNAL OF CRANIOFACIAL SURGERY	0.953	1	0.953	Q4
JOURNAL OF CRITICAL CARE	2.685	1	2.685	Q3
JOURNAL OF CROHNS & COLITIS	8.658	1	8.658	Q1
JOURNAL OF DERMATOLOGY	3.072	1	3.072	Q2
JOURNAL OF DERMATOLOGICAL TREATMENT	2.156	2	4.312	Q2
JOURNAL OF ELECTROCARDIOLOGY	0.944	1	0.944	Q4
JOURNAL OF THE EUROPEAN ACADEMY OF DERMATOLOGY AND VENEREOLOGY	5.248	1	5.248	Q1

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Journal	IF	Nº	Amount IF	Q
JOURNAL OF EVALUATION IN CLINICAL PRACTICE	1.681	1	1.681	Q3
JOURNAL OF FOOT & ANKLE SURGERY	1.043	1	1.043	Q4
JOURNAL OF GASTROINTESTINAL SURGERY	2.573	1	2.573	Q2
JOURNAL OF GERIATRIC CARDIOLOGY	2.491	3	7.473	Q2
JOURNAL OF GERIATRIC ONCOLOGY	2.761	1	2.761	Q3
JOURNAL OF GLOBAL ANTIMICROBIAL RESISTANCE	2.706	1	2.706	Q2
JOURNAL OF HEPATOLOGY	20.582	6	123.492	Q1
JOURNAL OF THE HISTORY OF THE NEUROSCIENCES	0.347	1	0.347	Q4
JOURNAL OF HOSPITAL INFECTION	3.271	2	6.542	Q1
JOURNAL FOR IMMUNOTHERAPY OF CANCER	9.913	1	9.913	Q1
JOURNAL OF INHERITED METABOLIC DISEASE	4.036	1	4.036	Q2
JOURNAL OF INTERVENTIONAL CARDIAC ELECTROPHYSIOLOGY	1.277	1	1.277	Q4
JOURNAL OF INVASIVE CARDIOLOGY	1.453	1	1.453	Q4
JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY	3.488	11	38.368	Q2
JOURNAL OF KNEE SURGERY	1.986	1	1.986	Q2
JOURNAL OF MEDICAL GENETICS	4.943	1	4.943	Q1
JOURNAL OF MICROBIOLOGY IMMUNOLOGY AND INFECTION	3.493	1	3.493	Q2
JOURNAL OF NANOBIOTECHNOLOGY	6.518	2	13.036	Q1
JOURNAL OF NEPHROLOGY	3.484	1	3.484	Q1
JOURNAL OF NEUROGASTROENTEROLOGY AND MOTILITY	3.008	1	3.008	Q2
JOURNAL OF THE NEUROLOGICAL SCIENCES	3.115	1	3.115	Q2
JOURNAL OF NURSING MANAGEMENT	2.243	1	2.243	Q1
JOURNAL OF OBSTETRICS AND GYNAECOLOGY	0.807	1	0.807	Q4
JOURNAL OF ONCOLOGY PHARMACY PRACTICE	1.85	3	5.55	Q4
JOURNAL OF OPHTHALMOLOGY	1.447	1	1.447	Q3
JOURNAL OF PAEDIATRICS AND CHILD HEALTH	1.71	1	1.71	Q3

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Journal	IF	Nº	Amount IF	Q
JOURNAL OF PARALLEL AND DISTRIBUTED COMPUTING	2.296	1	2.296	Q2
JOURNAL OF PARKINSONS DISEASE	5.178	1	5.178	Q1
JOURNAL OF THE PEDIATRIC INFECTIOUS DISEASES SOCIETY	2.212	1	2.212	Q2
JORNAL DE PEDIATRIA	2.029	1	2.029	Q2
JOURNAL OF PEDIATRIC SURGERY	1.919	2	3.838	Q2
JOURNAL OF PEDIATRICS	3.7	1	3.7	Q1
JOURNAL OF PERINATAL MEDICINE	1.614	1	1.614	Q3
JOURNAL OF PERINATOLOGY	1.967	1	1.967	Q2
JOURNAL OF PHYSIOLOGY AND BIOCHEMISTRY	2.952	1	2.952	Q2
JOURNAL OF PHYSIOLOGY-LONDON	4.547	3	13.641	Q1
JOURNAL OF PLASTIC RECONSTRUCTIVE AND AESTHETIC SURGERY	2.39	1	2.39	Q2
JOURNAL OF PSYCHIATRIC RESEARCH	3.745	1	3.745	Q1
JOURNAL OF PSYCHOPHARMACOLOGY	3.121	1	3.121	Q2
JOURNAL OF REPRODUCTIVE IMMUNOLOGY	4.018	1	4.018	Q1
JOURNAL OF RHEUMATOLOGY	3.35	3	10.05	Q2
JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY	3.813	1	3.813	Q2
JOURNAL OF STOMATOLOGY ORAL AND MAXILLOFACIAL SURGERY	1.152	1	1.152	Q4
JOURNAL OF SURGICAL RESEARCH	1.841	1	1.841	Q3
JOURNAL OF SYSTEMS AND SOFTWARE	2.45	1	2.45	Q2
JOURNAL OF THORACIC DISEASE	2.046	1	2.046	Q3
JOURNAL OF TRANSLATIONAL MEDICINE	4.124	1	4.124	Q2
JACC-CARDIOVASCULAR INTERVENTIONS	8.432	2	16.864	Q1
JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES	3.475	1	3.475	Q2
JAMA CARDIOLOGY	12.794	1	12.794	Q1
JAMA ONCOLOGY	24.799	2	49.598	Q1

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Journal	IF	Nº	Amount IF	Q
JAMA PEDIATRICS	13.946	1	13.946	Q1
JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION	45.54	1	45.54	Q1
JOURNAL OF PARENTERAL AND ENTERAL NUTRITION	2.853	1	2.853	Q3
KIDNEY & BLOOD PRESSURE RESEARCH	1.898	1	1.898	Q3
KIDNEY INTERNATIONAL	8.945	1	8.945	Q1
LANCET	60.392	3	181.176	Q1
LANCET INFECTIOUS DISEASES	24.446	2	48.892	Q1
LANCET ONCOLOGY	33.752	1	33.752	Q1
LANCET PSYCHIATRY	16.209	1	16.209	Q1
LANCET RESPIRATORY MEDICINE	25.094	1	25.094	Q1
LEUKEMIA & LYMPHOMA	2.969	1	2.969	Q2
LEUKEMIA RESEARCH	2.214	1	2.214	Q3
LIVER INTERNATIONAL	5.175	2	10.35	Q1
LIVER TRANSPLANTATION	4.57	1	4.57	Q1
LUNG CANCER	4.702	1	4.702	Q1
MALARIA JOURNAL	2.631	2	5.262	Q1
MATURITAS	3.63	1	3.63	Q1
MBIO	6.784	1	6.784	Q1
MEDICINA CLINICA	1.635	5	8.175	Q3
MEDICAL DOSIMETRY	1.396	1	1.396	Q4
MEDICINA INTENSIVA	2.363	2	4.726	Q3
MEDICAL MYCOLOGY	2.822	5	14.11	Q1
MEDICINE	1.552	4	6.208	Q3
MICROBIAL PATHOGENESIS	2.914	1	2.914	Q3
MINERVA ANESTESIOLOGICA	2.498	2	4.996	Q3
MOLECULAR AUTISM	5.869	1	5.869	Q1
MOLECULAR GENETICS & GENOMIC MEDICINE	1.995	1	1.995	Q3

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Journal	IF	Nº	Amount IF	Q
MOLECULAR GENETICS AND METABOLISM	4.17	1	4.17	Q1
MOLECULAR IMAGING AND BIOLOGY	2.925	2	5.85	Q2
MOLECULAR NUTRITION & FOOD RESEARCH	5.309	1	5.309	Q1
MOVEMENT DISORDERS	8.679	3	26.037	Q1
MYCOSES	3.575	3	10.725	Q1
NANOMEDICINE	4.3	1	4.3	Q1
NANOSCALE	6.895	1	6.895	Q1
NATURE COMMUNICATIONS	12.121	3	36.363	Q1
NATURE	42.778	1	42.778	Q1
NEFROLOGIA	1.544	7	10.808	Q4
NEONATOLOGY	2.742	1	2.742	Q1
NEPHROLOGY DIALYSIS TRANSPLANTATION	4.531	1	4.531	Q1
NEPHRON	2.089	1	2.089	Q3
NETHERLANDS HEART JOURNAL	1.933	1	1.933	Q3
NEUROBIOLOGY OF DISEASE	5.332	1	5.332	Q1
NEUROCIROLOGIA	0.597	1	0.597	Q4
NEUROLOGIA	2.283	7	15.981	Q3
NEUROLOGY	8.77	1	8.77	Q1
NEUROPSYCHOPHARMACOLOGY	6.751	1	6.751	Q1
NEUROSCIENCE AND BIOBEHAVIORAL REVIEWS	8.33	3	24.99	Q1
NEW ENGLAND JOURNAL OF MEDICINE	74.699	4	298.796	Q1
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT	1.265	1	1.265	Q3
NUTRICION HOSPITALARIA	0.888	4	3.552	Q4
NUTRIENTS	4.546	2	9.092	Q1
OBESITY SURGERY	3.412	2	6.824	Q1
ONCOLOGIST	5.025	2	10.05	Q2

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Journal	IF	Nº	Amount IF	Q
OPEN FORUM INFECTIOUS DISEASES	3.656	4	14.624	Q2
ORAL DISEASES	2.613	1	2.613	Q1
ORPHANET JOURNAL OF RARE DISEASES	3.523	4	14.092	Q2
OSTEOPOROSIS INTERNATIONAL	3.864	1	3.864	Q2
OXIDATIVE MEDICINE AND CELLULAR LONGEVITY	5.076	1	5.076	Q2
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA	9.412	1	9.412	Q1
PACE-PACING AND CLINICAL ELECTROPHYSIOLOGY	1.303	1	1.303	Q4
PAIN MEDICINE	2.513	1	2.513	Q2
PARKINSONS DISEASE	1.758	1	1.758	Q3
PATIENT-PATIENT CENTERED OUTCOMES RESEARCH	3.226	1	3.226	Q1
PATIENT PREFERENCE AND ADHERENCE	1.946	1	1.946	Q2
PEDIATRIC ALLERGY AND IMMUNOLOGY	4.699	2	9.398	Q1
PEDIATRIC BLOOD & CANCER	2.355	1	2.355	Q2
PEDIATRIC CRITICAL CARE MEDICINE	2.854	8	22.832	Q1
PEDIATRIC DERMATOLOGY	1.164	2	2.328	Q4
PEDIATRIC EMERGENCY CARE	1.17	1	1.17	Q3
PEDIATRIC INFECTIOUS DISEASE JOURNAL	2.126	5	10.63	Q2
PEDIATRIC NEPHROLOGY	2.676	1	2.676	Q1
PEDIATRIC RESEARCH	2.747	1	2.747	Q1
PEDIATRIC SURGERY INTERNATIONAL	1.668	1	1.668	Q3
PEDIATRIC TRANSPLANTATION	1.425	1	1.425	Q3
PEDIATRICS	5.359	1	5.359	Q1
PHARMACOLOGICAL REPORTS	2.754	1	2.754	Q2
PHARMACOLOGICAL RESEARCH	5.893	2	11.786	Q1
PLOS ONE	2.74	32	87.68	Q2
PSYCHOLOGICAL MEDICINE	5.813	2	11.626	Q1
PULMONOLOGY	2.778	1	2.778	Q2

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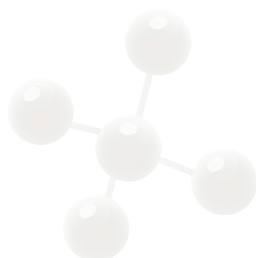
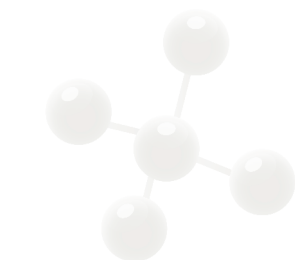
Journal	IF	Nº	Amount IF	Q
QUALITY MANAGEMENT IN HEALTH CARE	0.852	1	0.852	Q4
R JOURNAL	3.312	1	3.312	Q1
RADIOTHERAPY AND ONCOLOGY	4.856	1	4.856	Q1
RESPIRATORY MEDICINE	3.095	2	6.19	Q2
RESUSCITATION	4.215	1	4.215	Q1
REVISTA BRASILEIRA DE ANESTESIOLOGIA	0.867	2	1.734	Q4
REVISTA CLINICA ESPANOLA	1.304	5	6.52	Q3
REVISTA ESPANOLA DE CARDIOLOGIA	4.642	14	64.988	Q1
REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS	1.591	6	9.546	Q4
REVISTA ESPANOLA DE MEDICINA NUCLEAR E IMAGEN MOLECULAR	1.09	2	2.18	Q4
REVISTA ESPANOLA DE QUIMIOTERAPIA	1.132	11	12.452	Q4
REVISTA ESPANOLA DE SALUD PUBLICA	0.746	1	0.746	Q4
REVISTA IBEROAMERICANA DE MICOLOGIA	1.627	1	1.627	Q4
REVUE NEUROLOGIQUE	1.911	1	1.911	Q3
REVISTA DE NEUROLOGIA	0.562	5	2.81	Q4
REVISTA DE PSIQUIATRIA Y SALUD MENTAL	2.63	4	10.52	Q2
RHEUMATOLOGY INTERNATIONAL	1.984	3	5.952	Q3
RHEUMATOLOGY	5.606	2	11.212	Q1
RHINOLOGY	3.019	1	3.019	Q1
ROYAL SOCIETY OPEN SCIENCE	2.647	1	2.647	Q2
SCHIZOPHRENIA RESEARCH	3.759	2	7.518	Q1
SCHIZOPHRENIA BULLETIN	7.958	5	39.79	Q1
SCIENTIFIC REPORTS	3.998	25	99.95	Q1
SEMINARS IN ARTHRITIS AND RHEUMATISM	4.751	2	9.502	Q1
SEMINARS IN THROMBOSIS AND HEMOSTASIS	2.892	1	2.892	Q2
SEXUAL MEDICINE	1.923	1	1.923	Q2

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Journal	IF	Nº	Amount IF	Q
SEXUALLY TRANSMITTED DISEASES	2.74	1	2.74	Q3
STEM CELL RESEARCH	4.489	5	22.445	Q1
SUBSTANCE USE & MISUSE	1.497	1	1.497	Q3
SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES	3.149	1	3.149	Q1
SURGICAL LAPAROSCOPY ENDOSCOPY & PERCUTANEOUS TECHNIQUES	1.382	1	1.382	Q3
TARGETED ONCOLOGY	4.036	1	4.036	Q2
THERAPEUTIC ADVANCES IN GASTROENTEROLOGY	3.52	3	10.56	Q2
THERAPEUTIC HYPOTHERMIA AND TEMPERATURE MANAGEMENT	1.176	1	1.176	Q4
THORAX	8.834	1	8.834	Q1
THROMBOSIS AND HAEMOSTASIS	4.379	1	4.379	Q1
THROMBOSIS RESEARCH	2.869	2	5.738	Q2
TRANSLATIONAL ONCOLOGY	3.558	1	3.558	Q2
TRANSLATIONAL PSYCHIATRY	5.28	1	5.28	Q1
TRANSPLANT INFECTIOUS DISEASE	2.071	2	4.142	Q3
TRANSPLANTATION PROCEEDINGS	0.784	2	1.568	Q4
TRIALS	1.883	4	7.532	Q3
ULTRASOUND IN OBSTETRICS & GYNECOLOGY	5.571	1	5.571	Q1
VACCINE	3.143	1	3.143	Q2
VACCINES	4.086	1	4.086	Q2
VETERINARY ANAESTHESIA AND ANALGESIA	1.368	1	1.368	Q2
VIRUS RESEARCH	2.934	1	2.934	Q2
WORLD JOURNAL OF GASTROENTEROLOGY	3.665	1	3.665	Q2
WORLD JOURNAL OF PEDIATRICS	1.437	1	1.437	Q3
WORLD JOURNAL OF UROLOGY	3.217	1	3.217	Q2
WORLD PSYCHIATRY	40.595	1	40.595	Q1
TOTAL		956	4750.4	

Publications generated by clinical researchers associated with liSGM		
Publications of the main WOS collection in journals indexed in the JCR with impact factor	Publications of the main WOS collection in journals without impact factor	Other publications
365	40	8



Clinical Practice Guidelines

Clinical Practice Guidelines		
AREA 2: CARDIOVASCULAR DISEASE	GROUP 2.01: Natural history of heart disease	4
	GROUP 2.03: Cardiac cellular electrophysiology	5
AREA 3: NEUROSCIENCE AND MENTAL HEALTH	GROUP 3.01: Neurobiological and psychological bases of mental disorders. Neurodevelopmental disorders.	2
AREA 4: CLINICAL MICROBIOLOGY, INFECTIOUS DISEASES AND AIDS	GROUP 4.01: Infectious diseases	8
	GROUP 4.02: Clinical and epidemiological aspects of HIV and associated conditions	2
AREA 5: DISEASES OF THE IMMUNE SYSTEM	GROUP 5.01: Pathophysiology and clinical investigation of chronic inflammatory and immune diseases	1
	GROUP 5.02: Molecular biology of HIV	1
	GROUP 5.03: Systemic autoimmune diseases	1
	GROUP 5.07: Infections in the pediatric population	4
AREA 6: TRANSLATIONAL ONCOLOGY	GROUP 6.02: Translational medical oncology and personalized cancer therapy	2
	GROUP 6.03: Genetics and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation	1
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.01: Inflammation and vascular damage in chronic kidney disease. Renal pathophysiology	1
	GROUP 7.02: Pathophysiology and natural history of liver and digestive diseases	1
	GROUP 7.05B Pathophysiology, outcome, and therapeutic strategies in chronic respiratory insufficiency and respiratory disorders of sleep	1
	GROUP 7.22 Pathophysiology of the neonate and developing child	1

Training: courses, seminars, and one-day training sessions

During 2019, the IiSGM Training Committee continued working along the same lines as in previous years to detect specific needs in training.

After requesting information from IiSGM researchers by means of a needs analysis, we assessed the results and decided on the areas that were most relevant for the Institute.

These can be seen in the Training Plan 2018 (<http://www.iisgm.com/actualidad/convocatorias-y-formacion/>).

In general terms, the training activities offered by IiSGM are certified by the Continuing Training Committee of the Health Care Professions of the Autonomous Community of Madrid.

As set out in the Training Plan, during 2019, the IiSGM offered the following opportunities for training:

- Third edition of the ***Basic Course in Research Methodology***, which tries to cover the needs detected for training in basic areas of methodology in the needs analysis. This essentially practical course lasts 20 hours and is aimed mainly at medical residents and staff members who are in the early stages of their research career.
Based on a case study, the course addresses review of information sources, design of a research project and database, and basic concepts of statistical analysis, interpretation and representation of results, as well as the synthesis and reporting of the information obtained.
- Fourth edition of the ***Course in Biomedical Research Methodology***, which is organized into 4 modules lasting 80 hours. The course provides advanced training in the basics of biomedical research methodology.
The format of the course enables it to cover the all areas from the initial research hypothesis to publication of results.

- Fifth edition of the ***Course on Biomedical Research Instrumental Techniques***, which aims to provide researchers with data on the main instrumental techniques and the various research platforms of the liSGM.
- Second edition of the ***Advanced Course on Surgery for Research With Rodents***, which aims to train the student in experimental surgery with laboratory animals.

The course is practical in nature and addresses various surgical and microsurgical techniques.

- First edition of the ***Course on the Basics and Application of Flow Cytometry in Biomedical Research***.
- Pilot edition: ***Practical Course in Biomedical Research for Veterinarians***. The course lasts 500 hours and is aimed specifically at graduates in veterinary medicine who have completed their studies during the 3 years before the beginning of the course. The main objective is that the student acquire knowledge and skills that are highly practical and applicable, enabling him/her to acquire a solid grounding for future integration in an experimental research team.

The liSGM has the ideal facilities, equipment, and staff for organizing training activities at the highest level. Therefore, its human and material resources can be appropriately managed to design competitive and high-quality training. The course has very specific elements that set it apart from the range of courses provided by health research institutes and could eventually become a reference in the field of postgraduate training for veterinarians.

Furthermore, the ***liSGM Research Seminars Program*** is continuing, with weekly sessions covering areas of basic research (Lab Meetings), clinical medicine, and practical aspects of research, as well as with the participation of guest researchers. This forum is considered by the Institute to be the perfect space for implementing cooperation and synergies between groups from the liSGM and researchers from other institutions who are invited to speak.

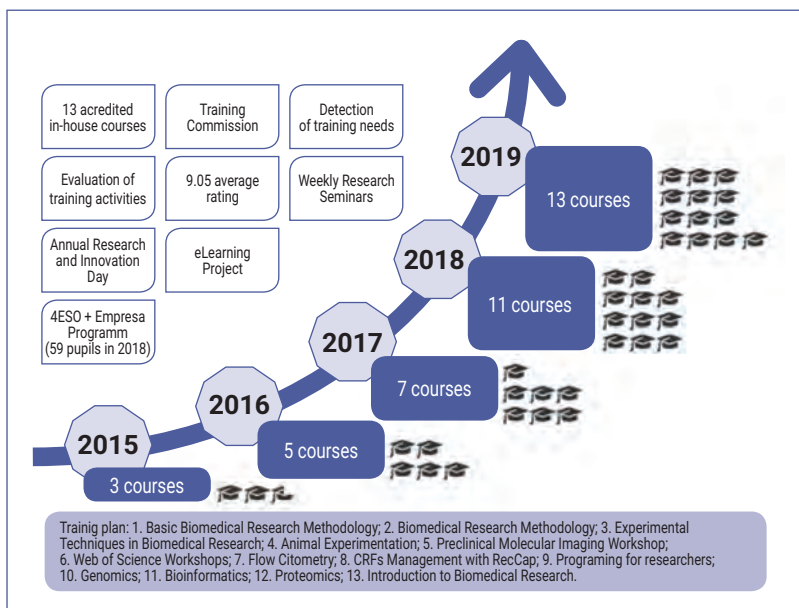
Other courses provided included the following:

- Seminars on research and lectures in the Medical Imaging Laboratory of the Experimental Medicine and Surgery Unit.
- A series of training activities were coordinated from the Nursing Research Support Unit, as follows:
 - Training courses in research methodology for resident nursing interns in gynecology and obstetrics, mental health, and pediatrics. First steps in

bibliographic searches and information resources in health sciences and qualitative research.

- Workshops: bibliographic searches and reference management. Creation of databases in access.

TRAINING



COURSES

Title	No. of Editions	Duration (in hours)	Students' Evaluation (maximum 10 points)
Basic Course in Biomedical Research Methodology	2	24	8.9
Course in Biomedical Research Methodology	5	80 (in 4 modules)	8.025
Course in Experimental Techniques in Biomedical Research	5	24	8.2
Course on Animal Experimentation	3	24	8.1
Advanced Course on Advanced Surgery in Rodents	2	30	9.5
Workshop: Introduction to Preclinical Molecular Imaging and its Application in Biomedical Research	1	80	8.1
Course on the Basics and Application of Flow Cytometry in Biomedical Research	1	20	9.5

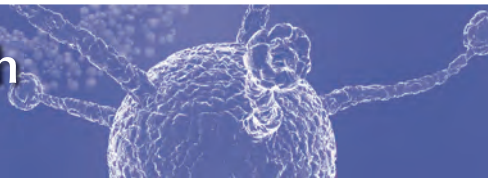
WORKSHOPS

- Web of Science Workshops.
- Workshops on the management of DCFs with RedCap.
- Workshops on programming for researchers.
- Workshops on genomics.
- Workshop on bioinformatics.

Doctoral theses defended

Doctoral theses defended		
A+B82:D89REA 1: BIOMEDICAL ENGINEERING	Group 1.01-Advanced technology applications and human health	4
	GROUP 1.02: Signal processing	4
AREA 2: CARDIOVASCULAR DISEASE	GROUP 2.01: Natural history of heart disease	1
	GROUP 2.03: Cardiac cellular electrophysiology	1
AREA 3: NEUROSCIENCE AND MENTAL HEALTH	GROUP 3.01: Neurobiological and psychological bases of mental disorders. Neurodevelopmental disorders.	3
AREA 4: CLINICAL MICROBIOLOGY, INFECTIOUS DISEASES AND AIDS	GROUP 4.01: Infectious diseases	2
AREA 5: DISEASES OF THE IMMUNE SYSTEM	GROUP 5.01: Pathophysiology and clinical investigation of chronic inflammatory and immune diseases	1
	GROUP 5.02: Molecular biology of HIV	1
	GROUP 5.06: Immune homeostasis and regulation in diseases associated with the immune system	4
	GROUP 5.07: Infections in the pediatric population	2
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.04: Diseases of the critically ill child	1
	GROUP 7.11: Iron metabolism disorders	1
	GROUP 7.16: Regenerative medicine and system development: cardiovascular and osteochondral	1
	GROUP 7.18: Peritransplant evaluation of the liver	1
	GROUP 7.25: Artificial circulation laboratory	1
	GROUP 7.27: Hospital pharmacy and pharmacogenomics	3

Cooperative research structures



Cooperative research structures				
		Ciber	Retics	Others
AREA 1: BIOMEDICAL ENGINEERING	Group 1.01-Advanced technology applications and human health	1		1
	GROUP 1.02: Signal processing	1		
AREA 2: CARDIOVASCULAR DISEASE	GROUP 2.01: Natural history of heart disease	1	1	1
	GROUP 2.02: Cardiovascular pathophysiology	1		1
	GROUP 2.03: Cardiac celular electrophysiology	1		
	GROUP 2.05: Cardiology and heart transplant in children	1		
AREA 3: NEUROSCIENCE AND MENTAL HEALTH	GROUP 3.01: Neurobiological and psychological bases of mental disorders. Neurodevelopmental disorders.	1		
AREA 4: CLINICAL MICROBIOLOGY, INFECTIOUS DISEASES AND AIDS	GROUP 4.01: Infectious diseases	1	1	
	GROUP 4.02: Clinical and epidemiological aspects of HIV and associated conditions		1	
AREA 5: DISEASES OF THE IMMUNE SYSTEM	GROUP 5.01: Pathophysiology and clinical investigation of chronic inflammatory and immune diseases		1	1
	GROUP 5.02: Molecular biology of HIV	1	1	3
	GROUP 5.07: Infections in the pediatric population		1	19

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Cooperative research structures				
		Ciber	Retics	Others
AREA 6: TRANSLATIONAL ONCOLOGY	GROUP 6.02: Translational medical oncology and personalized cancer therapy			1
	GROUP 6.03: Genetics and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation	1		2
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.01: Inflammation and vascular damage in chronic kidney disease. Renal pathophysiology		1	1
	GROUP 7.02: Pathophysiology and natural history of liver and digestive diseases	1		
	GROUP 7.04: Diseases of the critically ill child		1	1
	GROUP 7.05B Pathophysiology, outcome, and therapeutic strategies in chronic respiratory insufficiency and respiratory disorders of sleep		1	5
	GROUP 7.20: Anesthesia, toxins, and arrhythmias			
	GROUP 7.21 Biopathology of aging	1		
	GROUP 7.22 Pathophysiology of the neonate and developing child	1		1
	GROUP 7.25: Artificial circulation laboratory			1
	GROUP 7.27: Hospital pharmacy and pharmacogenomics			1
	GROUP 7.29: Pharmacology and vascular pathophysiology	1		
NURSING CARE GROUP				1

PARTNER COMPANIES

ABBVIE SPAIN SLU	FRESENIUS KABI ESPAÑA, S.A.	MEDTRONIC IBÉRICA, S.A.
ACTELION PHARMACEUTICALS ESPAÑA, S.L.	FUNDACIÓN ALICIA KOPLOWITZ	MERCK SHARP & DOHME ESPAÑA, S.A.
ALFASIGMA ESPAÑA, S.L.	GEBRO PHARMA, S.A.	MÓLNLYCKE HEALT CARE
ALLERGAN, S.A.U.	GILEAD SCIENCE, S.L.U.	NESTLÉ HEALTHCARE NUTRITION, S.A.
ALLERGY THERAPEUTICS IBERICA, S.L.U.	GLAXOSMITHKLINE, S.A.	NIPRO MEDICAL EUROPE
AMGEN, S.A.	GLOBAL BUSINESS TRAVEL SPAIN, S.L.	NORDIC PHARMA, S.A.U.
ASOCIACIÓN 11Q ESPAÑA	GRIFOLS MOVACO, SA	NOVARTIS FARMACEÚTICA, S.A.
ASTELLAS PHARMA, S.A.	INCARDIO, S.L.	NUTRICIA, S.R.L.
ASTRAZÉNECA FARMACEÚTICA SPAIN, S.A.	INCYTE BIOSCIENCES IBERIA, S.L.	ONCOGENOMICS, SL
BANCO DE SANGRE Y TEJIDOS BAXTER, S.L.	INFORMACIONES DIGITALES Y COMUNICACIÓN S.L	PERKINELMER ESPAÑA, S.L
BAYER HISPANIA, S.L.U	INTERNATIONAL HEALTH MANAGEMENT ASSOCIATES, INC.	PFIZER, S.L.U.
BIOCOMPATIBLES UK LIMITED	IPSEN PHARMA, S.A.	POLYPHOR, LTD.
BIOGEN SPAIN, S.L.	JANSSEN CILAG, S.A.	ROCHE FARMA, S.A.
BIOMERIEUX ESPAÑA, S.A.	JJP HOSPITALARIA, S.L.	SANDOZ FARMACÉUTICA, SA
BIOTEST MEDICAL, S.L.U.	JOHNSON & JOHNSON, S.A.	SANITARIA 2000, S.L.
BOEHRINGER INGELHEIM ESP, S.A.	JOTEC CARDIOVASCULAR SL	SANOFI - AVENTIS, S.A.
BRISTOL-MYERS SQUIBB, S.A.U.	KERN PHARMA, S.L.	SEDECAL MOLECULAR IMAGING, S.L.U.
BRUKER ESPAÑOLA, SA.	LABORATORIOS SERVIER, S.L.	TAKEDA FARMACEUTICA ESPAÑA, S.A.
CELGENE SL UNIPERSONAL	LABORATORIOS THEA, S.A.	TERUMO BCT ESPAÑA, S.L.U.
CHIESI ESPAÑA, S.A.	LABORATORIOS VIIV HEALTHCARE, S.L.	UCB BIOPHARMA LTDA
CLUB DEPORTIVO ELEMENTAL AGUAS ABIERTAS ARGANDA	LILLY, S.A.U.	UCB DE MEXICO, S.A, DE CV
COLOPLAST PRODUCTOS MEDICOS, S.A.	LINDE MEDICA, S.L.U.	UCB PHARMA, S.A.
COVIDIEN AG	LIVANOVA ESPAÑA, S.L.U.	URIA GESTIÓN INMOBILIARIA, S.L.
ESPIGADO DELGADO, MARTA	LIVE MED IBERIA, S.L.	VEGENAT, S.A.
FERRER INTERNACIONAL, S.A.	LUNDBECK ESPAÑA, S.A	VIAJES PACIFICO, S.A.
		VIFOR PHARMA ESPAÑA, S.L.
		W.L. GORE Y ASOCIADOS, S.L.

During this year 2019, the funding provided to the FIBHGM by Janssen-Cilag S.A. to support the «Fellowship Program for Scientific Research» came to 125,000 €.