ANNUAL SCIENTIFIC REPORT



















Instituto de Investigación Sanitaria **Gregorio Marañón**



Executive Summary SCIENTIFIC REPORT **2020**

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Unión Europea

Report prepared by the Biomedical Research Foundation of Hospital Gregorio Marañón and the Health Research Institute of Hospital Gregorio Marañón.

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Presentation

It is a pride to present the Scientific Report of the Institute for Health Research of the Hospital General Universitario Gregorio Marañón (IiSGM), with a double objective, on the one hand, to disseminate the research and innovative activity carried out before institutions and social agents and, on the other hand, to recognize the extraordinary effort made by the researchers of each Research Group. This second objective acquires a very special relevance this year, since 2020 has been, without a doubt, the most difficult in the recent history of our institution. We wish to highlight and acknowledge the dedication and extraordinary work carried out by all members of the Institute in circumstances of unprecedented complexity derived from the COVID pandemic.

The outstanding research activity carried out, despite the particularly difficult conditions mentioned, has undergone a spectacular growth (close to 40% with respect to the previous year) in the scientific production of the Institute, which has meant in 2020 reaching **6,467 impact factor points**. It is worth to pinpoint the extreme rigor with which the award of publications to the IiSGM is analyzed, which clearly determines the robustness of the indicator. Additionally, it is worth mentioning the significant number of publications (46%) led by IiSGM researchers, the degree of international collaboration in the different publications, and the proportion of originals in first decile and quartile journals (46%).

Likewise, the innovation activity of the IiSGM stands out, which allows it to boast of a portfolio of innovation assets, including two «spin-offs» and a third currently under creation, adapted to the current needs of the health system (52% of our patents are licensed) and, above all, with great potential for future growth and highly attractive for the productive and industrial sectors.

This research and innovative activity is possible thanks to the excellent capacity of researchers to **successfully attend competitive calls**, both for projects and human resources. This last aspect is especially valuable, as it is the basis for ensuring the generational renewal of the center's researchers. In this

sense, it is important to highlight the commitment of the IiSGM groups with the **training of researchers**, the result of which stands out the significant number of doctoral theses defended throughout 2020 and the ambitious **Training Plan** (with up to 13 courses accredited) developed under the coordination of the IiSGM **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 continuous quality improvement, as a result of which it has the European seal of excellence in human resources management Human Resources Strategy For Researchers (HRS4R), is the first Institute for Health Research to be fully certified under the ISO9001:2015 standard, a recognition that has recently been renewed for a new triennium.

We take this opportunity once again to express our sincere gratitude to all liSGM researchers for their efforts maintained in a context as sensitive as that represented by scientific research in hospitals. Only a cohesive collective effort, duly aligned with a strategy around improving the health of patients, provides the excellent results that are collected in this report. In the same way, it is important to express gratitude to all the **Area Coordinators**, **Group Heads**, **Research Groups**, **Research Support Services** (SAIs), Clinical Services and **especially young researchers**, who constitute the basis of the development and activity of the liSGM.

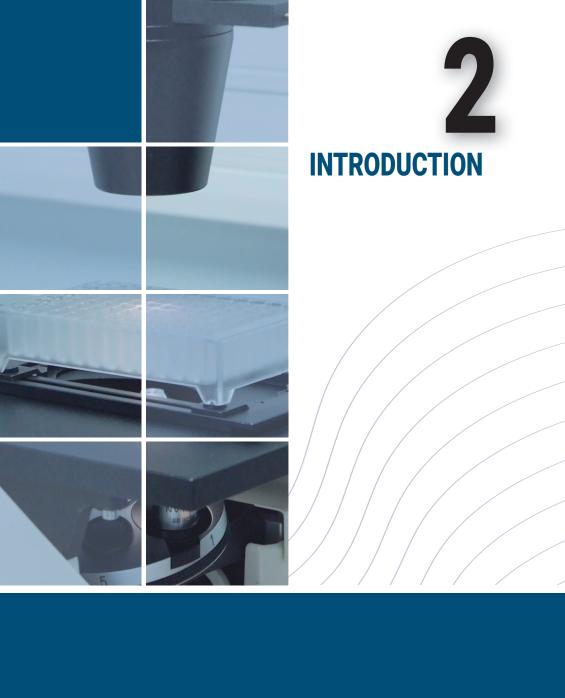
For yet another year, the results presented in this report allow us to verify that our Institution maintains its evolution and growth, generating excellent expectations for the future and placing it in a privileged position to face the enormous future challenges that are looming, to ensure, not only compliance with the requirements of the new Technical Guide for the Evaluation of Accreditations of Health Research Institutes of the Carlos III Health Institute, but, especially, to illuminate the foundations of biomedical research: observation, for generating questions in the clinical practice and multidisciplinary cooperative research to allow answering them.

Thank you very much,

Dr. Ismael Buño Borde Scientific Director (liSGM)

Dr. Joseba Barroeta Urquiza

Managing Director (Hospital General Universitario Gregorio Marañón)



Introduction

MISSION

liSGM 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

liSGM 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 Institute 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 Researchof 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):





Highlights





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 research report, we analyzed journals indexed in the main collection of the Web of Science (WOS) and in PubMed, the most popular 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 IiSGM, 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 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 Institute has pointed out as being his/her own.

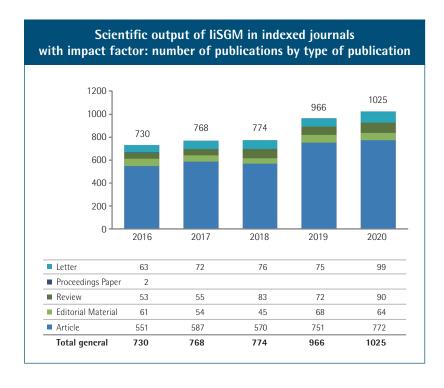
As in previous years, the total sum for the impact factor only takes into account information from indexed publications (eg, original articles, reviews, editorials, and proceedings papers) and excludes other types of publication (eg, letters to the editor and case reports). Of note, the impact factor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

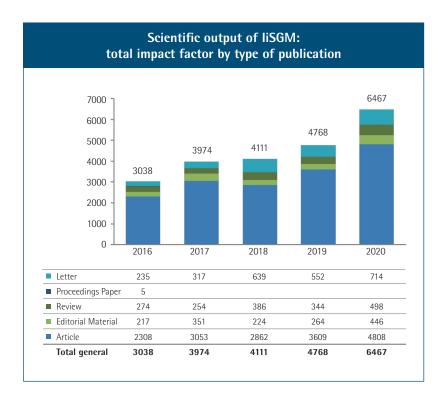
Publications involving different groups or areas of the Institute are counted individually in each group and area, although only once for the calculation of the total impact factor of the Institute.

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 Research Report.

The following graphs provide a quantitative representation of the scientific output of liSGM during the year 2020.

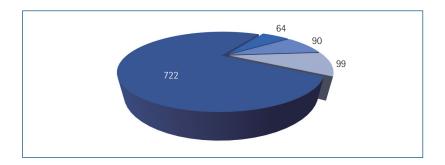
The graphs show strong consolidation of the growth trend observed in recent years, with a total of <u>1025</u> indexed publications (926 excluding letters), which represent <u>a global impact factor over 6467 points</u> [5753 excluding letters], that is, <u>an increase of 3429 points</u> since 2016, as well as <u>an increase of 1699 points</u> with respect to the previous year and 47% in the last 5 years.



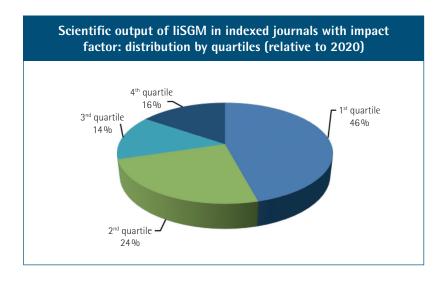


The previous figures summarizes the total impact factor corresponding to the scientific production of the liSGM for each of the last 5 years and its distribution according to the different types of publication.

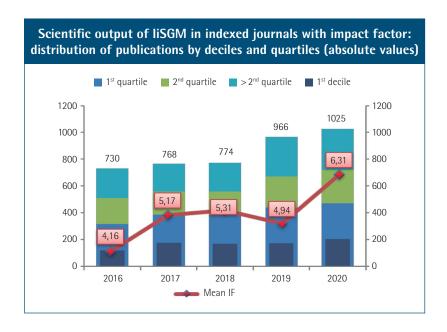
As can be observed, in this year 2020 the highest impact factor corresponds (in order) to: original articles, letters, reviews and editorials.



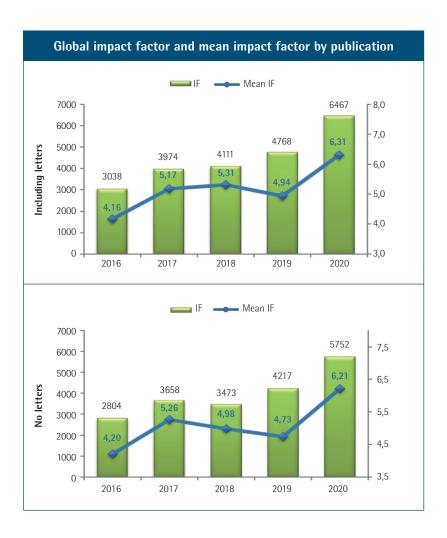
It is important to note that, once again this year and as in the two previous years, the increase in the overall impact factor was mainly due to the significant increase in the number of original articles.



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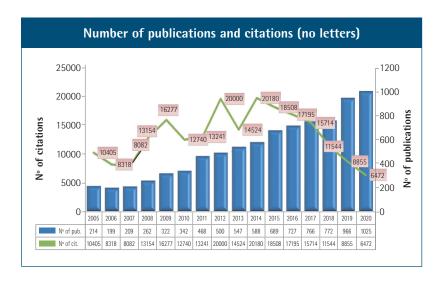
The distribution of IiSGM publications according to quartile and decile is shown in the in the two previous graphs. The absolute number of publications in the first decile and first quartile has increased significantly compared to last year.



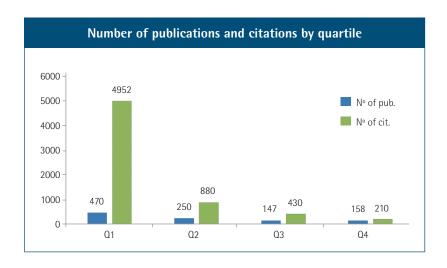




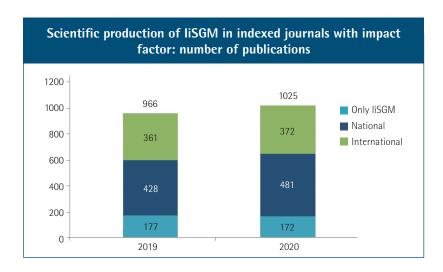
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The number of citations for Institute publications over time is logically greater in elder publications, although the number of citations in relatively recent publications (2008–2014) is noteworthy, as is the number of first-quartile citations.



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



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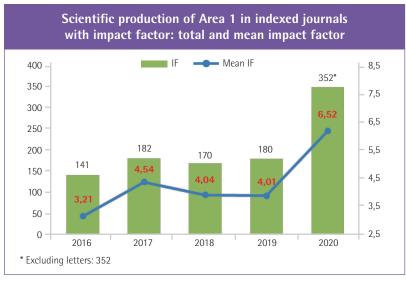
Finally, one of the most relevant elements within the scientific structure of Health Research Institutes is the grouping of research activity to priority areas, which are characterized by their scientific and social relevance and by their capacity for transferring knowledge to society.

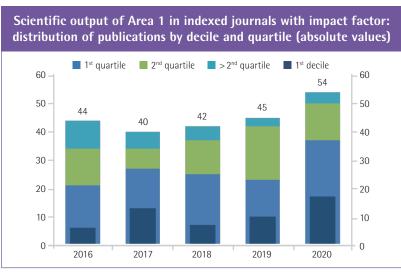
liSGM has <u>seven priority research areas</u> whose scientific activity is set out in detail below in 2 figures per Research Area:

- 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.

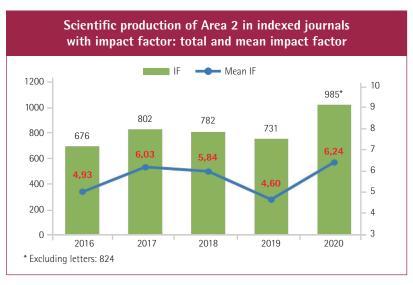
Both figures show the scientific output for the last 5 years:

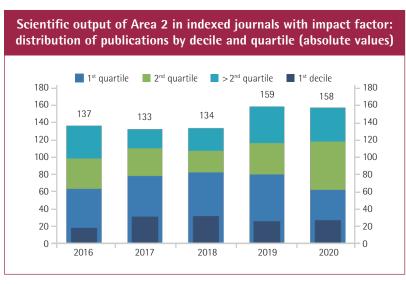
AREA 1: BIOMEDICAL ENGINEERING



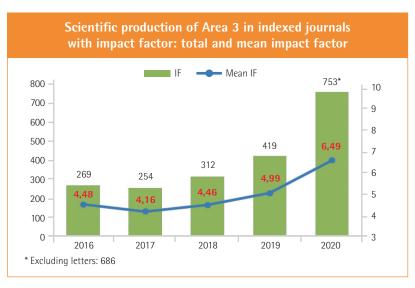


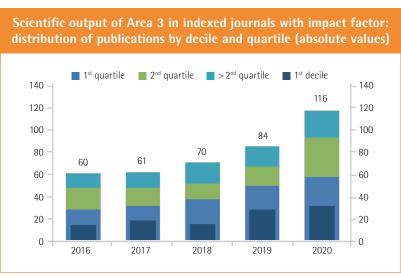
AREA 2: CARDIOVASCULAR DISEASES



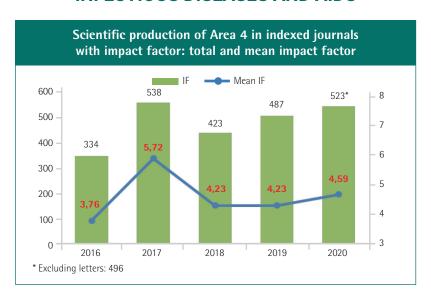


AREA 3: NEUROSCIENCE AND MENTAL HEALTH

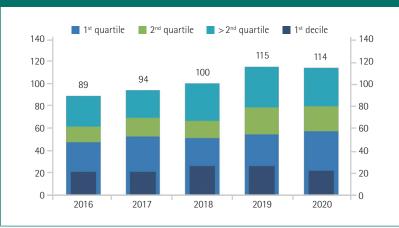




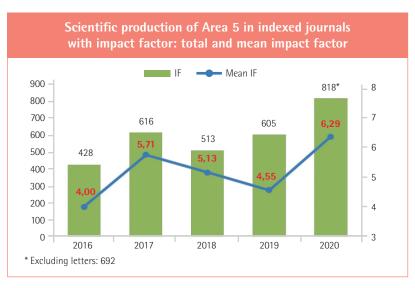
AREA 4: CLINICAL MOCROBIOLOGY, INFECTIOUS DISEASES AND AIDS

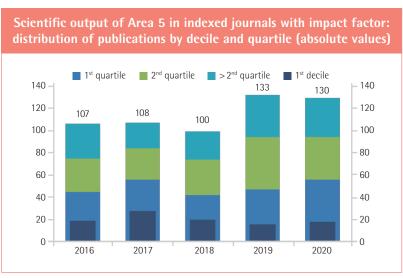


Scientific output of Area 4 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)

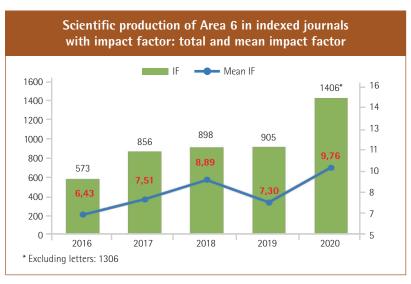


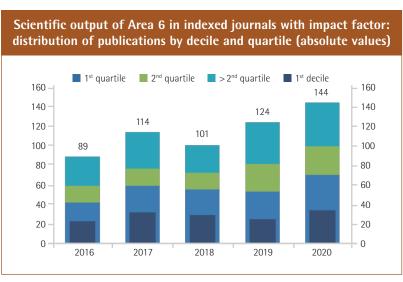
AREA 5: DISEASES OF THE IMMUNE SYSTEM



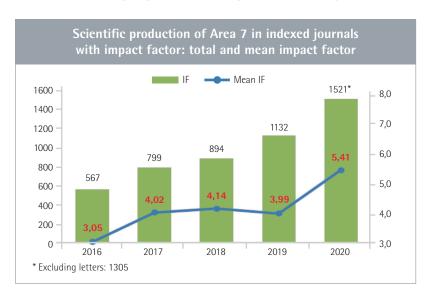


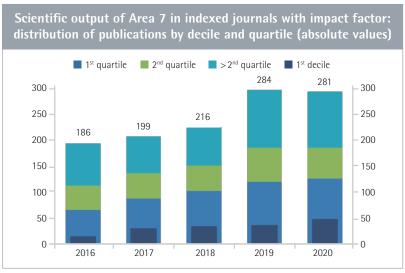
AREA 6: TRANSLATIONAL ONCOLOGY



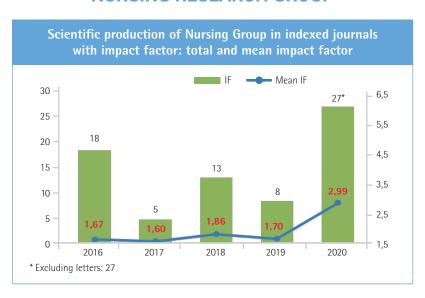


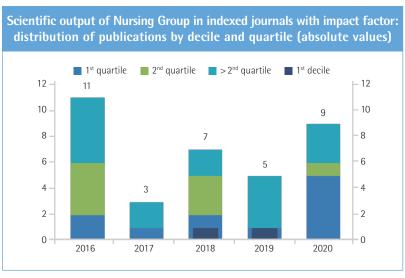
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION





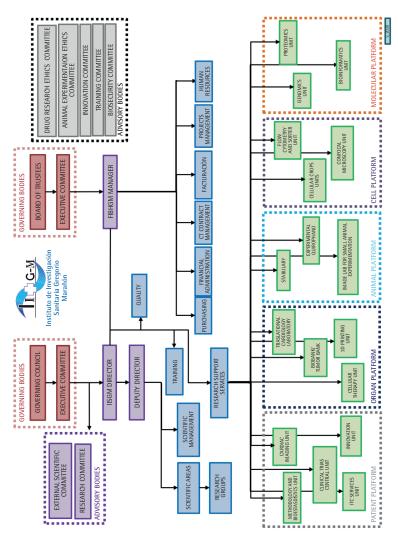
NURSING RESEARCH GROUP





Organizational Structure of IiSGM

1. ORGANIZATION CHART



Structure of research areas and groups

AREA 1: Biomedical Engineering
Coordinator: Manuel Desco Menéndez

Group	Group Head	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 Head	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.

STRUCTURE OF RESEARCH AREAS AND GROUPS

AREA 3: Neuroscience and Mental Health

Coordinator: Celso Arango López

Group	Group Head	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 Head	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 Head	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	Mª 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 Head	Type of Group	Organization
6.01 Interdisciplinary oncology and biotechnology	Javier Serrano Andreu	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 Diez 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 Head	Type of Group	Organization
7.01 Vascular damage and inflammation in chronic kidney disease, dialysis, and kidney transplantation. Pathophysiology ofthe kidney	María de los Ángeles Goicoechea Díezhandino	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 insuffi ciency and respiratory disorders of sleep	Luis Puente Maestu/ Ignacio Garutti Martínez	CONSOLIDATED	HGUGM
7.06 Regenerative medicine in plastic surgery	Rosa Pérez Cano/ José Mª Lasso	EMERGING	HGUGM
7.07 Experimental kidney transplantation	Enrique Lledó García	EMERGING	HGUGM
7.08 Pediatric endocrinology	María Dolores Rodríguez Arnao	ASOCIADTED	HGUGM

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

STRUCTURE OF RESEARCH AREAS AND GROUPS

Group	Group Head	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 Peraita Adrados	ASOCIADTED	HGUGM
7.12 Emergency medicine	Javier Muñoz González	ASOCIADTED	HGUGM
7.16 Regenerative medicine and system development: cardiovascular and osteochondral	Mª 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	Nieves López Freneña	EMERGING	HGUGM
7.27 Hospital pharmacy and pharmacogenomics	María Sanjurjo Sáez	CONSOLIDATED	HGUGM
7.28 Clinical nutrition	Mª Cristina de la Cuerda Compés	EMERGING	HGUGM
7.29 Vascular pathophysiology and pharmacology	Francisco Pérez Vizcaíno	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 Crespo Cobo/ Marta Supervía Pola	EMERGING	HGUGM

Nursing Research Group

Coordinator: Ana García Pozo

Group	Group Head	Organization
Research in nursing	Ana María García Pozo	HGUGM

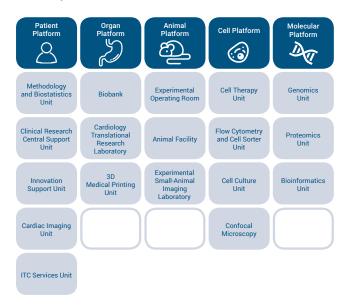
UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UC3M: Universidad Carlos III.

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.



RESEARCH SUPPORT SERVICES (RSSs)

Publications generated with the participation of the Research Suppot 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	Methodology and Biostatistics Unit	15		
Platform	Cardiac Imagin Unit	27	6	1
	Cell Therapy Unit	2		
Organ	Traslational Cardiology Laboratory	23	5	2
Platform	Biobank	16		1
Animal	Experimental Operating Room	2		
Platform	Medical Imaging laboratory	22		6
	Flow Cytometry and Cell Sorter Unit	16		1
Cell Platform	Cell Culture Unit	4		
	Confocal Microscopy Unit	5		
Molecular	Genomics Unit	4		
Platform	Bioinformatics Unit	0		

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. IiSGM'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 IiSGM 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 entrepreneurism closer to health/research professionals.
- Establishing channels to enable appropriate training and information for professionals working in innovation.

INNOVATION, KNOWLEDGE TRANSFER, AND TRANSLATION TO PRACTICE

- 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 liSGM by offering ad hoc support services, both as interlocutors and as managers of innovation projects.

In 2020, its structure was as follows:

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

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 covers 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: Ismael Buño Borde (IiSGM Scientific Director).
- Vicepresidente: Manuel Desco Menéndez (Innovation Support Unit Director).
- D. Thierry Bardinet (FIBHGM Manager)

Members:

- Francisco Fernández-Avilés Díaz (Head of Cardiology Service).
- Rubén Pérez-Mañanes (Head of Orthopedic and Traumatic Surgery Section).
- Ana Herranz (Head of Hospital Pharmacy Section).
- Rafael Correa (Head of Group of the Immunoregulation Laboratory).

- Iván Márquez (Coordinator of the Hereditary-Familial Cancer Unit).
- Guillermo Rodríguez (Area Specialist in the Anesthesia and Resuscitation Service).
- Carlos Blanco (Vice-president of Research and Transfer of the UC3M).
- Sonia García de San José (Deputy Manager of HGUGM).
- Secretaria: Beatriz Pérez de Urbina (Innovation Support Unit Project Manager).

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 2020 can be seen in the following areas:

1. Intellectual and industrial property

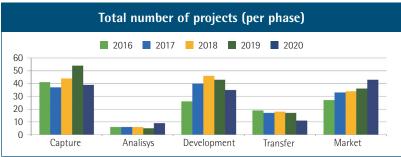
- a) Intellectual property applied for: 4.
- b) Industrial property applied for:
 - 8 international patents.
 - 1 national patent.
 - 1 utility model.
 - 1 trademark.
- c) Industrial property awarded:
 - 1 international patent.
 - 1 national patent.
 - 1 trademark.
- d) Transfer of patents: 1 patent family

2. Innovation projects portfolio:

During 2020, 17 new innovation projects were started in the unit. The year closed with 137 active projects. The following figures show the distribution of projects classified by area and development phase over the last 5 years.

With respect to calls for innovation projects, IiSGM has obtained 765.005 €.





3. Contracts:

A total of **9** new contracts have been closed, both with companies and national and international organizations.

Other initiatives and achievements of the Unit during 2020 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.
- One project selected obtained funding from the FIPSE call proposals «Estudios de viavilidad de las innovaciones en salud»

- The certification of the R+D+I management system has been validated according to the UNE-166002:2014 standart.
- 41 meetings have been held with companies, collaborators and internal researchers.
- 137 innovation projects managed.
- Participation of the unit in informative sessions on innovation in national events.
- Participation of the unit in 47 informative sessions on innovation innational events, and 3 sessions given by the Innovation Support Unit (ISU).

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-invencio-nes-del-iisgm/

INNOVATION PORTFOLIO

Below, we show the project portfolio, or «innovation funnel», generated by liSGM and active as at December 2020.

	ICTs Health	Material and devices	Medicines and pharmaceutical products	Biotechnology and molecular diagnosis	Imaging	Care organization
Ideas proposed (not developed)	6	11	53	6	3	10
ldeas under assessment	2	3	0	3	0	1
ldeas under development	6	10	1	9	3	6
ldeas under transfer	3	1	1	4	1	1
Ideas in the market	11	6	4	3	10	9

^{*} ICT: information and communications technology.

The intellectual and industrial property of the liSGM 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/

INNOVATION, KNOWLEDGE TRANSFER, AND TRANSLATION TO PRACTICE

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&II, 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:

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 liSGM de Universitat Politécnica de Valencia. Its team includes Andreu Climent (CEO), Francisco Fernández-Avilés and Felipe Atienza of Cardiovascular Diseases Area of the liSGM.

Interventional and non interventional clinica studies

During the year 2020, a total of **1038** clinical studies (clinical trials and observational studies) were active in our hospital. A total of 208 studies were implemented.

Approximately 92% of the clinical trials with medicines started during **2020** were Phase I, II, and III studies. As for the distribution by research areas, almost **46**% of the clinical trials, were led by the Translational Oncology Area (Area 6).

ACTIVE CLINICAL STUDIES			
2016	1048		
2017	1226		
2018	1190		
2019	1115		
2020 1038			

	NEW CLINICAL STUDIES						
	Clinical Trials Observational studies Total						
2016	125	57	182				
2017	148	83	231				
2018	136	74	210				
2019	140	68	208				
2020	162	81	251				

INTERVENTIONAL AND NON INTERVENTIONAL CLINICA STUDIES

DISTRIBUTION OF CLINICAL TRIALS SIGNED BY PHASE (%)						
	2016	2017	2018	2019	2020	
Phase I	7.2	6.8	11.7	7.28	5029	
Phase II	30.4	30.8	34.5	37.1	40.00	
Phase III	56.8	52.5	48	43.7	45.88	
Phase IV	2.4	6.3	3.6	4.6	4.11	
Others (Medical device, Vaccines)	6.4	3.6	2.2	7.29	4.70	

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2020 (National/International)					
N° %					
National 92 36.5					
International	160	63.4			

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2020 By Research Area of Iisgm					
N° %					
Area 1	0	0			
Area 2	10	3.98			
Area 3	26	10.34			
Area 4	20	7.96			
Area 5	27	10.74			
Area 6	115	45.77			
Area 7	36	14.32			
Nursing group	0	0			
Associated clinicians	17	7.6			

Fundings of IiSGM

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.

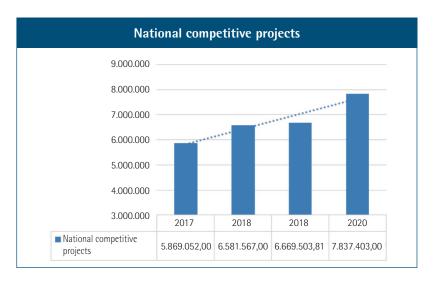
The total income generated by IiSGM researchers 'own activity in 2019 came to 20.033.609 €, that is 21% more than in 2019.

To these revenues must be added the nominative subsidy granted to this foundation by the Consejeria of Health of the Community of Madrid, which would raise total revenues to 20.655.829 €.

	2016	2015	2014	2019	2020
Total income generated by researchers	14,219,400 €	14,431,258 €	15,503,687 €	16,476,182 €	20,033,609 €
Nominative subsidy C. Madrid			612,220 €	622,220 €	622,220 €

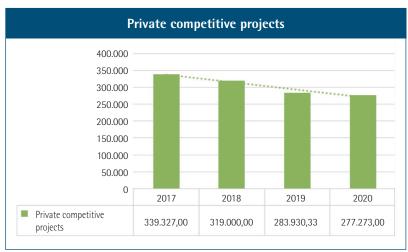
As in previous years, this income is earmarked for the support and development of research activities in the groups.

EVOLUTION OF INCOME GENERATED BY RESEARCHERS BY CATEGORY

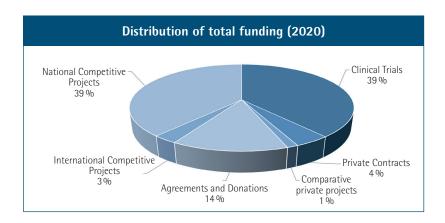




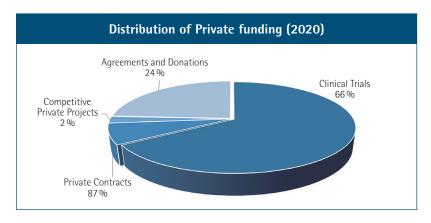




As far as the distribution of income is concerned, in 2020, for the first time, the income from Clinical Studies has equalled the income generated by national competitive projects representing with 39% each category, in spite of all funds made available through competitive calls for COVID-19 related research.



Of all income generated exclusively by researchers, 59 % was from the private sector, reaching the figure of 11.944.497,00 € in **2020**, 66 % of this amount was from clinical studies activity.



Despite the reduction in funds available for research projects through competitive call, especially in the public sector, the liSGM continues to have a considerable ability to generate income from competitive calls.

In fact funds generated through National Competitive calls have increase 17,5% over the last 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 2020 by area of research

		Researc	ch projects	Human	resources
			Not managed by FIBHGM		Not managed by FIBHGM
AREA 1: BIOMEDICAL	Group 1.01: Advanced technology applications and human health	11	6	11	9
ENGINEERING	GROUP 1.02: Signal processing		8		8
	GROUP 2.01: Natural history of heart disease	27		5	
	GROUP 2.02: Cardiovascular pathophysiology		2		3
AREA 2: CARDIOVASCULAR	GROUP 2.03: Cardiac celular electrophysiology		3		6
DISEASE	GROUP 2.05: Cardiology and heart transplantation in infants	6			
	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	33		17	
	GROUP 3.03B: Neurologic diseases	2			
AREA 4: CLINICAL MICROBIOLOGY, INFECTIOUS DISEASES AND AIDS	GROUP 4.01: Infectious diseases	19		18	

LIST OF ACTIVE PROJECTS IN 2020 BY AREA OF RESEARCH

(Cont.)

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

(Cont.)

		Researc	h projects	Human	resources
			Not managed by FIBHGM		Not managed by FIBHGM
	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			
	GROUP 7.20: Anesthesia, toxins, and arrhythmias	1			
	GROUP 7.21 Biopathology of aging	1			
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.22 Pathophysiology of the neonate and developing child	3			
	GROUP 7.25: Artificial circulation laboratory	1		2	
	GROUP 7.27: Hospital pharmacy and pharmacogenomics	6		1	
	GROUP 7.28: Clinical nutrition	1			
	GROUP 7.29: Pharmacology and vascular pathophysiology	4		1	
	GROUP 7.31 Pathophysiology in women, pregnancy, labor, and puerperium	2		1	
NURSING CARE GROUP					

Scientific publications

The list presented below shows all the referenced publications in which investigators from the IiSGM participated in during 2020.

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 in the main collection of the Web of Science (WOS) 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
ACTA CHIRURGICA BELGICA	1,09	1	1,09
ACTA ONCOLOGICA	4,089	1	4,089
ACTA PSYCHIATRICA SCANDINAVICA	6,392	1	6,392
ACTAS ESPANOLAS DE PSIQUIATRIA	1,196	3	3,588
ACTAS UROLOGICAS ESPANOLAS	0,994	21	20,874
ADICCIONES	2,979	1	2,979
AGEING RESEARCH REVIEWS	10,895	1	10,895
AGING & MENTAL HEALTH	3,658	1	3,658
AIDS	4,177	2	8,354
ALIMENTARY PHARMACOLOGY & THERAPEUTICS	8,171	1	8,171
ALLERGY	13,146	1	13,146
ALZHEIMERS & DEMENTIA	21,566	1	21,566
AMERICAN HEART JOURNAL	4,749	2	9,498
AMERICAN JOURNAL OF CARDIOLOGY	2,778	3	8,334
AMERICAN JOURNAL OF CARDIOVASCULAR DRUGS	3,571	1	3,571

(Continued)

Journal	IF	Nº	Amount IF
AMERICAN JOURNAL OF EPIDEMIOLOGY	4,897	1	4,897
AMERICAN JOURNAL OF HEALTH-SYSTEM PHARMACY	2,637	2	5,274
AMERICAN JOURNAL OF HEMATOLOGY	10,047	2	20,094
AMERICAN JOURNAL OF HUMAN GENETICS	11,025	1	11,025
AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY	5,464	1	5,464
AMERICAN JOURNAL OF PSYCHIATRY	18,112	1	18,112
AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE	21,405	1	21,405
AMERICAN JOURNAL OF THERAPEUTICS	2,688	1	2,688
AMERICAN JOURNAL OF TRANSPLANTATION	8,086	3	24,258
ANAEROBE	3,331	3	9,993
ANALES DE PEDIATRIA	1,5	19	28,5
ANESTHESIA AND ANALGESIA	5,108	2	10,216
ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY	6,347	2	12,694
ANNALS OF CLINICAL MICROBIOLOGY AND ANTIMICROBIALS	3,944	1	3,944
ANNALS OF DIAGNOSTIC PATHOLOGY	2,09	1	2,09
ANNALS OF GENERAL PSYCHIATRY	3,455	1	3,455
ANNALS OF HEMATOLOGY	3,673	2	7,346
ANNALS OF NONINVASIVE ELECTROCARDIOLOGY	1,468	1	1,468
ANNALS OF ONCOLOGY	32,976	4	131,904
ANNALS OF PHARMACOTHERAPY	3,154	1	3,154
ANNALS OF THE RHEUMATIC DISEASES	19,103	3	57,309
ANTIBIOTICS-BASEL	4,639	1	4,639
ANTIMICROBIAL AGENTS AND CHEMOTHERAPY	5,191	3	15,573
ANTIOXIDANTS	6,312	2	12,624
APMIS	3,205	1	3,205
APPLIED IMMUNOHISTOCHEMISTRY & MOLECULAR MORPHOLOGY	2,085	1	2,085
APPLIED SCIENCES-BASEL	2,679	2	5,358

(Continued)

Journal	IF	Nº	Amount IF
ARCHIVOS ARGENTINOS DE PEDIATRIA	0,635	3	1,905
ARCHIVOS DE BRONCONEUMOLOGIA	4,872	8	38,976
ARCHIVOS ESPANOLES DE UROLOGIA	0,436	3	1,308
ARTERÍOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY	8,311	1	8,311
ARTHRITIS CARE & RESEARCH	4,794	5	23,97
ASSESSMENT	4,667	1	4,667
ATENCION PRIMARIA	1,137	1	1,137
BASIC RESEARCH IN CARDIOLOGY	17,165	1	17,165
B-ENT	0,082	1	0,082
BIOCONJUGATE CHEMISTRY	4,774	1	4,774
BIOLOGICAL PSYCHIATRY	13,382	1	13,382
BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION	5,742	5	28,71
BIOLOGY-BASEL	5,079	1	5,079
BIOMEDICAL OPTICS EXPRESS	3,732	1	3,732
BIOMETRICAL JOURNAL	2,207	1	2,207
BLOOD CANCER JOURNAL	11,037	1	11,037
BMC ANESTHESIOLOGY	2,217	1	2,217
BMC CANCER	4,43	1	4,43
BMC INFECTIOUS DISEASES	3,09	2	6,18
BMC MEDICAL GENETICS	2,103	1	2,103
BMC MEDICINE	8,775	2	17,55
BMC PEDIATRICS	2,125	1	2,125
BMC PREGNANCY AND CHILDBIRTH	3,007	2	6,014
BMC PSYCHIATRY	3,63	1	3,63
BMJ OPEN	2,692	1	2,692
BMJ OPEN DIABETES RESEARCH & CARE	3,388	1	3,388
BONE	4,398	1	4,398

(Continued)

Journal	IF	Nº	Amount IF
BONE MARROW TRANSPLANTATION	5,483	5	27,415
BRAIN	13,501	1	13,501
BRAIN SCIENCES	3,394	2	6,788
BRAZILIAN JOURNAL OF CARDIOVASCULAR SURGERY	1,312	2	2,624
BRAZILIAN JOURNAL OF OTORHINOLARYNGOLOGY	1,811	1	1,811
BRAZILIAN JOURNAL OF PHYSICAL THERAPY	3,377	1	3,377
BREAST	4,38	2	8,76
BRITISH JOURNAL OF ANAESTHESIA	9,166	1	9,166
BRITISH JOURNAL OF DERMATOLOGY	9,302	1	9,302
BRITISH JOURNAL OF HAEMATOLOGY	6,998	5	34,99
BRITISH JOURNAL OF ORAL & MAXILLOFACIAL SURGERY	1,651	1	1,651
BRITISH JOURNAL OF SURGERY	6,939	4	27,756
CANADIAN JOURNAL OF CARDIOLOGY	5,223	1	5,223
CANCER BIOLOGY & MEDICINE	4,248	1	4,248
CANCER CHEMOTHERAPY AND PHARMACOLOGY	3,333	1	3,333
CANCER TREATMENT REVIEWS	12,111	1	12,111
CANCERS	6,639	4	26,556
CARDIOLOGY	1,869	2	3,738
CARDIOVASCULAR RESEARCH	10,787	2	21,574
CATHETERIZATION AND CARDIOVASCULAR INTERVENTIONS	2,692	1	2,692
CELL	41,582	1	41,582
CELLS	6,6	6	39,6
CHEST	9,41	1	9,41
CIRCULATION	29,69	2	59,38
CIRCULATION-ARRHYTHMIA AND ELECTROPHYSIOLOGY	6,568	1	6,568
CIRCULATION-CARDIOVASCULAR IMAGING	7,792	1	7,792

(Continued)

Journal	IF	Nº	Amount IF
CIRCULATION-CARDIOVASCULAR QUALITY AND OUTCOMES	5,882	1	5,882
CIRUGIA ESPANOLA	1,653	3	4,959
CLINICA CHIMICA ACTA	3,786	1	3,786
CLINICAL & TRANSLATIONAL ONCOLOGY	3,405	20	68,1
CLINICAL AND EXPERIMENTAL RHEUMATOLOGY	4,473	4	17,892
CLINICAL BREAST CANCER	3,225	1	3,225
CLINICAL CANCER RESEARCH	12,531	3	37,593
CLINICAL CARDIOLOGY	2,882	1	2,882
CLINICAL CHILD PSYCHOLOGY AND PSYCHIATRY	2,544	1	2,544
CLINICAL COLORECTAL CANCER	4,481	2	8,962
CLINICAL DRUG INVESTIGATION	2,859	2	5,718
CLINICAL GASTROENTEROLOGY AND HEPATOLOGY	11,382	1	11,382
CLINICAL GENITOURINARY CANCER	2,872	1	2,872
CLINICAL INFECTIOUS DISEASES	9,079	6	54,474
CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY	8,237	1	8,237
CLINICAL KIDNEY JOURNAL	4,452	3	13,356
CLINICAL LUNG CANCER	4,785	1	4,785
CLINICAL MICROBIOLOGY AND INFECTION	8,067	6	48,402
CLINICAL NEUROPHYSIOLOGY	3,708	1	3,708
CLINICAL NURSING RESEARCH	2,075	1	2,075
CLINICAL NUTRITION	7,324	8	58,592
CLINICAL RADIOLOGY	2,35	1	2,35
CLINICAL TRANSPLANTATION	2,863	1	2,863
CNS DRUGS	5,749	1	5,749
COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE	5,428	1	5,428
COMPUTERS IN BIOLOGY AND MEDICINE	4,589	1	4,589
CRITICAL CARE	9,097	5	45,485

(Continued)

Journal	IF	Nº	Amount IF
CRITICAL CARE MEDICINE	7,598	1	7,598
CURRENT MEDICAL RESEARCH AND OPINION	2,58	1	2,58
CURRENT UROLOGY REPORTS	3,092	1	3,092
DERMATITIS	4,845	1	4,845
DERMATOLOGIC SURGERY	3,398	1	3,398
DERMATOLOGIC THERAPY	2,851	5	14,255
DERMATOLOGY	5,366	1	5,366
DIAGNOSTIC MICROBIOLOGY AND INFECTIOUS DISEASE	2,803	2	5,606
DIAGNOSTICS	3,706	1	3,706
DRUGS	9,546	1	9,546
EARLY INTERVENTION IN PSYCHIATRY	2,732	1	2,732
EJSO	4,424	2	8,848
EMERGENCIAS	3,881	3	11,643
ENDOCRINE PRACTICE	3,443	1	3,443
ENDOCRINOLOGIA DIABETES Y NUTRICION	1,417	3	4,251
ENDOSCOPY	10,093	1	10,093
ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA	1,731	12	20,772
ENTROPY	2,524	2	5,048
EPIDEMIOLOGY AND PSYCHIATRIC SCIENCES	6,892	1	6,892
EPILEPSY & BEHAVIOR	2,937	1	2,937
ESC HEART FAILURE	4,411	2	8,822
ESMO OPEN	6,54	2	13,08
EUROINTERVENTION	6,534	1	6,534
EUROPACE	5,214	4	20,856
EUROPEAN ARCHIVES OF PSYCHIATRY AND CLINICAL NEUROSCIENCE	5,27	1	5,27
EUROPEAN CHILD & ADOLESCENT PSYCHIATRY	4,785	4	19,14
EUROPEAN GERIATRIC MEDICINE	1,71	1	1,71

(Continued)

Journal	IF	Nº	Amount IF
EUROPEAN HEART JOURNAL	29,983	7	209,881
EUROPEAN HEART JOURNAL SUPPLEMENTS	1,803	1	1,803
EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE	4,696	1	4,696
EUROPEAN HEART JOURNAL-CARDIOVASCULAR IMAGING	6,875	1	6,875
EUROPEAN HEART JOURNAL-CARDIOVASCULAR PHARMACOTHERAPY	6,617	3	19,851
EUROPEAN JOURNAL OF ANAESTHESIOLOGY	4,33	1	4,33
EUROPEAN JOURNAL OF CANCER	9,162	1	9,162
EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY	4,191	1	4,191
EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES	3,267	1	3,267
EUROPEAN JOURNAL OF DERMATOLOGY	3,328	5	16,64
EUROPEAN JOURNAL OF GASTROENTEROLOGY & HEPATOLOGY	2,566	1	2,566
EUROPEAN JOURNAL OF HAEMATOLOGY	2,997	3	8,991
EUROPEAN JOURNAL OF HOSPITAL PHARMACY	1,652	3	4,956
EUROPEAN JOURNAL OF INTERNAL MEDICINE	4,487	6	26,922
EUROPEAN JOURNAL OF NEUROLOGY	6,089	2	12,178
EUROPEAN JOURNAL OF PAEDIATRIC NEUROLOGY	3,14	1	3,14
EUROPEAN JOURNAL OF PEDIATRICS	3,183	4	12,732
EUROPEAN JOURNAL OF TRAUMA AND EMERGENCY SURGERY	3,693	1	3,693
EUROPEAN NEUROPSYCHOPHARMACOLOGY	4,6	3	13,8
EUROPEAN PSYCHIATRY	5,361	1	5,361
EUROPEAN RESPIRATORY JOURNAL	16,671	2	33,342
EUROPEAN UROLOGY	20,096	1	20,096
EUROSURVEILLANCE	6,307	1	6,307
EXPERIMENTAL HEMATOLOGY & ONCOLOGY	5,133	2	10,266
EXPERT OPINION ON DRUG SAFETY	4,25	1	4,25
EXPERT OPINION ON PHARMACOTHERAPY	3,889	1	3,889

(Continued)

Journal	IF	Nº	Amount IF
EXPERT REVIEW OF HEMATOLOGY	2,929	1	2,929
EXTREME MECHANICS LETTERS	4,567	1	4,567
FASEB JOURNAL	5,191	1	5,191
FOOT AND ANKLE SURGERY	2,705	1	2,705
FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY	5,89	1	5,89
FRONTIERS IN CARDIOVASCULAR MEDICINE	6,05	1	6,05
FRONTIERS IN CELLULAR AND INFECTION MICROBIOLOGY	5,293	2	10,586
FRONTIERS IN GENETICS	4,599	1	4,599
FRONTIERS IN IMMUNOLOGY	7,561	4	30,244
FRONTIERS IN MICROBIOLOGY	5,64	1	5,64
FRONTIERS IN NEUROLOGY	4,003	3	12,009
FRONTIERS IN NEUROSCIENCE	4,677	1	4,677
FRONTIERS IN ONCOLOGY	6,244	2	12,488
FRONTIERS IN PEDIATRICS	3,418	2	6,836
FRONTIERS IN PHARMACOLOGY	5,81	1	5,81
FRONTIERS IN PHYSIOLOGY	4,566	3	13,698
FRONTIERS IN PSYCHIATRY	4,157	5	20,785
FRONTIERS IN SURGERY	2,718	1	2,718
FUTURE GENERATION COMPUTER SYSTEMS-THE INTERNATIONAL JOURNAL OF ESCIENCE	7,187	5	35,935
FUTURE ONCOLOGY	3,404	2	6,808
gastroenterologia y hepatologia	2,102	16	33,632
GASTROINTESTINAL ENDOSCOPY	9,427	1	9,427
GENES	4,096	1	4,096
GLAND SURGERY	2,953	1	2,953
GLOBAL HEART	3,426	1	3,426
GUT	23,059	2	46,118
HAEMATOLOGICA	9,941	4	39,764

(Continued)

Journal	IF	Nº	Amount IF
HEALTH INFORMATICS JOURNAL	2,681	1	2,681
HEART	5,994	2	11,988
HEART AND VESSELS	2,037	1	2,037
HEART FAILURE CLINICS	3,179	1	3,179
HEMATOLOGICAL ONCOLOGY	5,271	1	5,271
HEPATOLOGY	17,425	2	34,85
HISTOLOGY AND HISTOPATHOLOGY	2,303	1	2,303
HIV MEDICINE	3,18	1	3,18
HUMAN BRAIN MAPPING	5,038	1	5,038
HUMAN MOLECULAR GENETICS	6,15	1	6,15
HUMAN REPRODUCTION	6,918	1	6,918
HYPERTENSION	10,19	1	10,19
IEEE ACCESS	3,367	2	6,734
IEEE TRANSACTIONS ON INFORMATION THEORY	2,501	1	2,501
IEEE TRANSACTIONS ON MEDICAL IMAGING	10,048	2	20,096
IEEE TRANSACTIONS ON SIGNAL PROCESSING	4,931	3	14,793
IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS	7,016	1	7,016
IMMUNITY & AGEING	6,4	1	6,4
INDIAN JOURNAL OF SURGERY	0,656	1	0,656
INFECTIOUS DISEASES	3,404	2	6,808
INFECTIOUS DISEASES AND THERAPY	5,322	3	15,966
INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED	2,586	2	5,172
INTENSIVE CARE MEDICINE	17,44	1	17,44
INTERNAL AND EMERGENCY MEDICINE	3,397	1	3,397
INTERNAL MEDICINE JOURNAL	2,048	1	2,048
INTERNATIONAL EMERGENCY NURSING	2,142	1	2,142
INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS	5,283	3	15,849

(Continued)

Journal	IF	Nº	Amount IF
INTERNATIONAL JOURNAL OF ARTIFICIAL ORGANS	1,595	1	1,595
INTERNATIONAL JOURNAL OF CANCER	7,396	3	22,188
INTERNATIONAL JOURNAL OF CARDIOLOGY	4,164	9	37,476
INTERNATIONAL JOURNAL OF CARDIOVASCULAR IMAGING	2,357	1	2,357
INTERNATIONAL JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE	3,355	4	13,42
INTERNATIONAL JOURNAL OF COLORECTAL DISEASE	2,571	1	2,571
INTERNATIONAL JOURNAL OF DERMATOLOGY	2,736	2	5,472
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	3,39	8	27,12
INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES	3,623	1	3,623
INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES	5,923	6	35,538
INTERNATIONAL JOURNAL OF MORPHOLOGY	0,519	1	0,519
INTERNATIONAL JOURNAL OF OSTEOPATHIC MEDICINE	2,149	1	2,149
INTERNATIONAL JOURNAL OF PSYCHOPHYSIOLOGY	2,997	1	2,997
INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS	7,038	1	7,038
INTERNATIONAL JOURNAL OF STD & AIDS	1,359	1	1,359
INTERNATIONAL JOURNAL OF TUBERCULOSIS AND LUNG DISEASE	2,373	1	2,373
INTERNATIONAL PSYCHOGERIATRICS	3,878	1	3,878
INVESTIGACION CLINICA	0,683	1	0,683
ISCIENCE	5,458	1	5,458
JACC-CARDIOVASCULAR IMAGING	14,805	1	14,805
JACC-CARDIOVASCULAR INTERVENTIONS	11,195	3	33,585
JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES	3,731	2	7,462
JAMA DERMATOLOGY	10,282	1	10,282
JAMA ONCOLOGY	31,777	2	63,554
JAMA PSYCHIATRY	21,596	2	43,192
JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION	56,272	1	56,272

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Journal	IF	Nº	Amount IF
JMIR MHEALTH AND UHEALTH	4,773	3	14,319
JOURNAL DER DEUTSCHEN DERMATOLOGISCHEN GESELLSCHAFT	5,584	1	5,584
JOURNAL FRANCAIS D OPHTALMOLOGIE	0,818	1	0,818
JOURNAL OF AFFECTIVE DISORDERS	4,839	3	14,517
JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY	10,793	1	10,793
JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE	8,861	5	44,305
JOURNAL OF ALZHEIMERS DISEASE	4,472	2	8,944
JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY	5,79	3	17,37
JOURNAL OF ARTHROPLASTY	4,757	2	9,514
JOURNAL OF ATTENTION DISORDERS	3,256	2	6,512
JOURNAL OF AUTISM AND DEVELOPMENTAL DISORDERS	4,291	1	4,291
JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME	5,284	1	5,284
JOURNAL OF CARDIAC SURGERY	1,62	1	1,62
JOURNAL OF CARDIOPULMONARY REHABILITATION AND PREVENTION	2,081	1	2,081
JOURNAL OF CARDIOVASCULAR MEDICINE	2,16	1	2,16
JOURNAL OF CARDIOVASCULAR PHARMACOLOGY AND THERAPEUTICS	2,457	1	2,457
JOURNAL OF CARDIOVASCULAR TRANSLATIONAL RESEARCH	4,132	1	4,132
JOURNAL OF CELLULAR AND MOLECULAR MEDICINE	5,31	1	5,31
JOURNAL OF CHILD AND ADOLESCENT PSYCHOPHARMACOLOGY	2,576	1	2,576
JOURNAL OF CLINICAL APHERESIS	2,821	1	2,821
JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM	5,958	1	5,958
JOURNAL OF CLINICAL MEDICINE	4,241	22	93,302
JOURNAL OF CLINICAL MICROBIOLOGY	5,948	1	5,948
JOURNAL OF CLINICAL NEUROSCIENCE	1,961	1	1,961
JOURNAL OF CLINICAL ONCOLOGY	44,544	3	133,632
JOURNAL OF CLINICAL PATHOLOGY	3,411	1	3,411

(Continued)

Journal	IF	Nº	Amount IF
JOURNAL OF CLINICAL PERIODONTOLOGY	8,728	1	8,728
JOURNAL OF CLINICAL PSYCHIATRY	4,384	1	4,384
JOURNAL OF CRANIOFACIAL SURGERY	1,046	1	1,046
JOURNAL OF DERMATOLOGY	4,005	1	4,005
JOURNAL OF FOOT & ANKLE SURGERY	1,286	1	1,286
JOURNAL OF FUNGI	5,816	2	11,632
JOURNAL OF GASTROINTESTINAL SURGERY	3,452	1	3,452
JOURNAL OF HEART AND LUNG TRANSPLANTATION	10,247	3	30,741
JOURNAL OF HEMATOLOGY & ONCOLOGY	17,388	2	34,776
JOURNAL OF HEPATOLOGY	25,083	10	250,83
JOURNAL OF HOSPITAL INFECTION	3,926	1	3,926
JOURNAL OF IMMUNOLOGY RESEARCH	4,818	1	4,818
JOURNAL OF IMMUNOTHERAPY	4,456	1	4,456
JOURNAL OF INFECTION	6,072	2	12,144
JOURNAL OF INFECTION AND PUBLIC HEALTH	3,718	1	3,718
JOURNAL OF INFECTIOUS DISEASES	5,226	4	20,904
JOURNAL OF INTERNATIONAL MEDICAL RESEARCH	1,671	1	1,671
JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY	4,333	5	21,665
JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE	2,398	2	4,796
JOURNAL OF MEDICAL GENETICS	6,318	1	6,318
JOURNAL OF MEDICAL INTERNET RESEARCH	5,428	1	5,428
JOURNAL OF MEDICAL VIROLOGY	2,327	1	2,327
JOURNAL OF MICROBIOLOGY IMMUNOLOGY AND INFECTION	4,399	1	4,399
JOURNAL OF MOLECULAR MEDICINE-JMM	4,599	1	4,599
JOURNAL OF NEUROINFLAMMATION	8,322	2	16,644
JOURNAL OF NEUROINTERVENTIONAL SURGERY	5,836	1	5,836
JOURNAL OF NEUROLOGY	4,849	2	9,698

(Continued)

Journal	IF	Nº	Amount IF
JOURNAL OF NUTRITION HEALTH & AGING	4,075	1	4,075
JOURNAL OF NUTRITIONAL BIOCHEMISTRY	6,048	1	6,048
JOURNAL OF ONCOLOGY PHARMACY PRACTICE	1,809	1	1,809
JOURNAL OF PAIN AND SYMPTOM MANAGEMENT	3,612	1	3,612
JOURNAL OF PAIN RESEARCH	3,133	1	3,133
JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION	2,839	3	8,517
JOURNAL OF PEDIATRIC UROLOGY	1,83	1	1,83
JOURNAL OF PEDIATRICS	4,406	3	13,218
JOURNAL OF PERINATAL MEDICINE	1,901	1	1,901
JOURNAL OF PERINATOLOGY	2,521	1	2,521
JOURNAL OF PERSONALIZED MEDICINE	4,945	1	4,945
JOURNAL OF PHYSIOLOGY AND PHARMACOLOGY	3,011	1	3,011
JOURNAL OF PSYCHOPHARMACOLOGY	4,153	1	4,153
JOURNAL OF PSYCHOSOCIAL NURSING AND MENTAL HEALTH SERVICES	1,098	1	1,098
JOURNAL OF RHEUMATOLOGY	4,666	1	4,666
JOURNAL OF SUPERCOMPUTING	2,474	1	2,474
JOURNAL OF SYSTEMS AND SOFTWARE	2,829	1	2,829
JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY	8,829	1	8,829
JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY	11,527	3	34,581
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY	24,094	3	72,282
JOURNAL OF THE AMERICAN GERIATRICS SOCIETY	5,562	1	5,562
JOURNAL OF THE AMERICAN HEART ASSOCIATION	5,501	1	5,501
JOURNAL OF THE AMERICAN MEDICAL DIRECTORS ASSOCIATION	4,669	3	14,007
JOURNAL OF THE AMERICAN PODIATRIC MEDICAL ASSOCIATION	0,675	1	0,675
JOURNAL OF THE AMERICAN SOCIETY OF ECHOCARDIOGRAPHY	5,251	1	5,251
JOURNAL OF THE EUROPEAN ACADEMY OF DERMATOLOGY AND VENEREOLOGY	6,166	4	24,664

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Journal	IF	Nº	Amount IF
JOURNAL OF THE INTERNATIONAL NEUROPSYCHOLOGICAL SOCIETY	2,892	1	2,892
JOURNAL OF THE NEUROLOGICAL SCIENCES	3,181	2	6,362
JOURNAL OF THE PEDIATRIC INFECTIOUS DISEASES SOCIETY	3,164	1	3,164
JOURNAL OF THORACIC ONCOLOGY	15,609	1	15,609
JOURNAL OF TRANSLATIONAL MEDICINE	5,531	1	5,531
JOURNAL OF VIRAL HEPATITIS	3,728	2	7,456
JOVE-JOURNAL OF VISUALIZED EXPERIMENTS	1,355	1	1,355
KARDIOLOGIA POLSKA	3,108	1	3,108
KIDNEY INTERNATIONAL	10,612	1	10,612
KNEE	2,199	2	4,398
LANCET	79,321	2	158,642
LANCET CHILD & ADOLESCENT HEALTH	11,288	2	22,576
LANCET NEUROLOGY	44,182	1	44,182
LANCET ONCOLOGY	41,316	2	82,632
LANCET PSYCHIATRY	27,083	4	108,332
LEUKEMIA	11,528	1	11,528
LEUKEMIA RESEARCH	3,156	1	3,156
LIVER INTERNATIONAL	5,828	3	17,484
LIVER TRANSPLANTATION	5,799	1	5,799
LUPUS	2,911	2	5,822
MAGNETIC RESONANCE MATERIALS IN PHYSICS BIOLOGY AND MEDICINE	2,31	1	2,31
MATURITAS	4,342	1	4,342
MEDICAL MICROBIOLOGY AND IMMUNOLOGY	3,402	1	3,402
MEDICAL MYCOLOGY	4,076	5	20,38
MEDICINA CLINICA	1,725	11	18,975
MEDICINA INTENSIVA	2,491	4	9,964
MINERVA ANESTESIOLOGICA	3,051	2	6,102

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Journal	IF	Nº	Amount IF
MINERVA PEDIATRICA	1,312	1	1,312
MOLECULAR & CELLULAR PROTEOMICS	5,911	1	5,911
MOLECULAR AUTISM	7,509	1	7,509
MOLECULAR GENETICS AND METABOLISM	4,797	1	4,797
MOLECULAR IMAGING AND BIOLOGY	3,488	1	3,488
MOLECULAR METABOLISM	7,422	1	7,422
MOLECULAR NUTRITION & FOOD RESEARCH	5,914	1	5,914
MOLECULAR PSYCHIATRY	15,992	1	15,992
MOLECULES	4,411	1	4,411
MULTIPLE SCLEROSIS AND RELATED DISORDERS	4,339	1	4,339
MUSCLE & NERVE	3,217	1	3,217
MUSCULOSKELETAL SCIENCE AND PRACTICE	2,52	1	2,52
MYCOSES	4,377	2	8,754
NANOMATERIALS	5,076	1	5,076
NATURE	49,962	1	49,962
NATURE MEDICINE	53,44	2	106,88
NATURE NEUROSCIENCE	24,884	1	24,884
NEFROLOGIA	2,033	3	6,099
NEPHROLOGY DIALYSIS TRANSPLANTATION	5,992	1	5,992
NEUROBIOLOGY OF AGING	4,673	1	4,673
NEUROENDOCRINOLOGY	4,914	1	4,914
NEUROIMAGE	6,556	1	6,556
NEUROIMAGE-CLINICAL	4,881	1	4,881
NEUROLOGIA	3,109	10	31,09
NEUROLOGICAL SCIENCES	3,307	1	3,307
NEUROLOGY	9,91	1	9,91
NEUROSURGICAL REVIEW	3,042	1	3,042

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Journal	IF	Nº	Amount IF
NEUROUROLOGY AND URODYNAMICS	2,696	1	2,696
NEW ENGLAND JOURNAL OF MEDICINE	91,245	3	273,735
NUTRICION HOSPITALARIA	1,057	4	4,228
NUTRIENTS	5,717	7	40,019
NUTRITION	4,008	1	4,008
OBESITY FACTS	3,942	1	3,942
OPEN FORUM INFECTIOUS DISEASES	3,835	2	7,67
OPHTHALMIC RESEARCH	2,892	1	2,892
OPTICS AND LASERS IN ENGINEERING	4,836	1	4,836
OPTICS EXPRESS	3,894	1	3,894
ORGANIC & BIOMOLECULAR CHEMISTRY	3,876	1	3,876
PACE-PACING AND CLINICAL ELECTROPHYSIOLOGY	1,976	1	1,976
PAEDIATRIC RESPIRATORY REVIEWS	2,726	1	2,726
PATHOGENS	3,492	1	3,492
PATHOLOGY & ONCOLOGY RESEARCH	3,201	1	3,201
PATIENT PREFERENCE AND ADHERENCE	2,711	3	8,133
PEDIATRIC BLOOD & CANCER	3,167	3	9,501
PEDIATRIC CRITICAL CARE MEDICINE	3,624	3	10,872
PEDIATRIC DERMATOLOGY	1,588	1	1,588
PEDIATRIC INFECTIOUS DISEASE JOURNAL	2,129	3	6,387
PEDIATRIC NEPHROLOGY	3,714	1	3,714
PEDIATRIC PULMONOLOGY	3,039	2	6,078
PEDIATRIC RHEUMATOLOGY	3,054	1	3,054
PEDIATRIC TRANSPLANTATION	1,502	3	4,506
PEDIATRICS	7,124	1	7,124
PHARMACEUTICS	6,321	2	12,642
PHARMACOLOGICAL RESEARCH	7,658	1	7,658

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(Continued)

Journal	IF	Nº	Amount IF
PLOS BIOLOGY	8,029	2	16,058
PLOS ONE	3,24	15	48,6
PROCESSES	2,847	1	2,847
PROGRESS IN BRAIN RESEARCH	2,453	1	2,453
PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY	5,067	1	5,067
PSYCHIATRY RESEARCH	3,222	2	6,444
PSYCHOLOGICAL MEDICINE	7,723	3	23,169
PSYCHONEUROENDOCRINOLOGY	4,905	1	4,905
PSYCHOPHARMACOLOGY	4,53	1	4,53
PULMONOLOGY	3,575	1	3,575
RADIOTHERAPY AND ONCOLOGY	6,28	1	6,28
RESEARCH IN SOCIAL & ADMINISTRATIVE PHARMACY	3,336	1	3,336
RESPIRATORY RESEARCH	5,631	1	5,631
RESUSCITATION	5,262	1	5,262
REVISTA CLINICA ESPANOLA	1,556	5	7,78
REVISTA DE NEUROLOGIA	0,87	8	6,96
REVISTA DE PSIQUIATRIA Y SALUD MENTAL	3,318	5	16,59
REVISTA ESPANOLA DE CARDIOLOGIA	4,753	14	66,542
REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS	2,086	3	6,258
REVISTA ESPANOLA DE MEDICINA NUCLEAR E IMAGEN MOLECULAR	1,359	3	4,077
REVISTA ESPANOLA DE QUIMIOTERAPIA	1,553	10	15,53
REVISTA ESPANOLA DE SALUD PUBLICA	0,756	3	2,268
REVISTA INTERNACIONAL DE ANDROLOGIA	1,063	1	1,063
REVUE FRANCAISE D ALLERGOLOGIE	0,288	1	0,288
RHEUMATOLOGY	7,58	3	22,74
RHEUMATOLOGY INTERNATIONAL	2,631	3	7,893
RSC ADVANCES	3,361	1	3,361

Journal	IF	Nº	Amount IF
SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS	4,221	2	8,442
SCANDINAVIAN JOURNAL OF SURGERY	2,36	1	2,36
SCHIZOPHRENIA BULLETIN	9,306	4	37,224
SCHIZOPHRENIA RESEARCH	4,939	5	24,695
SCIENCE	47,728	1	47,728
SCIENCE TRANSLATIONAL MEDICINE	17,956	2	35,912
SCIENTIFIC REPORTS	4,379	12	52,548
SEMINARS IN ARTHRITIS AND RHEUMATISM	5,532	1	5,532
SENSORS	3,576	1	3,576
SIMULATION MODELLING PRACTICE AND THEORY	3,272	1	3,272
SLEEP MEDICINE	3,492	2	6,984
SOCIAL PSYCHIATRY AND PSYCHIATRIC EPIDEMIOLOGY	4,328	1	4,328
STATISTICS AND COMPUTING	2,559	2	5,118
STEM CELL RESEARCH	2,02	1	2,02
STEM CELLS TRANSLATIONAL MEDICINE	6,94	1	6,94
STRESS-THE INTERNATIONAL JOURNAL ON THE BIOLOGY OF STRESS	3,493	1	3,493
STROKE	7,914	1	7,914
SUBSTANCE USE & MISUSE	2,164	1	2,164
SUPPORTIVE CARE IN CANCER	3,603	1	3,603
TELEMEDICINE AND E-HEALTH	3,536	1	3,536
THERANOSTICS	11,556	1	11,556
THERAPEUTIC ADVANCES IN CHRONIC DISEASE	5,091	1	5,091
THERAPEUTIC APHERESIS AND DIALYSIS	1,762	1	1,762
THORAX	9,139	1	9,139
THROMBOSIS AND HAEMOSTASIS	5,249	2	10,498
THROMBOSIS RESEARCH	3,944	7	27,608
TOTAL		956	4750,4

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Publications generated by clinical researchers associated with IiSGM				
Publications of the main WOS collection in journals indexed in the JCR with impact factor	on in journals indexed in the collection in journals without			
350	47	13		

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

Because of the social isolation resulting from the pandemic, it has restricted training activities in 2020.

However, some of them have been resumed, such as weekly seminars, on line.

During 2020, the liSGM 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 2020 (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 stated in the Training Plan, during the year 2020, the liSGM intended to offer the following training opportunities, which were ultimately blocked by the pandemic:

- 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.

TRAINING: COURSES, SEMINARS, AND ONE-DAY TRAINING SESSIONS

- 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 IiSGM.
- 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 couse 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 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 IiSGM 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 IiSGM and researchers from other institutions who are invited to speak.

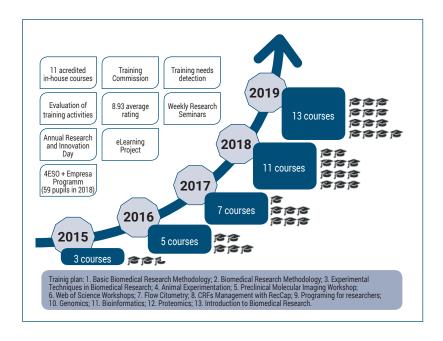
Other courses provided included the following:

- 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:

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

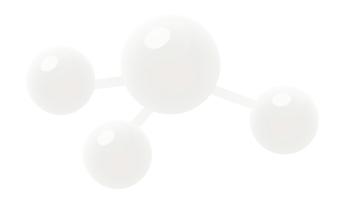
TRAINING



TRAINING: COURSES, SEMINARS, AND ONE-DAY TRAINING SESSIONS

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



Clinical Practice Guidelines

	Clinical Practice Guidelines	
AREA 2: CARDIOVASCULAR DISEASE	GROUP 2.03: Cardiac celular electrophysiology	
AREA 3: NEUROSCIENCE AND MENTAL HEALTH	GROUP 3.01: Neurobiological and psychological bases of mental disorders. Neurodevelopmental disorders	
AREA 5: DISEASES	GROUP 5.01: Pathophysiology and clinical investigation of chronic inflammatory and immune diseases	1
OF THE IMMUNE SYSTEM	GROUP 5.03: Systemic autoimmune diseases	1
	GROUP 5.07: Infections in the pediatric population	5
AREA 6: TRANSLATIONAL ONCOLOGY	GROUP 6.02: Translational medical oncology and personalized cancer therapy	6
	GROUP 6.03: Genetics and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation	1
	GROUP 7.01: Inflammation and vascular damage in chronic kidney disease. Renal pathophysiology	1
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION	GROUP 7.02: Pathophysiology and natural history of liver and digestive diseases	4
	GROUP 7.22 Pathophysiology of the neonate and developing child	1
	GROUP 7.27: Hospital pharmacy and pharmacogenomics	4
	GROUP 7.28: Clinical nutrition	2

Doctoral theses defended

	Doctoral theses defended	
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
AREA 5: DISEASES	GROUP 5.02: Molecular biology of HIV	2
OF THE IMMUNE SYSTEM	GROUP 5.07: Infections in the pediatric population	1
ARFA 7: SYSTEMIC	GROUP 7.16: Regenerative medicine and system development: cardiovascular and osteochondral	2
DISEASES AND ORGAN	GROUP 7.22 Pathophysiology of the neonate and developing child	1
TRANSPLANTATION	GROUP 7.27: Hospital pharmacy and pharmacogenomics	1
	GROUP 7.29: Pharmacology and vascular pathophysiology	1

Cooperative research structures

Cooperative research structures				
		Ciber	Retics	Others
AREA 1: BIOMEDICAL FNGINFFRING	Group 1.01: Advanced technology applications and human health	1		1
ENGINEERING	GROUP 1.02: Signal processing	1		
	GROUP 2.01: Natural history of heart disease	1	1	1
AREA 2: CARDIOVASCULAR DISEASE	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	3
	GROUP 5.07: Infections in the pediatric population		1	19

COOPERATIVE RESEARCH STRUCTURES

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
	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 7.04: Diseases of the critically ill child		1	1
AREA 7: SYSTEMIC	GROUP 7.05B Pathophysiology, outcome, and therapeutic strategies in chronic respiratory insufficiency and respiratory disorders of sleep		1	5
DISEASES AND ORGAN TRANSPLANTATION	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

ADVENT INTERNATIONAL GRUPO ESPAÑOL NUTRICIA. S.R.L. ADVISORY, S.L.U. DF TRASPIANTES SEICAV (SOCIEDAD **HEMATOPOYETICOS** ALEXION PHARMA ESPAÑOLA DE (GETH) SPAIN, S.L. **INFECCIONES** CARDIOVASCULARES) ALPARGATAS EUROPE, HABBER TEC, S.L. SHUTTLECLOUD S.L.U. INCARDIO, S.L. TECHNOLOGIES, BAYER HISPANIA, S.L.U. INFORMACION EN RED S.L.U. CLINICALSOFT, S.L. INFONET, S.L. **SOCIEDAD FFRRFR** IPSEN PHARMA, S.A. ESPAÑOLA DE INTERNACIONAL, S.A. JANSSEN CILAG, S.A. ODONTOPEDIATRÍA FRESENIUS KABI (SEOP) KERN PHARMA, S.L. ESPAÑA, S.A. STEF, S.A. LABORATORÍOS FUNADCIÓN ALICIA URIA GESTIÓN FARMACÉUTICOS **KOPLOWITZ** INMOBILIARIA, S.L. GUERBET, S.A. GEDEON RICHTER LAMUCCA COMPANY, S.L. VEGENAT, S.A. IBERICA, S.A.U. VIFOR PHARMA LILLY, S.A.U. GLAXOSMITHKLINE, S.A. ESPAÑA. S.L. **GRIFOLS NOVARTIS** INTERNATIONAL, S.A. FARMACEÚTICA, S.A.

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