



Annual Report 2013

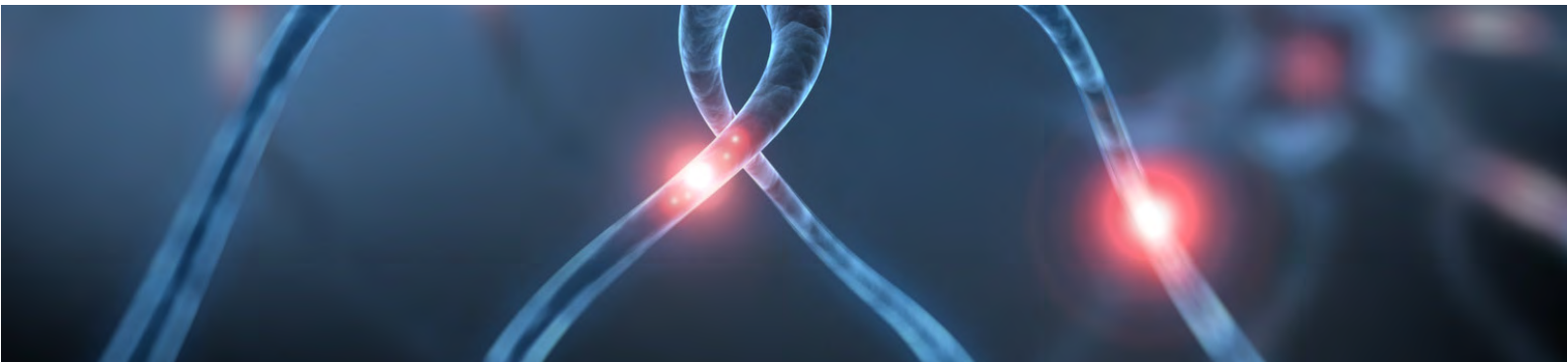
cibersam

Centro de Investigación Biomédica en Red
de Salud Mental

The background features a complex network of glowing green and orange lines that resemble neural pathways or fiber optics. A prominent red sphere is located near the center-left. Overlaid on the right side are three concentric white circles.

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Organization



Letter from the Scientific Director

These pages contain the CIBERSAM scientific report for 2013. The fundamental aspect of this report is not only the maintenance of research activity but rather the increase in productivity despite the decrease in funding received in recent years. Logically, we wonder what the situation would have been like if we had not had this economic crisis and how long we will be able to put up with this situation. The internationalization of our research with an increasing number of European projects has undoubtedly allowed maintaining the working rhythm achieved in previous years. In 2013, we successfully compensated in part the decrease in national public funding in recent years with international and private funding. Unquestionably, our Centre is turning into a structure that is increasingly competitive at the international level, attracting the interest of private industry to enable safely and efficiently developing projects with assured quality. Our Centre provides such assured quality with competitive and determining annual evaluations for the continuity of the groups and of the structure itself under national and international scrutiny.

In 2013, like every year since its creation, this CIBER conducted an annual evaluation of each of the groups. This comprehensive evaluation, which I believe should be extended to other public research structures in order to break away from the highly bureaucratic research that is so typical of us and causes so much harm to this country, results in a more efficient distribution of the resources available for research of excellence. Research groups inside and outside this CIBER are dynamic groups with varying research quality over the years. We believe that a Centre receiving private funding cannot have groups outside the institution which are better than groups inside it. One of the greatest strengths of this Centre is that it is a dynamic structure which can and must adapt to internal and external changes by means of transparent and objective evaluation mechanisms. There is no system more inefficient than that which allows those joining an institution to remain in said institution regardless of their effort, ability and results. This ancient, outdated and inefficient system that has been with us for so long must now become part of our history. The call for proposal for the incorporation of new groups will undoubtedly enrich this CIBER which, following the principle of equality, will continue to give priority to competitive groups, even at the expense of dispensing with less productive groups currently forming part of this Centre.

In 2013, all the principal investigators of this CIBER worked on and approved the 2014-2016 Strategic Plan. According to our recently released Strategic Plan, we have continued with an ambitious quality plan with measurable markers, and it serves as the basis for agreeing on areas to be improved. The words innovation and competitiveness play a key role and guide our Centre's vision provided in said Strategic Plan. The main objective of favoring translational research of excellence in mental health is sought through programmes and platforms. All the programmes (depression, schizophrenia, bipolar disorder, therapeutic innovation, child and adolescent psychiatry and

psychosomatic, anxiety and impulse control disorders) have pre-clinical research groups which are one of the greatest assets of this CIBER. Transversal structure operation such as research platforms was reinforced in 2013. The number of genetic samples in our DNA platform, which already totals 10,000 samples, is becoming more and more attractive for international consortiums and allows conducting national studies which would otherwise be impossible. We worked very hard on the application joining the DNA platform with the common database. At present, any investigator of this CIBER can know about the availability of samples with specific characteristics (diagnosis, age at onset of the disorder, gender, race, existence in the family platform, etc.) and the groups to contact to be able to use this platform in the most efficient manner. The instrument bank platform continues to provide excellent service to clinical investigators inside and outside this CIBER. Improvement to the GRIDSAM tool which allows entering data in multicentre projects continues and currently includes data from more than 22,000 individuals with different psychiatric disorders and healthy controls.

We continue to be committed to Europe, especially considering the delicate economic situation of our country. There was a total of 20 active European and international projects in 2013 and three newly granted projects will start in 2014. In total, 56% of the groups forming CIBERSAM participated in these projects. The first NIH project managed by CIBERSAM was also achieved this year. We are sure that a return can be further improved through participation and coordination by our groups in projects funded by the European Union. The participation of more than half the CIBERSAM groups in European projects and our Centre's coordination in strategic projects within the European Union attest to this. In 2013, 43.8% (198) of the total CIBERSAM publications resulted from international collaborations. We continue to coordinate the European research roadmap through the ROAMER project, which should establish the priority lines of funding in mental health within Horizon 2020.

In 2013, we continued to foster and enhance our relations with the family and patient associations by holding the 5th Social CIBER-SAM Forum, which brought together the main family and patient associations and CIBERSAM investigators in Seville. CIBERSAM was present in the mass media throughout 2013. We participated in Science Week and endorsed an increasing number of scientific activities. We continued to work constantly to have a more dynamic and intuitive web page that makes accessing the priority contents on said page easier. We also launched our twitter account, @CIBER_SAM, which already has 300 followers, and our own Facebook page.

One of the key objectives of this CIBER since its incorporation was to train young investigators in the pleasing and stimulating task of mental health research. In 2013, we started the Master's course in Introduction to Mental Health Research with the participation of five of the best universities in the country. Dozens of students registered for this first course and they are currently in their first year of study. The responses that we obtained from these students could not be more positive.

For a publicly funded institute, conducting quality research alone is not enough. There is a need to conduct research for the purpose of returning to society what has been invested in research. In CIBERSAM, our objective is to translate our research into original knowledge that produces improvements in clinical practice and therefore in mental health in Spain. We will be on the right track if our activity also results in patents and intellectual property that may generate a long-term economic return on the expenses generated by research. In 2013, CIBERSAM filed six new patents, five of which are international patents, and produced 15 new clinical guidelines, all of which demonstrate that we are on the right track.

The components of innovation, transmission and transfer of both products and processes, such as new therapeutic targets, must focus not only on the search for molecules with new mechanisms of action but also on the search for diagnosis, detection, evaluation and prognosis techniques, non-pharmacological therapeutic approaches or medical imaging technology. It goes without saying that most of our research results are related to more efficient therapeutic strategies (pharmacological treatments, psychotherapeutic interventions) with preventive strategies (detection of risk cases, interventions to prevent or delay the onset of mental disorders in individuals at risk, prevention of comorbidity or onset of secondary pathologies in individuals who already have a mental disorder). The clinical implementation of these results can undoubtedly reduce healthcare spending through more efficient psychiatry based on the evidence provided by our research.

Now more than ever, it is time to conduct efficient research aimed at improving health and the quality of life of individuals at the lowest possible cost, without jeopardizing all that has been achieved over recent years. Only through the common effort of those best prepared for doing this task together with the support of the new generations of talented investigators integrated in groups of excellence will be the driving force that will get us out of this situation and make us strong enough to face current and future challenges.

Celso Arango López
Scientific Director of CIBERSAM



List of Groups and Institutions

The consortium consists of 24 research groups from 8 different Autonomous Communities: Principality of Asturias, Cantabria, Basque Country, Aragon, Catalonia, Madrid, Community of Valencia and Andalusia.

GROUP	CENTRE	CITY	PRINCIPAL INVESTIGATOR
Group 1	Hospital Gregorio Marañón	Madrid	Celso Arango
Group 2	Instituto de investigaciones Biomédicas	Barcelona	Francesc Artigas
Group 3	Hospital Universitario La Princesa	Madrid	José Luis Ayuso
Group 4	Hospital Clínic de Barcelona	Barcelona	Miguel Bernardo
Group 5	Univ. de Oviedo. Facultad de Medicina	Oviedo	Julio Bobes
Group 6	Univ.de Granada. Facultad de Medicina	Granada	Jorge A. Cervilla
Group 7	Hospital Gregorio Marañón	Madrid	Manuel Desco
Group 8	Univ. de Barcelona. Facultad de Biología	Barcelona	Lourdes Fañanas
Group 10	Hospital Santiago Apóstol	Vitoria- Gasteiz	Ana González-Pinto
Group 11	Fundación Sant Joan de Deu	Barcelona	Josep María Haro
Group 12	UCM. Facultad de Medicina	Madrid	Juan Carlos Leza
Group 13	Hospital Clínico Universitario	Zaragoza	Antonio Lobo
Group 15	FIDMAG Germanes Hospitalariés. Unidad de investigación Benito Menni CASM	Barcelona	Peter J. McKenna
Group 16	UPV. Facultad de Medicina	Leioa, Bizcaia	José Javier Meana
Group 17	Hospital Universitario de Bellvitge	Barcelona	José Manuel Menchón
Group 18	Univ. de Cádiz. Facultad de Medicina	Cádiz	Juan Antonio Micó
Group 19	Hospital Universitario 12 de Octubre	Madrid	Tomás Palomo
Group 20	Univ. de Cantabria. Facultad de Medicina	Santander	Ángel Armando Pazos
Group 21	Hospital de Santa Creu i Santa Pau	Barcelona	Víctor Pérez
Group 22	Centro Hospital Ramón y Cajal	Madrid	Jerónimo Sáiz
Group 23	Univ. de Valencia. Facultad de Medicina	Valencia	Julio Sanjuán
Group 24	Univ.d de Valencia. Facultad de Medicina	Valencia	Rafael Tabares
Group 25	Hospital Clínic de Barcelona	Barcelona	Eduard Vieta
Group 26	Hospital Univ.Marqués de Valdecilla	Santander	Benedicto Crespo

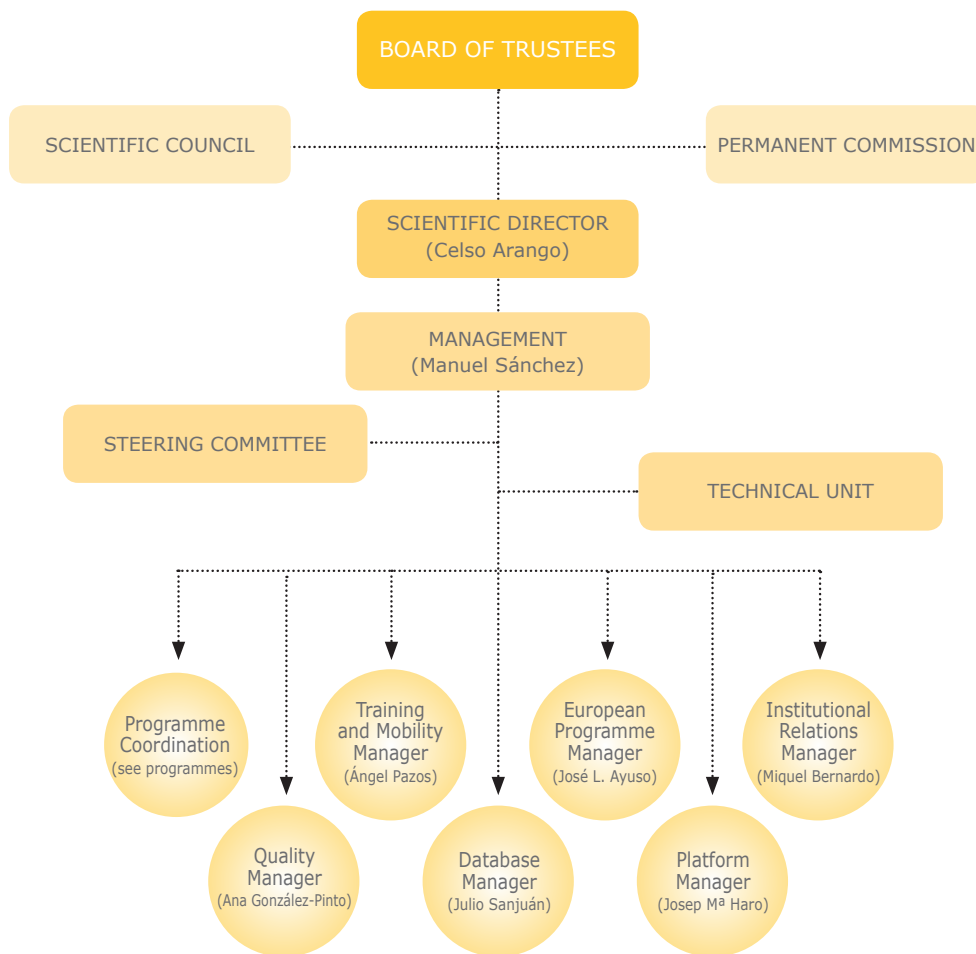


Organizational Structure

As defined in its By-laws, the management and administration of CIBERSAM shall be the responsibility of the following bodies: the Board of Trustees and its Permanent Commission and the Steering Bodies represented by the Steering Committee, the Scientific Director and Management.

The CIBERSAM coordinating structure aims to assure efficient operation which makes accomplishing the planned objectives easier. Said structure takes into account two aspects, i.e., the scientific aspect and economic-administrative aspect.

Organizational Chart



Board of Trustees

The Board of Trustees is formed by three representatives from the Instituto de Salud Carlos III and one representative from each of the Consortium Institutions. The President of the Board of Trustees is the Director of the Instituto de Salud Carlos III and the General Manager of the Consortium acts as the Secretary of the Board. The Board of Trustees exercises general control over the Consortium, designates and appoints members of the Scientific Council, of the Permanent Commission and the Scientific Director of the CIBERSAM BOARD OF TRUSTEES (main decision-making body of the Consortium)

Dr. Antonio Luis Andreu.

Director of the ISCIII

Dr. Margarita Blázquez.

Deputy Director-General of
Redes y Centros de Investigación
Cooperativa (ISCIII)

Dr. Pedro Cortegoso.

Secretary General ISCIII

Dr. Susana Morte.

Servicio Madrileño de Salud

Dr. M^a Carmen Prieto.

Hospital Clínic de Barcelona

Dr. Pedro C. Marijuán.

Instituto de Investigación
Sanitaria Aragón

Dr. Xavier Meneses.

Universidad de Barcelona

Dr. Ana M^a Cortes.

Universidad de Valencia

Dr. Antonio Martín.

Instituto de Investigación
Biomédica de Bellvitge

Dr. Susana Belaustegui.

Fundación vasca de innovación e
investigación sanitaria

Dr. Josep Tresera.

Fundación para la Investigación
e Investigación María Angustias
Giménez

Dr. Emili Bargalló.

Fundación para la Investigación y
Docencia Sant Joan de Deu

Dr. José Ramón Naranjo.

Cons. Superior de Investigaciones
Científicas.

Dr. Jaime Kulisevski.

Instituto de Investigación de la
Santa Creu y Sant Pau

Dr. M^a Dolores Suárez.

Universidad de Granada

Dr. M^a Paz Suárez.

Universidad de Oviedo

Dr. Julián Gurbindo.

Fundación Hospital Universitario
Marqués de Valdecilla

Dr. Manuel Bethencourt.

Universidad de Cádiz

Dr. Ignacio Largo.

Universidad del País Vasco

Dr. José Carlos Gómez.

Universidad de Cantabria

Dr. Joaquín Plumet.

Universidad Complutense

Dr. Celso Arango.

Scientific Director of CIBERSAM

Secretary: **Dr. Manuel Sánchez**
General Manager of CIBERSAM

Permanent Commission

The Permanent Commission consists of the Vice-president of the Board of Trustees, the Scientific Director of the Consortium, the General Manager of the Consortium, who will act as the Secretary, and four members representing the Consortium Institutions. The Permanent Commission evaluates the Consortium's activities, and reviews and prepares budgets, accounts and other reports to be approved by the Board of Trustees.

Members of the Permanent Commission	
Instituto de Salud Carlos III (ISCIII)	Margarita Blázquez Herranz (President of the Board)
CIBERSAM. General Manager	Manuel Sánchez Delgado (Secretary of the Board)
CIBERSAM. Scientific Director	Celso Arango López
Fundación para la Investigación y Docencia Sant Joan de Deu	Emilli Bargalló Angerri
Universidad de Granada	María Dolores Suárez Ortega
Fundación Vasca de Innovación e Investigación Sanitarias	Carmen Garaizar Axpe
Universidad de Oviedo	M ^a Paz Suárez Rendueles

External Scientific Advisory Committee

The External Scientific Advisory Committee provides general scientific support and advice to the Board of Trustees. It consists of internationally renowned scientists in the health sciences field whose professional and scientific careers align with CIBERSAM objectives. The members of this committee include:

Mr. Jim Van Os.

Maastricht University. Holland

Mr. Guy Goodwin.

Department of Psychiatry, University Of Oxford, Warneford Hospital. Reino Unido

Mr. Michael Hamon

Institut National de la Santé et de la Recherche, Université Pierre et Marie Curie, París. Francia

Ms. Maria Ron.

Institute of Neurology, University College London, Queen Square, Londres. Reino Unido

Ms. Marion Leboyer.

Groupe Henri Mondor- Albert Chenevier, Pôle de Psychiatrie, Créteil, Paris. Francia

Steering Committee

The Steering Committee consists of a collegial body which assures the development of the Consortium by looking into the needs of the groups and their strategic objectives. This committee includes:

Dr. Celso Arango	Scientific Director
Dr. Francesc Artigas	Therapeutic Innovation Programme Manager
Dr. Víctor Pérez	Depression Programme Manager
Dr. Eduard Vieta	Bipolar Disorder Programme Manager
Dr. Julio Sanjuán	Schizophrenia Programme and Common Databases Manager
Dr. Antonio Lobo	Psychotic, Anxiety, and Impulse Control Disorders Programme Manager
Dr. Ángel Pazos	Training and Mobility Manager
Dr. Josep María Haro	Platforms Manager
Dr. Josefina Castro	Child and Adolescent Psychiatry Prog. Manager
Dr. Ana M ^a González-Pinto	Quality Manager
D. Manuel Sánchez	General Manager

The CIBERSAM administration team is responsible for appropriately managing CIBERSAM staff, purchases, accounts, communication, legal consultation, asset management, administrative hiring, negotiation of agreements and, ultimately, for facilitating liaisons between research groups distributed throughout Spain.

The team is led by the General Manager, Mr. Manuel Sánchez Delgado, whose immediate subordinates are:

Human Resources Department	Ms. Amaya Rivera
European Projects and Communication Department	Ms. Carolina Carvalho
Scientific Secretary	Ms. Paula López
Technical Unit	Ms. Begoña Sáenz de Tejada and Ms. Mónica López



2013 Budget

I FUNDING FOR GROUPS	Total Budget
01. Group Activity	2.602.150,00 €
02. Training	64.500,00 €
03. Coordination	29.000,00 €
04. International Relations and Communications	73.000,00 €
Total Funding for Groups and Structure	2.768.650,00 €
II FUNDING FOR PLATFORMS	Total Budget
05. BICIBERSAM Maintenance	10.000,00 €
06. Neuroimaging Maintenance	28.108,33 €
07. Brain Bank	24.782,67 €
08. Database	24.000,00 €
09. DNA Bank	32.000,00 €
Total Funding for Platforms	118.891,00 €
III INTERNAL CALLS FOR FUNDING	Total Budget
10. Multi-annual Projects	94.652,30 €
11. 2011 Neuroimaging	31.630,55 €
12. BICERSAM	75.525,68 €
13. 2011 Intramural Platforms	161.526,63 €
14. 2012 Intramural Platforms	120.000,00 €
Total Internal Calls for Funding	483.335,16 €
IV STRUCTURE	Presupuesto Total
15. Technical Unit and Scientific Secretary	190.000,00 €
16. External Services	180.000,00 €
Total Funding for Structure	370.000,00 €
TOTAL	3.740.876,16 €



CIBERSAM staff

The mean number of employees, both civil servants and non-civil servants, in the fiscal year ending December 31, 2013 distinguished by categories and sex are shown below. All Consortium staff belongs to the non-civil servant category.

Total	Indefinite	Temporary	General total
Upper Management			
Doctor	5	9	14
Master's Degree	12	28	40
Bachelor's Degree	1	4	5
Technician	3	10	13
General total	21	51	72

MALE	Indefinidos	Temporal	Total general
Upper Management			
Doctor		2	2
Master's Degree	3	9	12
Bachelor's Degree			
Technician		2	2
General total	3	13	16

FEMALE	Indefinidos	Temporal	Total general
Upper Management			
Doctor	5	7	12
Master's Degree	9	19	28
Bachelor's Degree	1	4	5
Technician	3	8	11
General total	18	38	56

Average CIBERSAM staff in 2013

	Female	Male	General Total
Indefinite	17,37	3,00	20,37
Temporary	31,97	10,98	42,95
General Total	49,34	13,98	63,32



Scientific Production

CIBERSAM Groups

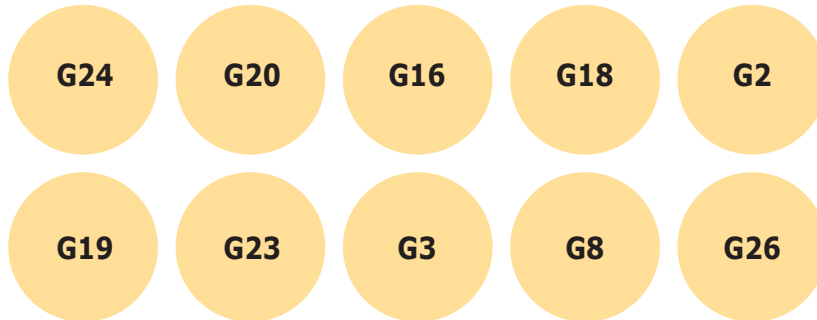
Principal Investigator	Group
Arango López, Celso	G1
Artigas Pérez, Francesc	G2
Ayuso Mateos, José Luis	G3
Bernardo Arroyo, Miguel	G4
Bobes García, Julio	G5
Cervilla Ballesteros, Jorge A	G6
Descó Menéndez, Manuel	G7
Fañanas Saura, Lourdes	G8
González Pinto Arrillaga, Ana	G10
Haro Abad, Josep Maria	G11
Leza Cerro, Juan Carlos	G12
Lobo Satué, Antonio	G13
Mckenna, Peter J.	G15
Meana Martínez, José Javier	G16
Menchon Magriña, José Manuel	G17
Mico Segura, Juan Antonio	G18
Palomo Álvarez, Tomás	G19
Pazos Carro, Ángel Armando	G20
Pérez Sola, Víctor	G21
Saiz Ruiz, Jerónimo	G22
Sanjuán Arias, Julio	G23
Tabares Seisdedos, Rafael	G24
Vieta Pascual, Eduard	G25
Crespo Facorro, Benedicto	G26

Publications per group

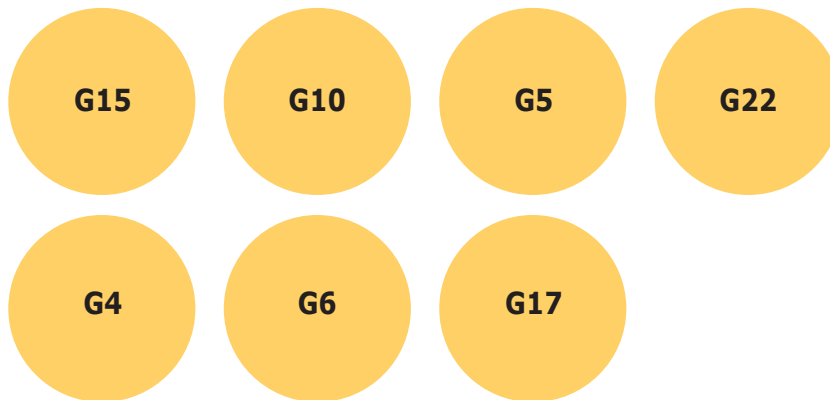
No. of publications: 1-10



No. of publications: 11-20



No. of publications: 21-30

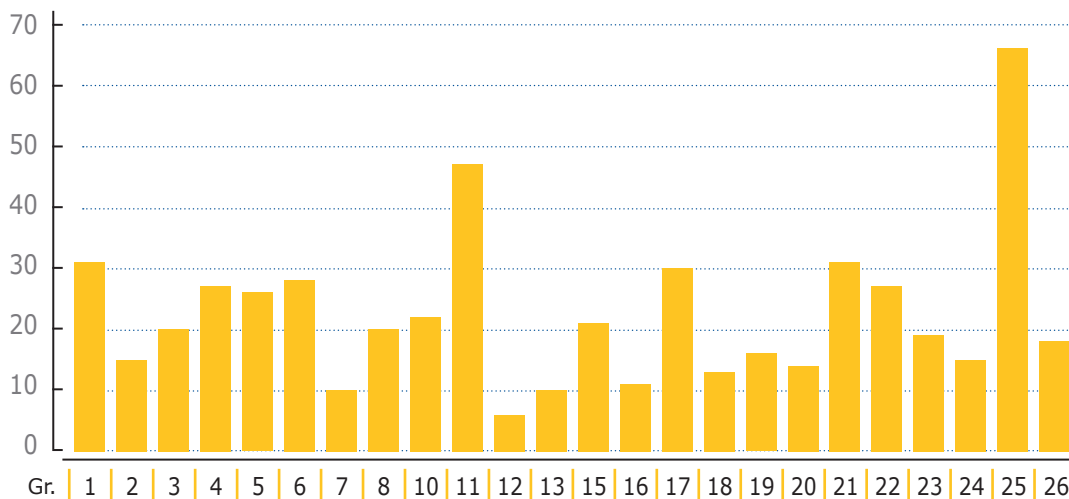


No. of publications: +30

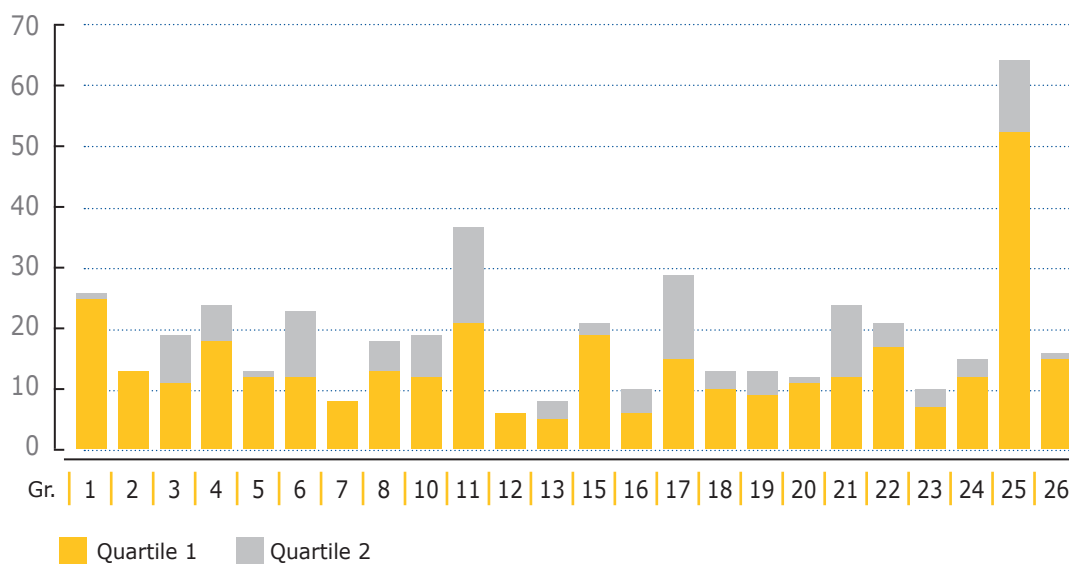


Group	1	2	3	4	5	6	7	8	10	11	12	13	15	16	17	18	19	20	21	22	23	24	25	26
No. of publications	31	15	20	27	26	28	10	20	22	47	6	10	21	11	30	13	16	14	31	27	19	15	66	18

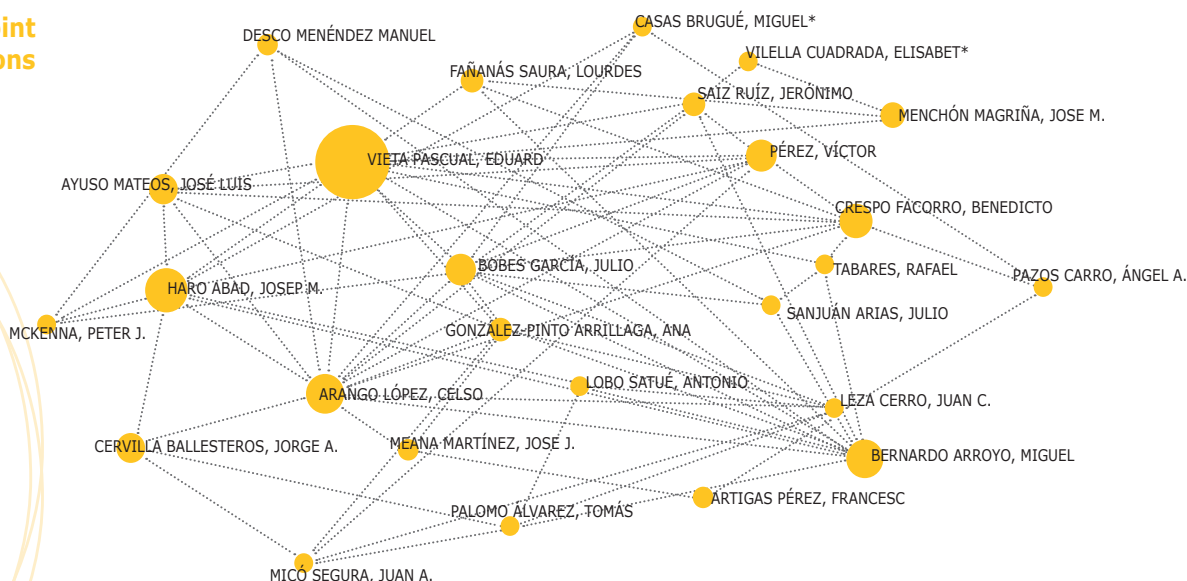
Total no. of publications



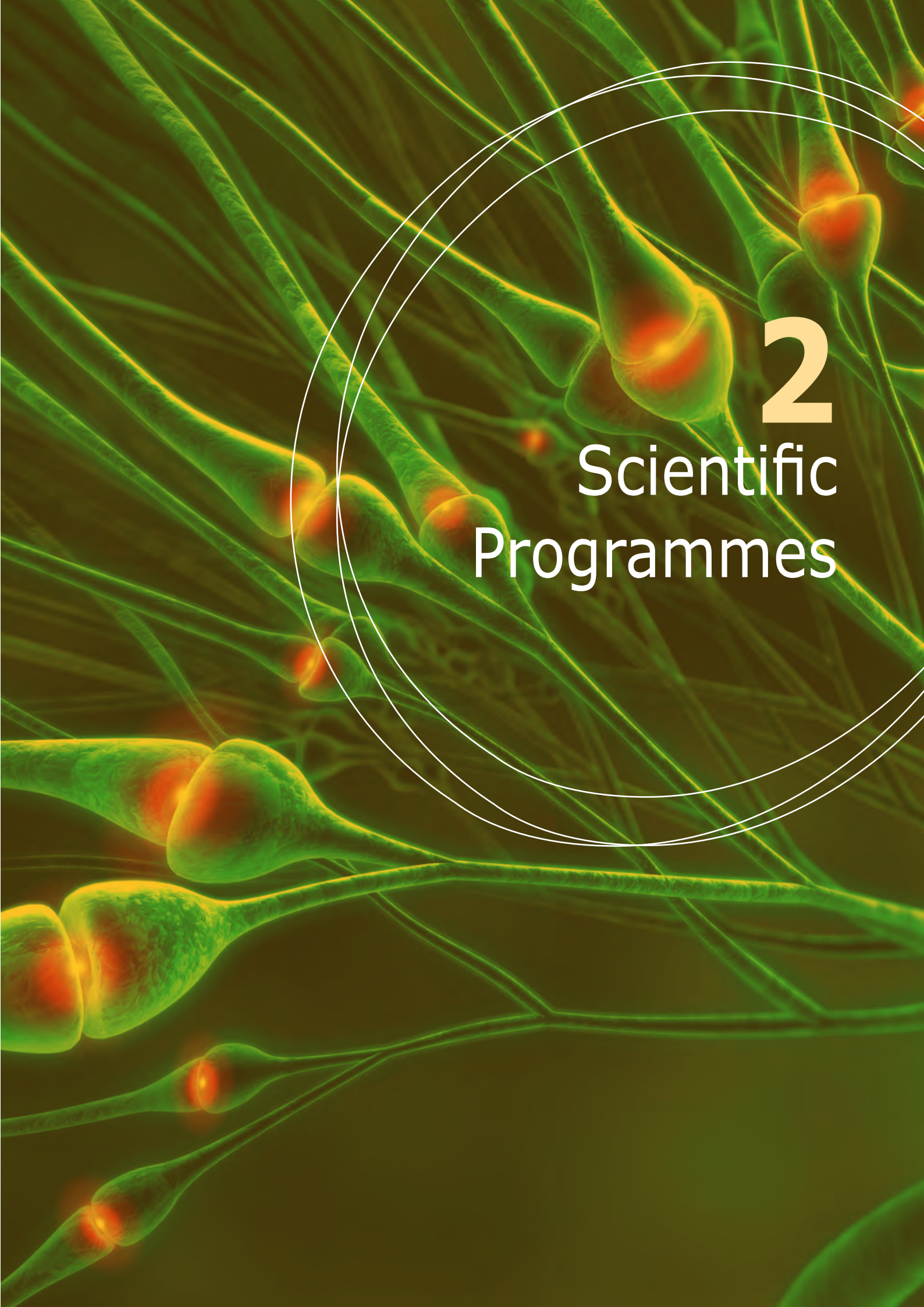
Publications by group in first and second quartile journals



Joint Publications

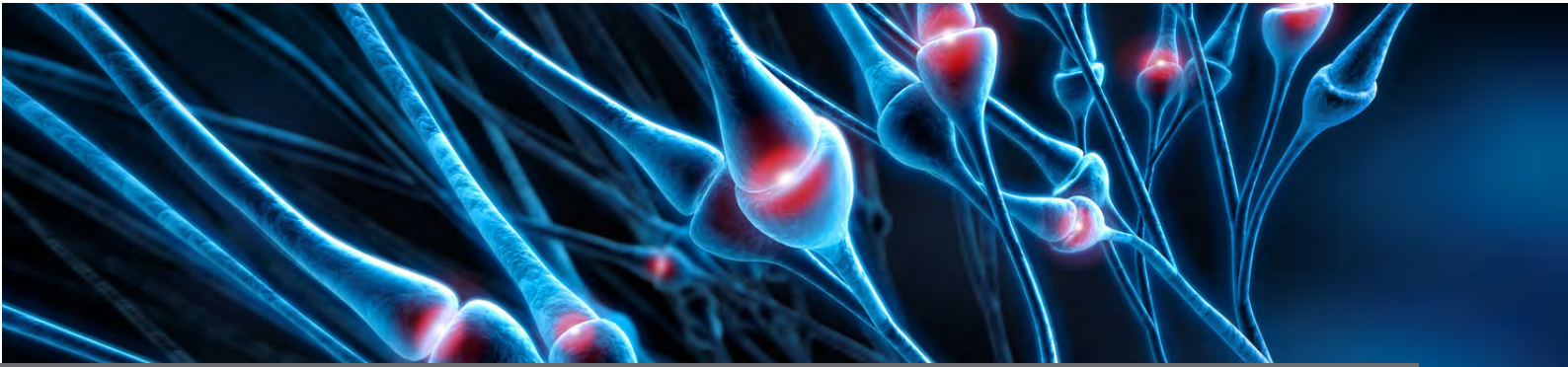


* Linked groups



2

Scientific
Programmes



Mental Disorders in Children and Adolescents

Programme Description

Programme Description: About 10-15% of children and adolescents suffer a certain type of mental disorder and at least half of them experience a significant reduction in their ability to function within a family, society and in school. The Mental Disorders in Children and Adolescents Programme, created in 2010 and formed by five CIBERSAM groups, studies mental disorders that start in childhood and adolescence and covers the following lines of work:

- Risk factors, genetics, clinical characteristics, neuroimaging, treatment and progression of affective and psychotic disorders in children and adolescents.
- Risk factors, genetics, clinical characteristics, neuroimaging, treatment and progression of eating disorders.
- Genetic and neuroimaging characteristics in children and adolescents with obsessive-compulsive disorders and other anxiety disorders in children and adolescents.
- Genetic characteristics, neuroimaging characteristics, treatment and progression of autism spectrum disorders.
- Safety and efficacy of psychotropic drugs and other treatments for children and adolescents.
- Immunological impairments in various psychiatric disorders in children and adolescents.
- Development and validation of specific evaluation instruments in children and adolescents and of neuroimaging technique.

Objectives

- To study the risk and causal factors, manifestations and progression of the most serious/prevalent disorders occurring at these ages.
- To study the efficacy and safety of psychotropic drugs and other therapeutic approaches in children and adolescents.
- To develop or validate specific evaluation instruments and neuroimaging techniques for disease diagnosis and follow-up.
- To participate in European projects with international groups to conduct studies requiring a large sample size consisting of children and adolescents and of achieving results applied to approving drug indications at these ages, to improving common clinical guidelines or to implementing the most suitable care and prevention programmes.

Identification of the Coordinator and Associated Groups

Coordinator:

Dra. Josefina Castro Fornieles - Hospital Clínic de Barcelona. G04

Associated Groups:

G01. Hospital General Universitario Gregorio Marañón, (Dr. Celso Arango López)

G04. Hospital Clínic de Barcelona, (Dr. Miquel Bernardo)

G07. Hospital General Univ. Gregorio Marañón, (Dr. Manuel Desco Menéndez)

G08. Univ.de Barcelona. Facultad de Biología, (Dra. Lourdes Fañanás Saura)

G24. Universidad de Valencia. Facultad de Medicina, (Dr. Rafael Tabares Seisdedos)



Bipolar Disorder

Programme Description

Created in 2008, the CIBERSAM Bipolar Disorder Programme is essentially formed by groups having expertise in translational research with a very high tendency of applying the results to clinical practice. The main objective of this programme is to enhance knowledge about bipolar disorder causes and treatment.

The Programme is coordinated by the Assistant Director of CIBERSAM (Dr. Eduard Vieta) and includes the coordinators of the Quality and Internal Evaluation Areas: (Dr Ana Gonzalez-Pinto) and European Programmes (Dr. Jose Luis Ayuso), as well as renowned Spanish investigators such as Dr. Bobes, Dr. McKenna and Dr. Tabarés. The Bipolar Disorder Programme group is also part of the research programmes in Depression, Schizophrenia, Therapeutic Innovation and Child and Adolescent Psychiatry. This favors a large number of collaborations with various CIBERSAM groups and with other CIBERS. The Bipolar Disorder Programme has a high rate of internationalization and scientific productivity.

To date, the main lines of research developed by the Bipolar Disorder Programme include:

- **Epidemiology:** Studies for determining the prevalence, comorbidity and disability associated with bipolar disorder.
- **Early intervention:** To study a large and representative sample of bipolar patients in early phases of the disease (first episode) and the genetic and environmental factors.
- **Databases:** To create a comprehensive and collaborative database containing epidemiological, clinical and biological information about bipolar disorder.
- **Neuropsychology:** To analyze the role of neurocognition as an endophenotype and as a potentially treatable prognosis factor.
- **Psychometry:** To validate psychometric instruments for use in bipolar disorder.
- To identify new biomarkers, **therapeutic targets and novel mechanisms of action** for the treatment of bipolar disorder.
- **Clinical trials:** To conduct clinical trials for determining the efficacy and tolerability of new treatments for bipolar disorder.
- **Psychotherapies:** To study the efficacy of innovative psychosocial interventions for improving the prognosis of the disease.
- **Neuroimaging:** To analyze the changes in structural and functional neuroimaging associated with the disease, its physiopathology, symptoms, and neuropsychological manifestations.

Objectives

- To promote collaborative research in bipolar disorder.
- To stimulate translational research and innovation.
- To start epidemiological studies and clinical trials.
- To enhance knowledge and mental health in this area.
- To make more efficient use of resources and funding.
- To disseminate findings.
- To develop research with the highest ethical and quality standards.

Identification of the Coordinator and Associated Groups

Coordinator:

Dr. Eduard Vieta Pascual - Hospital Clínic de Barcelona. G25

Associated Groups:

- G03. Hospital Universitario La Princesa (Dr. José Luis Ayuso Mateos)
- G05. Universidad de Oviedo. Facultad de Medicina (Dr. Julio Bobes García)
- G10. Hospital Universitario de Álava (Dra. Ana González-Pinto Arrillaga)
- G15. Benito Menni Complex Asistencial (Dr. Peter J. Mckenna)
- G24. Univ. de Valencia. Facultad de Medicina (Dr. Rafael Tabares Seisdedos)
- G25. Hospital Clínic de Barcelona (Dr. Eduard Vieta Pascual)



Depression

Programme Description

The mission of the CIBERSAM Depression Programme is to carry out collaborative projects between basic and clinical investigators: ranging from animal models to patients, genetics to clinical, including neurochemistry and molecular biology. For that purpose, the programme includes clinical and basic groups with extensive experience in translational research.

The research projects focus on 3 main focal points: Epidemiology and prevention of depression; neurobiological basis of mood disorders; efficacy, resistance and new therapeutic targets in depression.

The main lines of research are:

- Mechanism of action of antidepressants through the study of different receptors.
- Cellular and molecular basis of depression and of the mechanism of action of antidepressant drugs. Intracellular signaling targets. Phenotype and molecular characterization.
- Gene-environment interaction in depression. Genetic predisposition and drug response factors.
- New therapeutic targets. Neuroplasticity and serotonergic neurotransmission. Endocannabinoid system and antidepressant responses.
- New therapeutic tools in depression: Interfering RNA (siRNA), ketamine.
- Deep brain stimulation in depression. Clinical trials in patients. DBS in animal models.
- Validation of various evaluation instruments and change in depressive patients.
- First depressive episodes and neurotoxicity.
- MR study on the different stages of major depression.
- Origin and consequences of neuroinflammation in depression.
- Treatment with TEC: links to neuropsychological and quality of life impairments.
- Incidence of depression in patients with dementia.
- Analysis of suicidal behavior and development of prevention programmes. Suicide incidence, related factors and use of antidepressants in the child-adolescent population.
- Psychosocial difficulties and occupational disability in patients with depression.
- Socio-demographic, clinical and/or pharmacological factors involved in the response to different therapeutic strategies.

Identification of the Coordinator and Associated Groups

Coordinator:

Dr. Víctor Pérez Sola – Hsp. Santa Creu i Sant Pau, Barcelona. G21

Groups involved in the programme:

- G02. Instituto de Investigaciones Biomédicas (Dr. Francesc Artigas Pérez)
- G03. Hospital Universitario La Princesa (Dr. José Luis Ayuso Mateos)
- G06. Univ. de Granada. Facultad de Medicina (Dr. Jorge A. Cervilla Ballesteros)
- G13. Hospital Clínico Universitario de Zaragoza (Dr. Antonio Lobo Satué)
- G17. Hospital Universitario de Bellvitge (Dr. José Manuel Menchón Magriña)
- G20. Universidad de Santander. Facultad de Medicina (Dr. Ángel A. Pazos Carro)
- G21. Hsp. Santa Creu i Sant Pau / Hospital Mar (Dr. Víctor Pérez and Dr. Maria J. Portella)



Therapeutic Innovation

Programme Description

Created in 2011, the CIBERSAM Therapeutic Innovation Programme is essentially formed by basic groups and the Neuroimaging group. It also incorporates the main CIBERSAM clinical groups interested in identifying new therapeutic targets, developing them and their possible application in the field of psychiatric diseases.

The Programme includes the coordinating groups of the Bipolar Disorder Programme (Dr. E. Vieta) and Schizophrenia Programme (Dr. J. Sanjuán), and there is excellent collaboration between several groups with the Depression Programme coordinator (Dr. V. Pérez). This favors the integration of various programmes. In addition, a number of collaborations have been established with various CIBERSAM groups and other CIBERS. The mission of the Therapeutic Innovation Programme (TIP) consists of conducting multidisciplinary and translational research in the fields of depression, schizophrenia and bipolar disorder for the purpose of improving already existing treatments for these diseases.

The programme includes highly trained staff, developing a wide range of lines of work, as well as a range of basic and clinical methodologies.

The main lines of research developed by the Innovation Therapeutic Programme to date include:

- **Neurochemistry/Neurobiology:** Studies on neurotransmitters, receptors (mGluR2, 5-HT1A, 5-HT2A, 5-HT3, CB1, DA, NA-Alpha-2, opioids, etc.) and intracellular signaling mechanisms (ERK-1/2).
- **The role of neuroplasticity/neuroproliferation pathways** in psychiatric disorders. β -catenin, mTOR and BDNF as new targets for psychotropic drugs.
- **Brain circuits in schizophrenia** (GABA interneurons, NMDA-R, thalamocortical circuits, etc.). Mechanism of action of antipsychotic drugs.
- **Mechanism of action of new antidepressant strategies:** deep brain stimulation, (preclinical and clinical studies), ketamine, 5HT4 receptor, siRNA.
- **The role of stress** and its regulating mechanisms in psychiatric disorders.
- Regulation of inflammatory mechanisms, of their origin and consequences in neuropsychiatric disorders.
- Neurobiological mechanisms of **hallucinations and sensitivity to psychotropic drugs.**
- **Genes and neuroimaging** (clinical and preclinical studies).
- Study of the **early stages of Schizophrenia:** molecular models for the early identification of psychosis.

Objectives

- **Neurobiological relations between depression-chronic pain.**
 - **New classifications** (for example polarity index) and **treatments for bipolar disorder.**
 - Methodology for evaluating the efficacy and tolerability of **drugs and non-pharmacological interventions for mental disorders.**
 - **Brain neuroimaging.** Variable diagnosis and prognosis.
-
- To integrate basic and clinical research in a more efficient and multidisciplinary manner by means of **collaborative projects in genetics, neuroimaging, identification of therapeutic targets, animal models of mental disorders and mechanism of action of psychotropic drugs.**
 - To study the **neurobiological basis** of resistance to treatments and the mechanism of action of new therapeutic strategies.
 - To identify **new therapeutic targets and biomarkers** in mental disorders, particularly depression, schizophrenia and bipolar disorder.
 - To study of **the mechanism of action and to design** antidepressant, anti-psychotic and mood stabilizing drugs.
 - To conduct research on and to incorporate **new non-pharmacological treatment strategies.**
 - To develop, improve and evaluate **new basic and clinical research methodologies** for evaluating the effect of drugs and other therapeutic interventions.
 - To **transfer basic knowledge** to clinical practice and vice versa.
 - To **reposition drugs.**
 - **Early identification of psychosis by means of biological markers.**

Identification of the Coordinator and Associated Groups

Coordinator:

Dr. Francesc Artigas Pérez - Instituto de Invest. Biomédicas de Barcelona. G2

Associated Groups:

G2. Instituto de Invest. Biomédicas de Barcelona. CSIC (Dr. Francesc Artigas Pérez)

G7. Hospital Gregorio Marañón (Dr. Manuel Desco Menéndez)

G12. Univ. Complutense de Madrid. Facultad de Medicina (Dr. Juan C. Leza Cerro)

G16. Universidad del País Vasco (Dr. José Javier Meana Martínez)

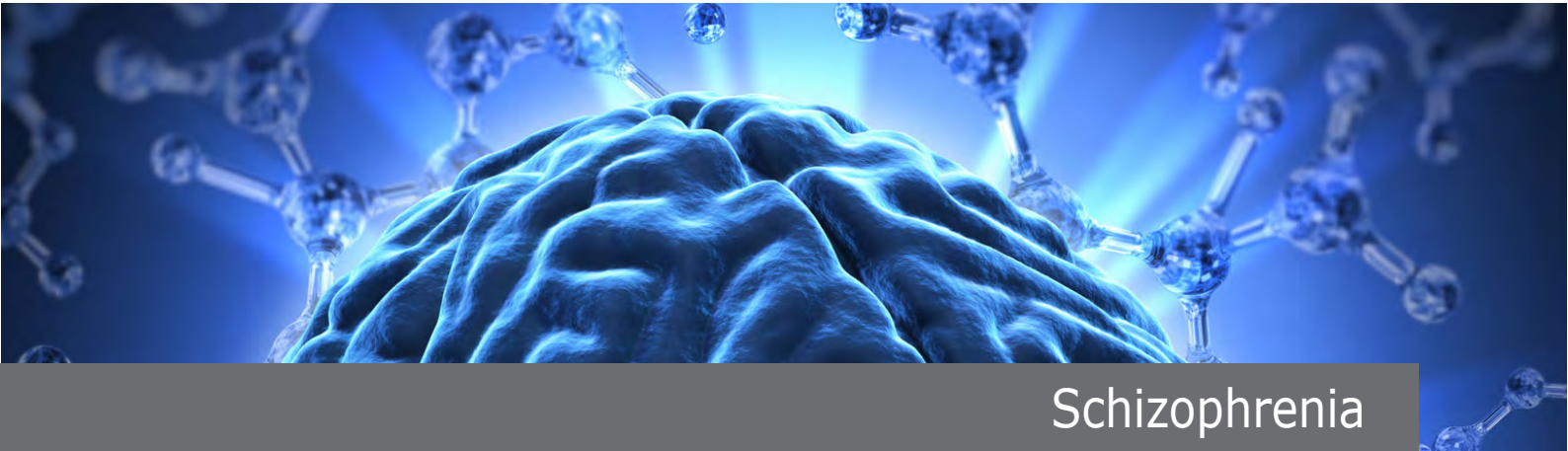
G18. Universidad de Cádiz. Facultad de Medicina (Dr. Juan Antonio Micó Segura)

G20. Universidad de Cantabria. Facultad de Medicina (Dr. Ángel A. Pazos Carro)

G23. Universidad de Valencia. Facultad de Medicina (Dr. Julio Sanjúan Arias)

G25. Hospital Clínic de Barcelona (Dr. Eduard Vieta Pascual)

G26. Hospital Universitario Marqués de Valdecilla (Dr. Benedicto Crespo Facorro)



Schizophrenia

Programme Description

Serious mental disorders, particularly schizophrenia, are a priority line of research in the World Health Organization and the European Economic Community. The Schizophrenia Programme involves the largest number of groups (12). This programme has a very extensive clinical, genetic and neuroimaging database in the different CIBERSAM platforms. Important collaborative projects relating to the progression of first psychotic episodes have been developed through this programme.

Objectives

- To increase the number of samples from patients diagnosed with schizophrenia sent to the different platforms: DNA, Brain Bank, Neuroimaging, GRIDSAM.
- To study the genetic, neurophysiological, neuroimaging (structural, neurochemical and functional) and biochemical variables in the initial stages of psychosis.
- To study the neurobiological (genetics, neuroimaging and neurophysiological) basis of the different symptomatological phenotypes of schizophrenia.
- To study the clinical and neurobiological response phenotypes (neuroimaging, neurophysiological and cognitive) to different pharmacological treatments.
- To conduct research on the efficacy and effectiveness of psychotherapeutic treatments in combination with standard pharmacological treatments in schizophrenia.
- To study the repercussions of schizophrenia on the state of health, psychosocial adjustment, quality of life, the individual's levels of disability and on patient service use patterns and the effect on comorbidity.

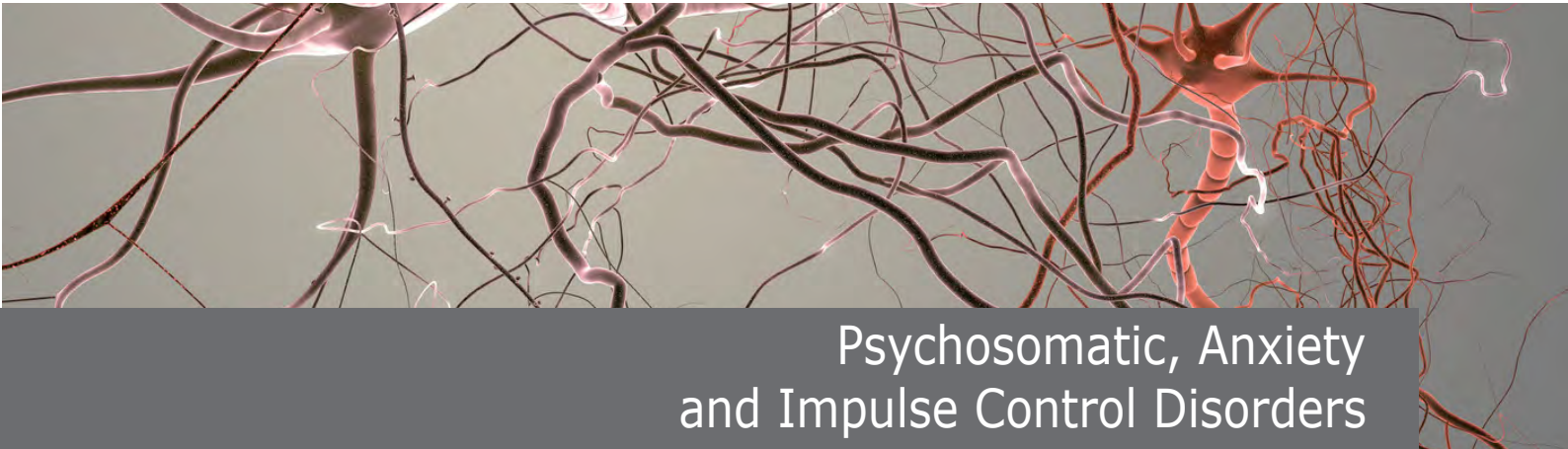
Identificación del coordinador y los grupos adscritos

Coordinator:

Dr. Julio Sanjuán Arias - Universidad de Valencia. Facultad de Medicina. G23

Participating groups:

- G01. Hospital Gregorio Marañón (Dr. Celso Arango López)
- G04. Hospital Clínic de Barcelona (Dr. Miquel Bernardo Arroyo)
- G05. Universidad de Oviedo. Facultad de Medicina (Dr. Julio Bobes Garcia)
- G08. Univ. de Barcelona. Facultad de Biología (Dr. Lourdes Fañanás Saura)
- G10. Hospital Santiago Apostol (Dr. Ana González-Pinto Arrillaga)
- G11. Fundación Sant Joan de Deu (Dr. Josep Maria Haro Abad)
- G15. Benito Menni Complex Assistencial (Dr. Peter J. Mckenna)
- G16. UPV Facultad de Medicina (Dr. José Javier Meana Martínez)
- G19. Hospital Universitario 12 de Octubre (Dr. Tomás Palomo Álvarez)
- G22. Hospital Ramón y Cajal (Dr. Jerónimo Saiz Ruiz)
- G23. Universidad de Valencia. Facultad de Medicina (Dr. Julio Sanjuán Arias)
- G26. Hospital Univ. Marques de Valdecilla (Dr. José Luis Vázquez-Barquero)



Psychosomatic, Anxiety and Impulse Control Disorders

Programme Description

Mental disorders as a whole constitute one of the most important health issues due to the social, economic and personal burden they entail.

Research on psychosomatic, anxiety and impulse control disorders focuses its interest on eventually dominating pathologies which impose a high cost on society and on the quality of life of individuals due to their high prevalence or the intensity of their manifestations. Psychosomatic comorbidity studies, an expanding field of psychiatry, offer significant prospects for the entire field of medicine as they document the effect of physical diseases on physical functions as well as the effect that psychopathology may have on the onset and progress of somatic diseases.

Current research conducted by CIBERSAM groups in this programme may have broad implications due to its ability to both involve good clinical services that are not yet well developed relating to research, and to enhance the involvement of the groups in scientific projects and studies.

Objectives

- To develop a line of research on aging, and specifically on healthy aging, and relating to the disorders of this programme.
- To continue developing the line of research on inflammation relating to stress disorders, anxiety disorders and other disorders of this programme.
- To continue leading research on the line of “services” for psychiatric pathology in general hospitals and primary care centres.
- To continue developing different longitudinal epidemiological and risk factor studies in medical populations, including primary care, and to continue sharing epidemiological databases.
- To develop the line of work relating to suicide.
- To continue studies on obsessive-compulsive disorder (OCD).
- To continue the line of research on the neurobiological and psychosocial aspects of pain.
- To lead research in the area of disorders with physical and somatic comorbidity.

Identification of the Coordinator and Associated Groups

Coordinator:

Dr. Antonio Lobo Satué - Hospital Clínico Universitario de Zaragoza. G13

Participating groups:

G6. Univ. de Granada. Facultad de Medicina (Dr. Jorge A Cervilla Ballesteros)

G11. Fundación Sant Joan de Deu (Dr. Josep Maria Haro Abad)

G12. UCM. Facultad de Medicina (Dr. Juan Carlos Leza Cerro)

G13. Hospital Clínico Universitario (Dr. Antonio Lobo Satué)

G17. Hospital Universitario de Bellvitge (Dr. José Manuel Menchón Magriña)

G18. Universidad de Cádiz. Facultad de Medicina (Dr. Juan Antonio Micó Segura)

G19. Hospital Universitario 12 de Octubre (Dr. Tomás Palomo Álvarez)

G21. Hospital de la Santa Creu i santa Pau (Dr. Víctor Pérez)

G22. Hospital Ramón y Cajal (Dr. Jerónimo Saiz Ruiz)



3

Horizontal Programmes



European Programmes and International Relations



José L. Ayuso Mateos
(G03)

European Programmes
 and International Relations
 Area Coordinator

CIBERSAM's goal is to become the centre of reference for research on mental disorders not only in Spain, but also internationally. To that end, there is a need to encourage CIBERSAM research groups to conduct and lead collaborative research with prestigious European and international centres.

Objectives

- To enhance CIBERSAM group participation in calls for European and international projects, offering support to groups that want to embark on such initiatives.
- To encourage CIBERSAM investigators to coordinate European projects.
- To establish contacts with the authorities involved in funding mental health research in Europe and abroad to stimulate the creation of calls for proposal in the CIBERSAM priority research areas.

Summary of activities

In 2013, CIBERSAM increased its exposure in Europe and abroad and successfully positioned itself in a prominent spot within the main European mental health research networks. Some of the achievements of the different CIBERSAM groups in this programme are detailed below:

- 198 publications (43.8% of all CIBERSAM publications) were created as a result of international collaborations in 2013..
- The participation of many CIBERSAM members in projects from different calls for proposal increased exponentially: 7th Framework Programme of the European Commission and of the US National Institute of Health (NIH), USA. There was a total of 20 active European and international projects in 2013 and three newly granted projects will start in 2014. In total, 56% of the groups forming CIBERSAM participated in these projects (n=14).
- CIBERSAM groups not only participate in these calls for proposal but also actively promote CIBERSAM managing said calls. In 2013, CIBERSAM managed two projects and coordinated one. In addition, another two projects which were approved in 2013 will also be managed by CIBERSAM starting 2014 (see the list below). All this gave CIBERSAM an image of being a reliable and efficient institution in terms of leading and managing European projects.

- Likewise, in 2013 a large number of European/international coordinating activities were promoted by CIBERSAM investigators belonging to the ROAMER consortium.

Some of the more outstanding activities include:

- The first meeting of the Board of Funding and Governmental Institutions for Research to discuss the needs to conduct research on mental health and well-being in Europe and to explore the possibility of establishing strict collaboration between EU Member States for coordinating national and international mental health research programmes. The meeting was held in Brussels (Belgium) on June 20, 2013.
- Second round of scientific workshops with groups of European experts. These meetings took place all over Europe for the purpose of re-analyzing the knowledge gaps and defining the necessary advancements and a list of priorities for research in the different mental health areas.
- Second round of meetings with the advisory project councils and steering council to review the knowledge gaps and the list of necessary advancements for research on mental health and well-being in Europe. The meeting took place in Barcelona on November 25, 26 and 27, 2013.

Finally, as a result of these meetings, different CIBERSAM investigators have established contacts with different European and international centres for the preparation of project proposals in the new "Horizon 2020" framework programme that will commence in 2014.



*Area Meeting: Well-being (ROAMER project):
February 4, 2013. Universidad Autónoma de Madrid. Spain*

Active European/international projects managed by CIBERSAM in 2013:
(groups managing the project directly on behalf of CIBERSAM are in bold print)

- ROAMER| Roadmap for Mental Health Research in Europe. G01, G03, G06, G10, G11, G25, G26 (Coordinator: Haro) (PI: Ayuso).
- STOP | Suicidality: Treatment Occurring in Paediatrics. G01, G04 (PIs: Arango and Castro).
- MARATONE | Mental Health Training through Research Network in Europe. G03, G11 (PIs: Ayuso and Haro).

European/international projects granted in 2013 that will be managed by CIBERSAM in 2014:

- PSYSCAN| Translating neuroimaging findings from research into clinical practice G01, G26 (IPs Arango y Crespo).
- RFA-MH-120 | Genomic Risk and Resilience in 22q11 Deletion Syndrome: A Window into the Genetic Architecture of Mental Disorders. (Collaborative RO1-NIH). G01 (Arango).

Quality and Internal Evaluation



**Ana González-Pinto
(G10)**

Quality and Internal
Evaluation Area Manager

Indicators 2013

Actions such as administrative procedure standardization were carried out in 2013. It was verified through audits that the CIBER de Salud Mental complies with the requirements described in the ISO 9001:2008 standard.

	2012 situation indicator	2013 objective	2013 situation	Observations
No. of quality group meetings	5	5	5	5 meetings were held in 2013
No. of quality group meetings with other areas	3	3	3	3 meetings were held in 2013
No. of areas of improvement detected	3	3	4	Dissemination of CIBERSAM through Twitter Making two tutorial videos to help in intranet management (administrative management and scientific activity). Conducting an online training course, "Intranet Training", to improve knowledge on the Intranet for both administrative management and scientific activity. Conducting Customer Satisfaction Survey to assess Technical Unit service.
No. of survey analyses	2	2	3	Assigning responsibilities for managing the "Financial", "Human Resources and Occupational Health and Safety" and "Economic Resources and General Services" Departments to achieve better operation of the new CIBER Management Unit. Holding "CIBER Informative Meeting" to provide information about the operation of the new CIBER Management Unit. Launching a new plan of communication with pharmaceutical companies for presenting CIBERSAM to newly appointed managers of said companies (coordinated with the Institutional Relations Area).
Nº encuestas de satisfacción interna realizadas	1	1	1	Designing the CIBERSAM member satisfaction survey.
Nº encuestas de opinión externa realizadas	1	1	1	Pharmaceutical laboratory satisfaction survey.
Nº análisis encuestas	1	1	1	Pharmaceutical laboratory satisfaction survey.

In this context of improvement, evaluation is necessary and CIBERSAM stresses the evaluation of its structure, processes, and scientific production:

- Structure: the qualification, technological capacity, infrastructure, economic-administrative organization, management of human and material resources are taken into account.
- Processes: the accomplishment of CIBER's mission, the relevance of its activity on a national and international level and the coherence in planning, disclosing and disseminating its results stand out.
- Scientific production: production is assessed with respect to the available funds, the number of publications, projects, patents and the development over time.

CIBERSAM has a code of Good Research Practices adopted by all its investigators. Complying with the code of Good Scientific Practice means maintaining ethical principles and legal requirements in accordance with international ethical standards in research stated in the Helsinki Declaration (obtaining informed consent, comprehensive assessment of the risk/benefit ratio of the study and impartiality in selecting study participants and performing follow-up), as well as CIBERSAM Good Scientific Conduct Committee (GSCC). These are the essential elements in any research work aiming to expand scientific knowledge within a framework of credibility and respect from society. Furthermore, CIBERSAM has added to its Quality Management System an operating protocol based on national and international ethical standards for managing and transferring biological samples between CIBERSAM laboratories (from test animals or experiments with cells and from patients or controls). This protocol assures the quality and stability of the samples under its control and of the data relating to said samples at all times.

CIBER de Salud Mental has a quality control system for research and management activities. The Steering Committee, the Scientific Committee as well as the area, line and/or project coordinators and managers make sure that the objectives are complied with and that the scientific methods have the appropriate quality attributes.

In 2013, actions for evaluating and monitoring objectives, indicators and processes defined in the Strategic Plan based on the ISO standard were conducted.

- Defining and monitoring areas of improvement and prevention detected in areas of management and research activity.
- Defining and monitoring areas of improvement resulting from analyzing satisfaction surveys.
- Analyzing results of the pharmaceutical laboratory external satisfaction survey.
- Designing an internal satisfaction survey for CIBERSAM members.
- Determining areas of improvement and preventive actions relating to the CIBER Management Unit.
- Increasing CIBERSAM scientific activity dissemination through social networks.

Institutional Relations and Communication



Miguel Bernardo
(G4)

Institutional Relations
and Communication Area
Manager

The CIBERSAM Institutional Relations and Communication Area led by Dr. Miguel Bernardo (2011-2014) aims to facilitate CIBERSAM's connection with the environment and community and to coordinate collaborations particularly with biomedical and health research institutions and bodies, as well as to promote coordination with other entities that share similar objectives and to increase the exposure of CIBERSAM as a whole in society.

Institutional Relations and Communication objectives:

- To coordinate with entities such as Instituto de Salud Carlos III (ISCIII), Consejo Superior de Investigaciones Científicas (CSIC) and other public research bodies.
- To promote coordination with consortium centres.
- To facilitate the exposure of CIBERSAM and of the groups forming it in society as a whole and in the mass media.
- To promote activities for disseminating the research activities conducted by CIBERSAM.
- To enhance CIBERSAM's presence in social communication networks: Twitter, Facebook, Youtube, linked in, vimeo and blogs.
- To promote dissemination and communication of Workshops and Courses of CIBERSAM groups.
- To foment relations with family and patient associations.



4

Transversal Platforms

for supporting Research and
Common Infrastructures



Transversal Platforms



Josep M. Haro Abad
(G11)

Platform Area Manager

CIBERSAM includes 5 research support platforms:

- DNA Bank Platform
- Brain Bank Platform
- Library of Mental Health and Disability Instruments Platform
- Neuroimaging Platform
- Common Databases Platform

These infrastructures are equipped with highly qualified staff providing significant research support. These platforms provide support both to CIBERSAM research groups and to external groups that conduct mental health research activities.

The Library of Instruments Platform provides investigators with information and services with respect to mental health measuring instruments and surveys.

The Brain Bank Platform provides brain tissue samples obtained from individuals with mental disorders and controls.

The DNA Bank Platform includes 9,721 samples obtained from individuals with mental disorders, and it also includes samples from healthy controls.

The Neuroimaging Platform is a technical group the main objective of which is to enhance the use of quantitative analysis techniques in neuroimaging. It has a collection of thousands of images.

The Clinical Data Platform provides an online tool to record sociodemographic, clinical, and research information. It has more than 22,493 patients with a total of 79,106 evaluations. The DNA and Neuroimaging Platforms are integrated with the clinical data platform.

2013 Indicators

INDICATOR	2012 STARTING SITUATION	2013 OBJECTIVE	SITUATION	OBJECTIVE ACHIEVED
INSTRUMENT BANK PLATFORM				
No. of new instruments added to the database	45	40	53	Yes
% increase in no. of queries made in the bank	17	Incr. 10%	7	No
BRAIN BANK PLATFORM				
No. of new samples	48	Incr. 5%	0*	No
No. of intra-CIBERSAM donations	67	Incr. 10%	82	Yes
No. of total donations	104	Incr. 10%	112	Yes
No. of toxicology service collaborations	78	Incr. 10%	-	No
No. of CIBERSAM articles prepared with samples from the bank	5	7	7	Yes
* Inability to collect new samples due to internal biobank restructuring				
NEUROIMAGING PLATFORM				
No. of patients added to the platform	311	Incr. 10%	619	Yes
No. of images processed in the platform	313	Incr. 10%	3.059	Yes
Total no. of patients in the platform	841	Incr. 10%	1.460	Yes
No. of images in the platform	1317	Incr. 10%	8.785	Yes
DNA PLATFORM				
No. of coordinating group meetings	6	2	6	Yes
No. of studies conducted using the platform	8	8	8	Yes
No. of samples collected	8525	Incr. 10%	9721	Yes
CLINICAL DATA PLATFORM				
No. of patients in the platform	19.719	Incr. 5%	22.493	Yes
No. of articles prepared using the platform	5	4	6	Yes
OTROS				
No. of queries made in platforms by investigators outside CIBER	4	4	6	Yes
No. of training activities organized by the platforms		2	2	2
No. of networks with participation of the platforms	1	1	1	Yes
% platform cost covered by external income (CIBERSAM extra)	50.000	Incr. 10%	70.000	Yes
Organization of scientific conference for all platforms	2	2	1	No



DNA Bank Platform



MANAGER

Dr. Celso Arango López (G01)

SCIENTIFIC COMMITTEE:

Dr. Julio Sanjuán Arias (G23)

Dr. Lourdes Fañanás Saura (G08)

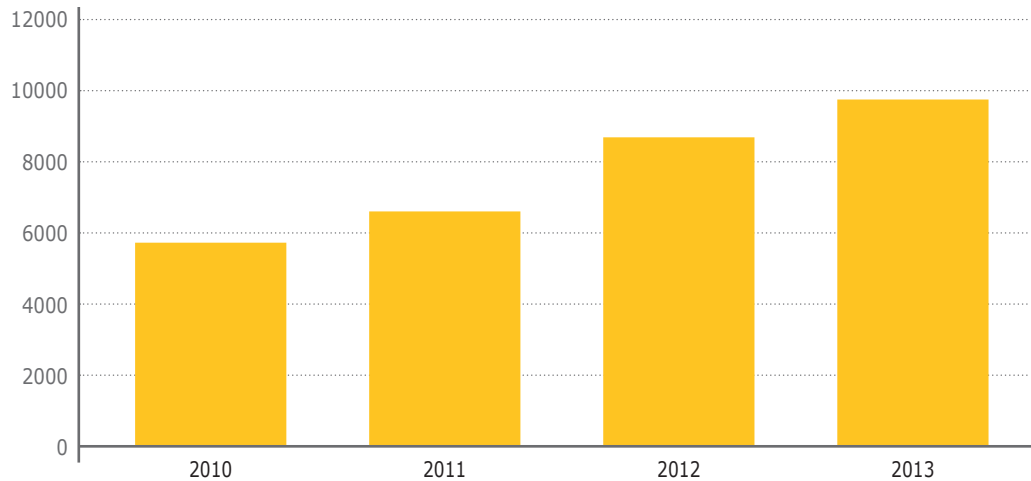
Dr. Jorge Cervilla Ballesteros (G06)

Dr. Josep Maria Haro Abad (G11)

In 2013, a total of 748 samples obtained from patients with schizophrenia, affective disorders and autism spectrum disorders were included in the CIBERSAM DNA sample collection. The number of healthy controls also increased by 737. The following summarizes sample collection activity in 2013.

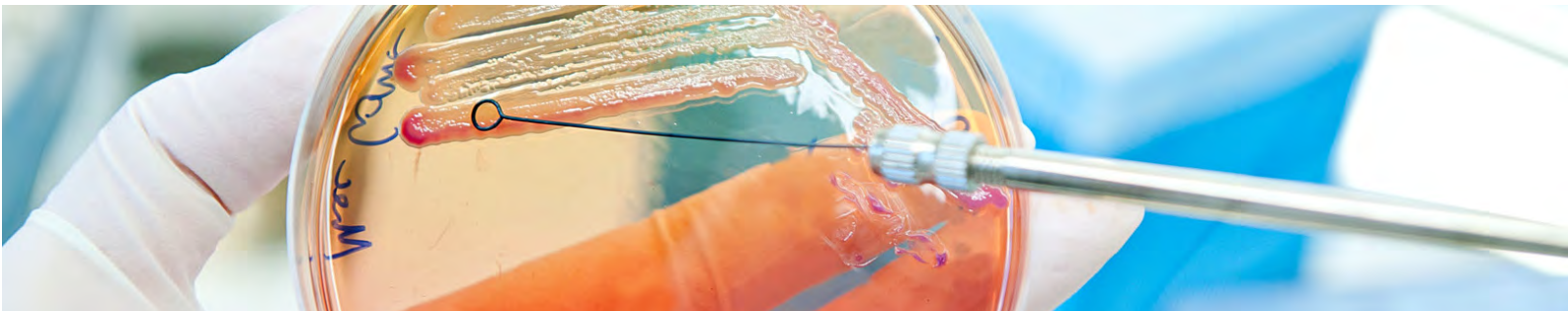
CENTRE	CITY	SAMPLES
Hospital Gregorio Marañón	Madrid	1059
Universidad de Oviedo	Oviedo	132
Hospital Clínic Barcelona	Barcelona	55
Universidad de Valencia	Valencia	138
Hospital Clínico Santiago de Compostela	Santiago Compostela	101
TOTAL		1.485

Like in previous years, new projects were incorporated in the platform in 2013, with the inclusion of almost 1,500 new samples. This brings the total number of samples to 9721. Progression in the number of samples since the creation of the platform can be verified in the following graph:



Several teleconferences between the committee members of this platform has led to an agreement to update and improve the protocol for sending samples to the bank, such that any CIBERSAM group can send samples to the platform in a clear and unequivocal manner (<http://www.cibersam.es/cibersam/Plataformas/Plataformas%20de%20Investigaci%F3n/Banco%20de%20ADN>). This protocol and documents were approved by all CIBERSAM PIs. The collection has also been officially managed and registered and is now registered in the National Biobank Registry (Instituto de Salud Carlos III).

The platform is also linked to the CIBERSAM common data bank for better characterization and for assuring correct identification of samples and the existence of a minimum set of data assuring data use and facilitating data search. Any CIBERSAM group can therefore know the number of patients or controls that comply with a series of characteristics, the CIBERACIBERSAM group to which the data belong, the project to which each sample belongs, or if a CIBERSAM sample belongs to the data, the project to which each sample belongs or if a specific sample is included in several projects.



Library of Mental Health and Disability Instruments Platform



MANAGER

Dr. Josep M. Haro Abad (G11)

SCIENTIFIC COMMITTEE:

- Dr. Josep M. Haro (G11)
- Dr. Ana González-Pinto (G10)
- Dr. Eduard Vieta Pascual (G25)
- Dr. José Luis Ayuso (G03)
- Dr. Julio Bobes (G05)
- Dr. Antonio Lobo (G13)
- Dr. Celso Arango (G01)

The Library of Mental Health and Disability Instruments has over 250 instruments distributed according to the different areas of interest.

The Bank includes 257 instruments: 8.17% correspond to the diagnosis area, 28.4% to the symptomatology area, 10.5% to childhood/adolescence, 5.4% to special populations, 12.8% to neuropsychology, 5.05% to disability and 29.7% others (family burden, social skills, service satisfaction, adverse events, dual pathology and quality of life).

Number of instruments added to the database in 2013	53
Number of queries made in the Bank in 2013	7
Number of published articles for projects funded by the last calls for proposal (2012)	5



Brain Bank Platform



MANAGER

Dr. José Javier Meana (G16)

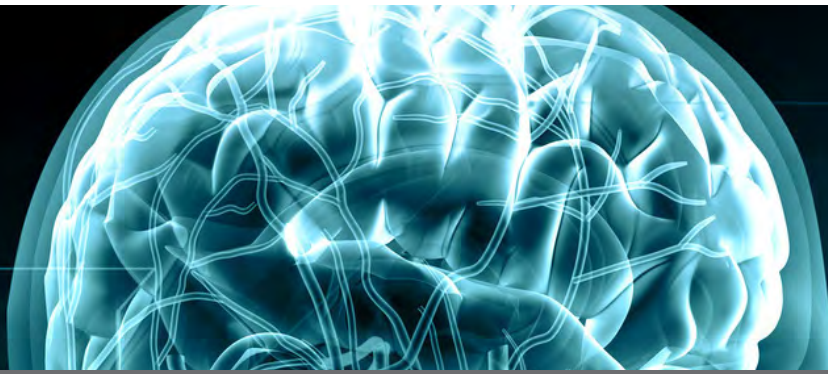
SCIENTIFIC COMMITTEE:

Dr. Josep M. Haro (G11)

The Brain Bank Platform and brain sample collections is the basic structure in translational psychiatric research. There are currently three nodes linked to the Fundación Sant Joan de Déu, Universidad del País Vasco and Universidad de Cantabria groups.

The platform amasses samples with quality criteria, donor's clinical data and toxicological data. The bank has taken in new samples and transferred out 72 samples. The Fundación Sant Joan de Déu has successfully earned biobank accreditation and is now not part of the Biobanks Network created by the Instituto de Salud Carlos III. The process of incorporating donors and for obtaining samples to be transferred out for national and international scientific projects continues in 2013.

Number of intra-CIBERSAM donations	32
Total number of donations	72
Number of toxicology service collaborations	0
Number of CIBERSAM articles prepared with samples from the Bank	5
New Brain Bank web page	X



Neuroimaging Platform



MANAGER

Dr. Manuel Desco (G07)

SCIENTIFIC COMMITTEE:

Dra. Núria Bargalió (G04)

Dr. Josep Maria Haro (G11)

Dr. Raymond Salvador (G15)

Dr. Julio Sanjuán (G23)

Dr. Benedicto Crespo (G26)

The Neuroimaging Platform is a technical group within CIBERSAM having the main objective of enhancing the use of quantitative analysis techniques in neuroimaging. This Platform is the link between groups specializing in processing and analysis in the CIBER de Salud Mental. It also acts as a bridge between clinical users and external groups having a technical profile and proven experience in image processing. The permanent resources of the Neuroimaging Platform are located in the Medical Imaging Laboratory of the Experimental Surgery and Medicine Unit of Hospital General Universitario Gregorio Marañón, Madrid. The services of this Platform are available for all investigators of the Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM).

Some of the activities conducted by the Neuroimaging Platform in 2013 include the implementation of a neuroimaging processing and analysis protocol (structural, disseminating and functional processing flows), the constant update of acquisition sequences in magnetic resonance as well as the development of methods of advanced quantification and statistical analysis of structural and functional connectivity in psychotic, autistic and healthy subjects. In relation to the resources available in the Platform, maintenance of the DICOM image server via web has been extremely useful for storing a large volume of anonymized images, including the different magnetic resonance imaging types. Neuroimaging processing was made more efficient this year as a result of managing the parallel processing server using virtualization, which is very useful in multicentre studies. The platform also continued updating and broadening the range of available processing tools, highlighting the development of tools for the processing and statistical analysis of fMRI images in small animals.

2013 Activity:

Collaborations with external groups: Universidad Carlos III de Madrid (UC3M), Philips, Instituto de Investigación en Ingeniería de Aragón (I3A), Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Unitat de Recerca en Neurociència Cognitiva (URNC), Centro Nacional de Investigaciones Oncológicas (CNIO), Centre d'Imatge Molecular (CRC CIM), Sociedad Española de Electromedicina y Calidad (SEDECAL).

Number of projects using the Platform	14
Number of processed studies	3755



Common Database Platform



MANAGER

Dr. Julio Sanjúan Arias (G23)

The Platform for data collection (<http://gridsam.grycap.upv.es/>) was developed by the Grid and High Performance Computing Group (GRyCAP) of the Universidad Politécnica de Valencia with the clinical coordination of Group G23 (Universidad de Valencia). The Platform's objective is to allow systematic data collection that is distributed in CIBERSAM projects. Each project included in the platform can have customized data and questionnaires to be collected. It is also possible to obtain data from several projects simultaneously, so the platform becomes a strategic element for collaborative projects. This platform is linked to the DNA and Neuroimaging Platforms so it can provide extensive clinical and sociodemographic data about the collected samples.

The number of projects included in the common database increases constantly. Some of said projects currently include:

- Analysis of risk polymorphisms in whole-genome association studies (WGAS) in psychosis.
- A case-control study on the interaction between polymorphic variation at genes implicated in neurogenesis and environmental risk factors in major depression: "DEPREGENE" Study.
- First psychotic episodes (FPEs). Led by Miguel Bernardo
- The DNA Bank project brings together all subjects (patients and controls) having DNA samples.
- Autism Biobank Project, led by Mara Parellada.
- FlamDepre Project, led by Juan Carlos Leza.
- Psychoeducational project, led by Ana González Pinto.
- 2EPS projects (ongoing), led by Miquel Bernardo.
- AGES-CM, Environment and Genes in Schizophrenia project – Research Groups from the Autonomous Community of Madrid, led by Celso Arango.

This Platform provides centralized storage through a web application housed in a server located at the Universidad Politécnica de Valencia for all structured and duly coded data of the CIBERSAM projects mentioned above.

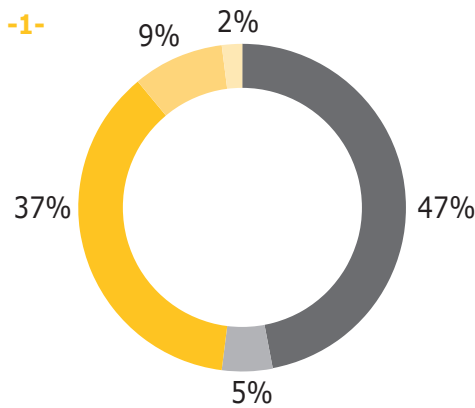
Total no. of cases: 22,493

Total no. of forms: 79,106

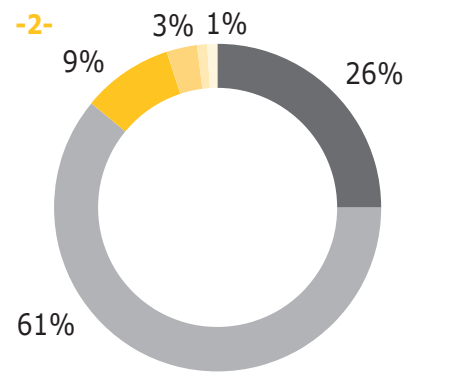
No. of cases added in 2013: 2,420

No. of forms added in 2013: 2,649

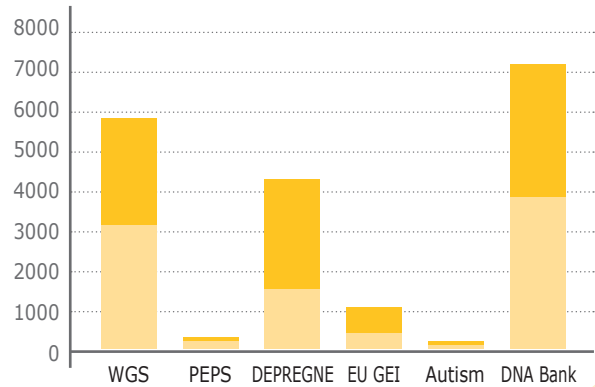
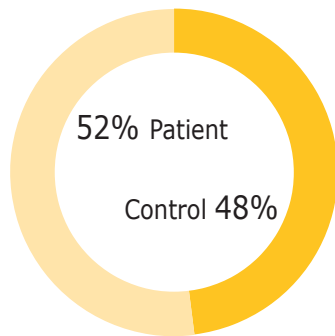
1. Subjects (Patients + Controls)



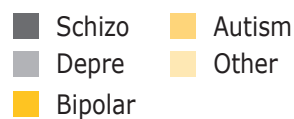
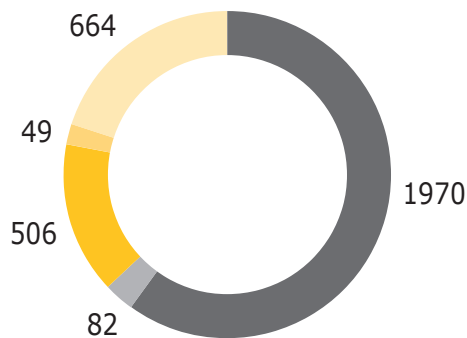
2. Forms



Number of cases (Patients / Controls)



List of DNA sample



Supported tasks

Consolidating the platform requires a number of telephone calls and emails, therefore the investigators are provided with a customized helpline. The system is available 24/7 and provides services to staff during working hours (from 8 am to 7 pm) which allows reacting to problems suitably. To prevent data loss in the event of a technical problem, total and partial database backups are scheduled on a daily and weekly basis. The system has a built-in helpdesk option as well as help documents explaining the content of all the system's variables.

This application was developed taking the following options into account:

- Recruitment of patients and controls for transverse and longitudinal projects.
- Mandatory and optional forms.
- Sharing of patients between different projects (particularly important for controls).
- Collection of clinical, demographic, genetic and imaging data.
- Support for different user profiles (project leader, data collection, centre manager, etc.).
- Report management.
- Data collection and activity statistics in the last period.
- Consolidated data export for statistical analyses through standard applications.
- Multiple user, multicentre, ubiquitous access.
- Support of standardized questionnaires.
- Support for several languages
- Internal quality control on data and collection quality indicators.

Specific Activity conducted in 2013

Three new projects, namely, AGES-CM (Environments and Genes in Schizophrenia), Psychoeducation, and 2EPs (Second psychotic Episodes), were incorporated or are currently under the coding process.

The application has been completely refactored, such that there is now a new code which uses the latest web technologies:

XMLHttpRequest.DOM (Document Object Model)

JSON (JavaScript Object Notation)

Jquery (Framework de Javascript)

AJAX (Asynchronous JavaScript And Xml)

This recoding has allowed speeding up the global search and improving interrelation between projects.

Finally, support has been given to requests for changes and modifications in the different projects and specific errors in the system have been corrected (changes in coding, incorrectly exported variables, etc.).

A woman with glasses on her head, wearing a light blue lab coat, is looking through a microscope. The scene is set in a laboratory with a warm, yellowish light. The image is overlaid with a large, white, circular graphic element that frames the text.

5

Scientific Activity

Specific of CIBERSAM
(Result as a consortium)



Mobility Actions

The most relevant mobility actions within CIBERSAM have been produced, on one hand, within training activities, and on the other hand, from the coordination activities of the European ROAMER project. The general aspects of both activities are described in other sections.

With respect to training

- The first classroom Master's course in Introduction to Mental Health Research focusing on psychopharmacology was successfully carried out in Santander. Two students from other CIBERSAM groups participated in the course.
- Furthermore, the Training Programme has funded 3 internships of its members lasting for over 2 weeks. One of said internships was in another group of the consortium itself (G25), one was in CIBERNED, and the last one was in Great Britain.

The European coordinating activities within the ROAMER project have generated significant mobility of CIBERSAM members.

- **Scientific workshops with groups of European experts:**

- Dr. Obradors and Dr. Miret. Geographical, Multidisciplinary, Clinical and Life-Course Integration (WP2). Amsterdam (Holland).
- Dr. Josep Maria Haro, Dr. Obradors, Dr. Miret, Dr. Sanjuán and Dr. Pazos. Infrastructures, funding, and generation of research capacity (WP3). Paris (France)
- Dr. Obradors and Dr. Miret. Biomedical Research (WP4). London workshop (United Kingdom)
- Dr. Obradors and Dr. Miret. Socioeconomic Aspects (WP6). London (United Kingdom)
- Dr. Obradors and Dr. Miret. Public Health (WP7). Gothenburg (Sweden)

- **First meeting of the Board of Funding and governmental Institutions for Research** to discuss the needs to conduct research on mental health and well-being in Europe

- Dr. Josep Maria Haro, Dr. Obradors and Dr. Ayuso. Brussels (Belgium)



Training Actions



MANAGER:

Dr. Angel Pazos

A Training Programme which seeks to become the point of reference in mental health training in this country and to facilitate the access of young investigators to new scientific knowledge has been operating since CIBERSAM was created. The core element of said Programme is the development of a **Master's course in Introduction to Mental Health Research** that will begin in the 2014-2015 academic year. Along with said Master's course, this Programme also contemplates the possibility of funding CIBERSAM member participation in other courses related to the various area of work, preferably those courses offered by CIBERSAM itself. Furthermore, the Programme also provides funding for research placements in other units of the CIBERSAM, of other CIBER, or abroad.

Classes for said Master's course started in September 2013. It is an inter-university Master's course which includes the participation of the Universidad Complutense, Universidad de Barcelona, Universidad Autónoma de Barcelona, Universidad de Cádiz and Universidad de Cantabria which coordinated the study. **Eleven CIBERSAM groups officially took part in teaching**, and all the other groups participated in a more indirect manner. In addition to the funds from the Programme itself, support and funding from the Fundación Lilly also helped in setting up the course.

The Master Programme (60 credits) is characterized by having a strong virtual component as well as mandatory clinical and basic internships. Therefore, it addresses aspects relating to research foundations, the neurobiological basis and diagnostic, clinical and therapeutic approaches. In the last trimester of 2013, 6 classes of the Master's course have already been given, one of them being a classroom course and the remaining 5 online courses. The number of students registered to this first ever Master's course offered by CIBERSAM amounted to 33. They were from all over Spain and have different research backgrounds (medicine, psychology, biology, etc).

As regards funding provided by the Programme, CIBERSAM has assigned two thirds of its training budget for partial funding of investigators' participation in the Master's. Out of the 33 students registered for the Master's in the various universities, **a total of 11 groups from the consortium have benefited from a partial registration subsidy**: 6 students benefitted directly as they belong to the CIBERSAM groups and 5 other students benefitted by way of scholarship for people not yet belonging to CIBERSAM but having a close relationship with it.

Outside the Master's, the Training Programme has provided 23 aid packages to attend courses for CIBERSAM members: of those, 19 took place in Spain (12 in courses organized or coordinated by its groups) and 4 abroad (Great Britain, Germany). The significant attendance to the Intensive Courses for an Introduction to Neurosciences must be noted. The Training Programme also funded 3 internships for CIBERSAM members, 1 in another CIBERSAM group, another one in an CIBERNED group and the rest in Great Britain. Taking into account the aforementioned budget reserve, it is important to note that the funding objectives established in the Programme have generally been met in 2013.



Presentation of the Master of Research in Mental Health



Dissemination Actions

Institutional Relations and Communication

The CIBERSAM Institutional Relations and Communication Area led by Dr. Miguel Bernardo (2011-2014) aims to facilitate CIBERSAM's connection with the environment and community and to coordinate collaborations particularly with biomedical and health research institutions and bodies, as well as to promote coordination with other entities that share similar objectives and to increase the exposure of CIBERSAM as a whole in society.

Institutional Relations and Communication objectives:

- To coordinate with entities such as Instituto de Salud Carlos III (ISCIII), Consejo Superior de Investigaciones Científicas (CSIC) and other public research bodies
- To promote coordination with consortium centres.
- To facilitate the exposure of CIBERSAM and of the groups forming it in society as a whole and in the mass media.
- To promote activities for disseminating the research activities conducted by CIBERSAM.
- To enhance CIBERSAM's presence in social communication networks: Twitter, Facebook, Youtube, linked in, vimeo and blogs
- To promote dissemination and communication of Workshops and Courses of CIBERSAM groups
- To foment relations with family and patient associations

Web dissemination of the awards and accreditations earned by CIBERSAM groups:

- G18: obtaining authorization from the Ministry of Economy and Competitiveness to release reports relating to ethical constraints in animal research, specifically for models of psychiatric disease, neurological disease and pain.
- G22: Dr. Hilario Blasco obtains a research award from the European Psychiatry Association (EPA).
- G23: obtained the PRO-ACEDEMIA award
- G25: NARSAD funding granted to conduct a clinical trial for examining the role of BDNF growth factor in long-term cognitive and functional deficit in bipolar disorder.

Web dissemination of CIBERSAM group publications:

- Article: Behavioral, neurochemical and morphological changes induced by the overexpression of munc18-1a in brain of mice: relevance to schizophrenia, published in *Translational Psychiatry* journal. The authors are members of CIBERSAM groups G07, G09, G12, G16, G18 and G20.
- Article: Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia, published in *Schizophrenia Bulletin*. The authors are members of CIBERSAM groups G01, G04, G05, G10, G12, G13, G18 and G19.
- Article: Diversity in human conduct: genes, environment or both?, published in *Biological online*. The authors are members of group G08
- Article: Inverse cancer comorbidity: a serendipitous opportunity to gain insight into CNS disorders, published in the *Nature Reviews Neuroscience* journal. The authors are members of CIBERSAM group G24.
- Article: Efficacy of Functional Remediation in Bipolar Disorder: A Multicenter Randomized Controlled Study, published in the *American Journal of Psychiatry*. The authors are members of CIBERSAM groups G01, G03, G05, G10, G15, G17, G21, G22, G24, G25.
- Article: Brain Effects of Cognitive Remediation Therapy in Schizophrenia: A Structural and Functional Neuroimaging Study published in the *Biological Psychiatry* journal. The authors are members of CIBERSAM group G04.
- Article: Should obesity be considered a limiting factor in treatment with clozapine? Published in the *Psiquiatría y Salud Mental* journal. The authors are members of CIBERSAM group G04.
- Article: Early Responses to Deep Brain Stimulation in Depression are Modulated by Anti-inflammatory Drugs, published in the *Molecular Psychiatry* journal. The authors are members of CIBERSAM groups G18, G19, G12 and G21.
- Article: Peripheral endocannabinoid system dysregulation in first-episode psychosis, published in the *Neuropsychopharmacology* journal. The authors are members of CIBERSAM groups G01, G04, G05, G10, G12, G13 and G19.
- Article: A double-blind placebo-controlled study of efficacy of reboxetine and citalopram as adjuvant of atypical antipsychotics in negative symptoms of schizophrenia, published in the *Journal of Clinical Psychiatry*. The authors are members of CIBERSAM group G11.
- Book: *Abordaje Integral de las Fases Iniciales de la psicosis. Una Visión Crítica (Comprehensive Approach to Initial Stages of Psychosis. A Critical Vision)*, published by Editorial Panamericana. The authors are members of CIBERSAM group G16.

Patent communication:

- Dissemination in the mass media (*La Vanguardia*, *ABC*, *Diario Médico*...) of the patent entitled: "Method for predicting the start of extrapyramidal symptoms induced by antipsychotic-based treatment" involving the participation of CIBERSAM, the *Universidad Clínic*, the *Instituto de Investigaciones Biomédicas August Pi i Sunyer (IDIBAPS)* and the *Universidad de Barcelona* with the *Fundación Bosch i Gimpera* of *Universidad de Barcelona*.

Dissemination of European and national calls for proposal through the CIBERSAM web page:

- ROAMER project meetings (FP7/2007-2013/no. 282586)
- Calls for proposals for the 2020 Horizon Programme.

CIBERSAM Dissemination in social networks:

- Creation and dissemination of CIBERSAM's twitter account (@ciber_sam).



Events and Other Activities

Organization and dissemination of activities conducted in 2013

Workshops and courses organized by CIBERSAM

- The 14th Symposium on Bipolar Disorders (January 10) Barcelona. Organized by group G23
- The 12th Refresher Course in child-adolescent psychiatry (May 9). Organized by group G01
- Presentations and open-house in conjunction with Brain Month (May)
- Open-house in 5 CIBERSAM consortium research centres in Hospital Clínic de Barcelona (G04); Universidad del País Vasco (G16), Hospital Universitario Ramón y Cajal (G22), Hospital General Universitario Gregorio Marañón (G01) and Hospital Universitario de Álava (G10).
- Practical Pharmacogenetics Course (from June 11 to 14). Barcelona. Organized by group G04
- The 7th edition of the National Monographic Conference on Dual Pathology (June 19-20). Valencia. Organized by group G24.
- 7th Intensive Course in Neurosciences: Research Update on Autism Spectrum Disorders (July 3). Barcelona. Organized by group G08.
- Continuous Training Programme in Evidence-based Psychotherapy, Module III: Introduction to Group Therapy from a Comprehensive Perspective. Cantabria. (from September 2013 to June 2014). Organized by group G26.
- The 8th Alicia Koplowitz Foundation Scientific Conference. (October 10 and 11). Madrid. Organized by group G01.
- The 2nd International Forum on Approaches in Schizophrenia Treatment (November 28-29). Madrid. With the participation of CIBERSAM Schizophrenia Programme groups.
- 3rd Conference on First Psychotic Episode Treatment Programmes (November 22) Gandía. Organized by group G24.
- 8th Intensive Introductory Course to Neuroscience Research: Gene-Environment Interaction in the causality of mental disorder. (November 22) Barcelona. Organized by group G08. Collaborating groups G04, G11, G24
- Training course in animal well-being for scientific experiments. Category B (November 18-19) Cádiz. Organized by group G18.
- Training course in test animal well-being. Procedure Management and Design. Category C (November 18-19) Cádiz. Organized by group G18.
- Participation in Science Week held in Madrid and Barcelona.
- Social Forum in the framework of the 17th National Psychiatry Congress (September 26-28), Seville. Organized by the Institutional Relations Programme.
- Dissemination of the Master's in Research provided by CIBERSAM



Patents and Transfer Results

CIBERSAM filed six patent applications in 2013:

PI GROUP INVESTIGATOR	TITLE
(02)- Artigas Pérez, Francesc	Compositions and Methods for the Treatment of Parkinson Disease by the Selective Delivery of Oligonucleotide Molecules to Specific Neuron Types
(07)- Desco Menendez, Manuel	Compact Superconducting Classical Cyclotron
(04)- Bernardo Arroyo, Miguel	Method for predicting extrapyramidal symptoms (EPS) induced by antipsychotic-based treatment
(02)- Artigas Pérez, Francesc	Compositions and methods for the treatment of Parkinson disease by the selective delivery of oligonucleotide molecules to specific neuron types
(24)- Tabares, Rafael	Method for detecting neurological diseases
(02)- Artigas Pérez, Francesc	Compositions and Methods for Selective Delivery of Oligonucleotide Molecules to Cell Types

CIBERSAM also has 45 transference agreements in force in 2013:

PI GROUP INVESTIGATOR	AGREEMENT
(20)- Pazos Carro, Angel Armando	Cell assay development and characterization of animal models of psychiatric disease (Zenit Noscira)
(07)- Desco Menendez, Manuel	CENIT subprogramme for project entitled "Advanced Molecular Imaging Technologies (AMIT)"
(07)- Desco Menendez, Manuel	CENIT subprogramme for project entitled "Advanced Molecular Imaging Technologies (AMIT)"
(07)- Desco Menendez, Manuel	CENIT subprogramme for project entitled "Advanced Molecular Imaging Technologies (AMIT)"
(07)- Desco Menendez, Manuel	CENIT subprogramme for project entitled "Advanced Molecular Imaging Technologies (AMIT)"
(07)- Desco Menendez, Manuel	CENIT subprogramme for project entitled "Advanced Molecular Imaging Technologies (AMIT)"
(07)- Desco Menendez, Manuel	CENIT subprogramme for project entitled "Advanced Molecular Imaging Technologies (AMIT)"
(02)- Artigas Pérez, Francesc	IDIBAPS (PI: Pau Celada) at the request of BRAINco: "Characterizing cortical oscillatory activity in transgenic PKEHUM0801 mice and involvement with the antipsychotic drug clozapine.

(02)- Artigas Pérez, Francesc	IDIBAPS (PI: Analia Bortolozzi) and CSIC (PI: Francesc Artigas) and at the request of and in collaboration with nLife Therapeutics: "Modulation of genes associated with the serotonergic system with antisense RNA molecules (siRNAs) and the effect thereof on models of depression"
(18)- Micó Segura, Juan Antonio	Effect of tapentadol on Locus Coeruleus neurons "in vivo" in the streptozotocin model of polyneuropathic pain in rats. OT2011/161
(02)- Artigas Pérez, Francesc	This Master Collaboration Agreement ("Agreement") shall serve as a framework, setting out the general terms and conditions under which the CIBERSAM shall perform and supervise certain research projects in collaboration with Lundbeck ("Research Projects"). The Research Projects shall be proposed by and prepared in cooperation with Lundbeck and agreed to by the CIBERSAM from time to time. The Research Projects shall be based on the CIBERSAM's existing expertise, facilities and know-how pertinent to the subject of each Research Project. The CIBERSAM is willing to conduct the Research Projects in co-operation with Lundbeck.
(11)- Haro Abad, Josep Maria	Part 1- The objective of this study is to look the pattern of antidepressant intake before and at/after baseline, how many patients took any antidepressant, how many types of antidepressants and which ones, and compare the outcomes at 3 months between the groups of antidepressants. Part 2- To study the effect of having co-morbidities in the relation of Somatic Symptoms and the outcomes (depression improvement, quality of life): Is pain explained by the presence of diagnosed co-morbidities? Is the impact of pain on outcomes dependant on presenting co-morbidities? Part 3- Study the relation of persistent pain with depression severity and quality of life. Specific objectives: What happens to patients who have persistent pain? May they improve on depression? What happens to patients that improve on depression but not on pain? Do they have worse quality of life?
(26)- Crespo Facorro, Benedicto	CONTINUOUS TRAINING PROGRAMME IN EVIDENCE-BASED PSYCHOTHERAPY. Module II: Grief and trauma from a Comprehensive Perspective (October 2012-June 2013)
(02)- Artigas Pérez, Francesc	Study of gene silencing in aminergic neurons with conjugated oligonucleotides belonging to NLIFE and MERCK SHARP DOHME (MSD)
(26)- Crespo Facorro, Benedicto	CONTINUOUS TRAINING PROGRAMME IN EVIDENCE-BASED PSYCHOTHERAPY. Module III: Introduction to Group Therapy from a Comprehensive Perspective (September 2013-June 2014)
(25)- Vieta Pascual, Eduard	<ol style="list-style-type: none"> 1. To determine the progression of functional adaptation and cognitive dysfunctions in a sample of euthymic bipolar patients (before and after intervention) compared to the control group. 2. To investigate the relationship between neurotrophic changes and cognitive deterioration and the association thereof with functional deterioration. 3. To study if this functional rehabilitation method has a beneficial effect on the clinical course of the disease (relapses, hospitalizations...) and long-term functioning (2 years of follow-up). 4. To determine the various clinical markers, biological markers (BDNF), functional assessment (FAST) and the neurocognitive factors capable of moderating or predicting the response to functional rehabilitation as a complementary treatment in euthymic bipolar patients. 5. To characterize early and advanced stages according to clinical, biological and functional variables.
(25)- Vieta Pascual, Eduard	Translation of DSM-5 to Spanish and review
(03)- Ayuso Mateos, José Luis	A Roadmap for Mental Health Research in Europe (ROAMER): Creating a roadmap for the priority lines of mental health research in Europe
(03)- Ayuso Mateos, José Luis	A Roadmap for Research on Mental Health and Well-being in Europe: ROAMER: Determining the priority lines of research in mental health and well-being in Europe, emphasizing Spain.
(11)- Haro Abad, Josep Maria	A Roadmap for Mental Health Research in Europe (ROAMER): Creating a roadmap for the priority lines of mental health research in Europe
(11)- Haro Abad, Josep Maria	A roadmap for Research on Mental Health and Well-being in Europe: ROAMER. Determining the priority lines of mental health and well-being research in Europe, emphasizing Spain.
(11)- Haro Abad, Josep Maria	Impact of Anxiety symptoms and PPS length of stay
(11)- Haro Abad, Josep Maria	Medication costs and presence of Painful Physical Symptoms and Anxiety Symptoms

(11)- Haro Abad, Josep Maria	Anxiety and Impatient
(11)- Haro Abad, Josep Maria	Compliance with antidepressant medication in patients treated for a depressive episode in Asia, results from B015: factors associated to compliance, influence of compliance on outcomes and relationship with painful physical symptoms and anxiety symptoms
(11)- Haro Abad, Josep Maria	Relationship of the presence of painful physical symptoms and medication discontinuation patients treated for a depressive episode in Asia, results from B015
(03)- Ayuso Mateos, José Luis	Translation of DSM-5 to Spanish
(04)- Bernardo Arroyo, Miguel	Development of an interactive system for recording, collecting and analyzing data for patients with refractory schizophrenia
(18)- Micó Segura, Juan Antonio	Contracting scientific works
(18)- Micó Segura, Juan Antonio	Contracting scientific works
(01)- Arango López, Celso	Translation of DSM-5 Manual to Spanish. Hiring service provision and technical assistance
(01)- Arango López, Celso	Collaboration Agreement to sponsor the 12th International Refresher Course on Mental Health in Children and Adolescents. Support for a child psychiatry course.
(01)- Arango López, Celso	2nd International Forum on approaches to schizophrenia treatment. Donation for sponsoring scientific forum.
(01)- Arango López, Celso	Joint Collaboration Agreement between FIBHGM and CIBERSAM to conduct the research project entitled "Study of gene environment interactions in schizophrenia: vulnerability and severity". Project agreement
(01)- Arango López, Celso	A Roadmap for Mental Health Research in Europe (ROAMER): Creating a roadmap for the priority lines of mental health research in Europe
(01)- Arango López, Celso	Development of the Suicidality project: Treatment Occurring in Paediatrics (STOP), funded by the European Union, in cooperation with CIBERSAM.
(01)- Arango López, Celso	Development of the project entitled Translating neuroimaging findings from research into clinical practice (PSYSCAN), funded by the European Union, in cooperation with CIBERSAM.
(01)- Arango López, Celso	A roadmap for research in mental health and well-being in Europe: ROAMER. Determining the priority lines of mental health and well-being research in Europe, emphasizing Spain.
(01)- Arango López, Celso	Convenio de colaboración para la organización del Máster de Especialización en Salud Mental
(25)- Vieta Pascual, Eduard	A Roadmap for Mental Health REsearch in Europe (ROAMER): Realización de una hoja de ruta para las líneas prioritarias de investigación en salud mental en Europa
(04)- Bernardo Arroyo, Miguel	Translation of Diagnostic And Static Manual Of Mental Disorders, Fifth Edition, to Spanish and review
(04)- Bernardo Arroyo, Miguel	Method for predicting extrapyramidal symptoms (EPS) induced by antipsychotic-based treatment
(24)- Tabares, Rafael	Collaboration Agreement for joint work in data analysis study and development
(02)- Artigas Pérez, Francesc	Studies on PD-1233 molecule efficacy in Cynomolgus (Macaca fascicularis)
(16)- Meana Martínez, José Javier	Behavioral evaluation in animal models of compounds with pharmacological activity on the central nervous system.



6

Research
Groups



PROGRAMME:

**Mental Disorders
in Children and Adolescents**

Group 1

Group Members

STAFF MEMBERS

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Kehrmann Irisarri, Lara
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Pouso Ríos, María
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Tapia Casellas, Cecilia

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García Amador, Margarita
Graell Berna, Montserrat
Janssenjeucken, Joost
Llorente Sarabia, Cloe
Martínez Díaz Caneja, Covadonga
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Moreno Iñiguez, Luis Miguel
Moreno Pardillo, M Dolores
Moreno Ruíz, Carmen
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Pina Camacho, Laura
Rapado Castro, Marta
Romo Villa, José
Ruíz Sancho, Ana María
Sánchez Gutiérrez, Teresa

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Lead Researcher

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Main lines of research

- Cognition in psychiatric disorders
- Neurodevelopmental neuropsychopharmacology. First psychotic episodes
- Autism Spectrum Disorders
- High risk population studies
- Schizophrenia
- Bipolar Disorder
- Neuroimaging in psychiatric disorders

Most relevant scientific articles

- ARANGO C. Child neuropsychopharmacology: good news... the glass is half full. *World Psychiatry*. 2013 Jun;12(2):128-9.
- TORRENT C, BONNIN C DEL M, MARTÍNEZ-ARÁN A, VALLE J, AMANN BL, GONZÁLEZ-PINTO A ET AL.. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013 Aug 1;170(8):852-9.
- MORENO C, NUEVO R, CHATTERJI S, VERDES E, ARANGO C, AYUSO-MATEOS JL. Psychotic symptoms are associated with physical health problems independently of a mental disorder diagnosis: results from the WHO World Health Survey. *World Psychiatry*. 2013 Oct;12(3):251-7.
- PARELLADA M. Social cognition in schizophrenia: from evidence to treatment. *Am J Psychiatry*. 2013 Oct 1;170(10):1216.
- BIOQUE M, GARCÍA-BUENO B, MACDOWELL KS, MESEGUER A, SAIZ PA, PARELLADA M ET AL.. Peripheral Endocannabinoid System Dysregulation in First-Episode Psychosis. *Neuropsychopharmacology*. 2013 Jul 4;.

Highlights

The psychiatric research team of the Gregorio Marañón Hospital (group 01) provides expertise in the field of child and adolescent psychiatry and its recognized capability to develop multiple research projects and is accredited human and technical equipment. In 2013, members of this research group have published 33 articles in national and international peer-review journals and have participated in 38 research projects (including national and international competitive funded projects and clinical trials), 8 of which have been funded by the Seventh Framework Programme of the European Union. They have also participated in the development of 4 clinical practice guidelines, have supervised 2 completed doctoral theses and have participated in more than 40 presentations and papers presented at national and international conferences.



PROGRAMME:
Therapeutic Innovation

Group 2

Group Members

STAFF MEMBERS

Jaramillo Muñumer, María
Paz Silva, Verónica
Santana Ramos, Noemí

ASSOCIATED MEMBERS

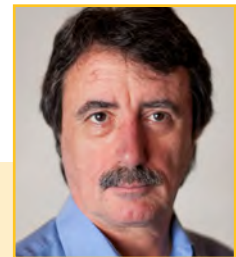
Adell Calduch, Albert
Bortolozzi Biassoni, Analia
Campa Montobbio, Leticia
Castañé Forn, Anna
Celada Pedrosa, Paz
Ferres Coy, Albert
Galofre Centelles, Mireia
Jiménez Sánchez, Laura
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Main lines of research

- Neurobiological basis and treatment for severe psychiatric disorders: study of neurotransmitters, receptors and brain circuits involved.
- Mechanism of action of antidepressant and antipsychotic drugs: brain circuits involved.
- Study on the brain circuits involved in the psychotomimetic action of non-competitive NMDA receptor antagonists.
- Neurobiological basis of new novel antidepressant strategies (deep brain stimulation, interference RNA, ketamine).
- Transgenic mouse models of schizophrenia.
- Neurochemistry and neuropharmacology of brain neurotransmitters.

Most relevant scientific articles

- ARTIGAS F. Serotonin receptors involved in antidepressant effects. *Pharmacol Ther.* 2013 Jan;137(1):119-31.
- SANTANA N, MENGOD G, ARTIGAS F. Expression of $\alpha(1)$ -adrenergic receptors in rat prefrontal cortex: cellular co-localization with 5-HT(2A) receptors. *Int J Neuropsychopharmacol.* 2013 Jun;16(5):1139-51.
- CELADA P, LLADÓ-PELFORT L, SANTANA N, KARGIEMAN L, TROYANO-RODRIGUEZ E, RIGA MS ET AL.. Disruption of thalamocortical activity in schizophrenia models: relevance to antipsychotic drug action. *Int J Neuropsychopharmacol.* 2013 Nov;16(10):2145-63.
- CELADA P, BORTOLOZZI A, ARTIGAS F. Serotonin 5-HT1A receptors as targets for agents to treat psychiatric disorders: rationale and current status of research. *CNS Drugs.* 2013 Sep;27(9):703-16.
- FERRÉS-COY A, SANTANA N, CASTAÑÉ A, CORTÉS R, CARMONA MC, TOTH M ET AL.. Acute 5-HT(1A) autoreceptor knockdown increases antidepressant responses and serotonin release in stressful conditions. *Psychopharmacology (Berl).* 2013 Jan;225(1):61-74.

Highlights

The group has led a total of 12 grants during 2013, including 1 EU grant (IMI-NEWMEDS, Grant 115008), 5 Spanish competitive grants (SAF2012-35183, IPT-2012-1208-300000, PI10/01103, PI10/00290, PI12/00156), 1 international grant (NARSAD Grant 20003) and 5 contracts with companies . Four new grants have been awarded in 2013: 2 ISCIII (PI13/00038, PI13/01390), 1 international grant (MJFF, Grant 9238) and 1 private contract. Two new patents have been requested, one in Europe (PCT/EP2013/07241) and U.S. (14,065,024), and a second one only in Europe (EP12382413.8).

From the studies carried out during 2013, we would highlight a) the development of novel antidepressant strategies using RNAi, b) the study of the antidepressant properties of deep brain stimulation, c) preclinical models of schizophrenia, and d) identification of thalamocortical circuits as therapeutic targets in schizophrenia. The group's activity has resulted in a total of 15 papers (8 original articles, 6 reviews, 1 editorial) of which 13 are in 1st quartile and 7 in 1st decile, with 6 national and 7 international collaborations.

Overall, these results keep a solid reputation of the group in the field of Neuropsychopharmacology , as shown by its high level of citations (h-index of PI = 53), the involvement in several scientific societies (eg the PI was Chairman of the Scientific Committee of the Spanish Society for Neuroscience in 2012-2013, and has recently been elected councillor of CINP). Among the awards received during 2013, the PI gave one of the plenary lectures at the 26th ECNP Congress and one of the group posters received the Poster Award. The PI was also invited to write a paper on new trends in antidepressant treatments for a special issue of *Eur Neuropsychopharmacology* to celebrate the ECNP 25th anniversary.



PROGRAMME:
**Depression;
Bipolar Disorder**

Group 3

Group Members

STAFF MEMBERS

Cabello Salmerón, María
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Miret García, Marta

ASSOCIATED MEMBERS

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Gutiérrez Recacha, Pedro
Leal Leturia, Itziar
López García, Pilar
Martorell Cafranga, Almudena
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Provencio Ortega, María
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Main lines of research

- Epidemiology and nosology of mental disorders.
- Assessment of the efficacy of different therapeutical interventions in patients with major depression and bipolar disorders.
- Road map for mental health and well-being research in Europe.
- Evaluation of health status, quality of life and well-being in the general population.
- Analysis and prevention of suicide behaviour.
- Use of the ICF model as theoretical framework for the assessment of functioning and disability in mental disorders.
- Strategies for improvement mental health service coverage in low and middle income countries.
- Analyses of factors associated with the onset of first psychotic episodes.

Most relevant scientific articles

- MORENO C, NUEVO R, CHATTERJI S, VERDES E, ARANGO C, AYUSO-MATEOS JL. Psychotic symptoms are associated with physical health problems independently of a mental disorder diagnosis: results from the WHO World Health Survey. *World Psychiatry*. 2013 Oct;12(3):251-7.
- AYUSO-MATEOS JL, BARROS PP, GUSMÃO R. Financial crisis, austerity, and health in Europe. *Lancet*. 2013 Aug 3;382(9890):391-2.
- HUERTA-RAMÍREZ R, BERTSCH J, CABELLO M, ROCA M, HARO JM, AYUSO-MATEOS JL. Diagnosis delay in first episodes of major depression: A study of primary care patients in Spain. *J Affect Disord*. 2013 Jul 1;.
- NUEVO R, VAN OS J, ARANGO C, CHATTERJI S, AYUSO-MATEOS JL. Evidence for the early clinical relevance of hallucinatory-delusional states in the general population. *Acta Psychiatr Scand*. 2013;127(6):482-93.
- AYUSO-MATEOS JL, MIRET M, CABALLERO FF, OLAYA B, HARO JM, KOWAL P ET AL.. Multi-country evaluation of affective experience: validation of an abbreviated version of the day reconstruction method in seven countries. *PLoS One*. 2013;8(4):e61534.

Highlights

In 2013, our group continued with our research projects and also started new ones:

Regarding previous research lines, our group has continued defining priority research areas for the study of well-being and mental health in Europe (ROAMER project). Furthermore, we have assessed the quality of life, well-being and mental health status of the Spanish general population, validating new tools of assessment and making also cross-country comparisons. On the other hand, the team continued recruiting patients for two different purposes: to study new intervention strategies in bipolar disorders (MEMAP study) and also to analyse factors related to the onset of first psychotic episodes (AGES-CM). Finally, our team has continued participating in the Field Studies Coordination Group International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders a continued with the activities linked to the nomination of the Department of Psychiatry at the UAM as WHO Collaborative Center for Mental Health Services Research and Training.

During 2013 our group has also developed new research lines. Firstly, we have given support for the evaluation of the existing mental health resources in low and middle income countries for the subsequent development of new intervention programs that will improve the treatment of mental disorders in these settings (EMERALD project). In addition, our team has received new national funds for conducting a first following-up assessment of an existing representative cohort of adult Spanish population. Furthermore, the team has started to participate in a new European network for the training of young researchers in epidemiology and mental health (MARATONE project) that is combining on-line training and face-to-face meetings. Finally, this year it has been also of our interest to analyze the impact of economic crisis on mental health and suicide behavior in the Spanish general population.



PROGRAMME:
Schizophrenia

Group 4

Group Members

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Main lines of research

- Physical health
- Neuroimaging, Genetics, Neurobiology and Molecular Psychiatry
- Neuropsychology, Psychoeducation and Psychometric evaluation
- Neuropsychopharmacology
- High Risk Population, early-onset and first and second episodes of psychosis
- Child and adolescent mental health

Most relevant scientific articles

- PENADÉS R, PUJOL N, CATALÁN R, MASSANA G, RAMETTI G, GARCÍA-RIZO C ET AL.. Brain effects of cognitive remediation therapy in schizophrenia: a structural and functional neuroimaging study. *Biol Psychiatry*. 2013 May 15;73(10):1015-23.
- BIOQUE M, GARCÍA-BUENO B, MACDOWELL KS, MESEGUER A, SAIZ PA, PARELLADA M ET AL.. Peripheral Endocannabinoid System Dysregulation in First-Episode Psychosis. *Neuropsychopharmacology*. 2013 Jul 4;.
- GARCÍA-RIZO C, FERNÁNDEZ-EGEA E, MILLER BJ, OLIVEIRA C, JUSTICIA A, GRIFFITH JK ET AL.. Abnormal glucose tolerance, white blood cell count, and telomere length in newly diagnosed, antidepressant-naïve patients with depression. *Brain Behav Immun*. 2013 Feb;28:49-53.
- BERNARDO M, BIOQUE M, PARELLADA M, SAIZ RUIZ J, CUESTA MJ, LLERENA A ET AL.. Assessing clinical and functional outcomes in a gene-environment interaction study in first episode of psychosis (PEPs). *Rev Psiquiatr Salud Ment*. 2013;6(1):4-16.
- GARCÍA-BUENO B, BIOQUE M, MAC-DOWELL KS, BARCONES MF, MARTÍNEZ-CENGOTTABENGOA M, PINA-CAMACHO L ET AL.. Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia. *Schizophr Bull*. 2013 Mar 13;.

Highlights

Schizophrenia Clinic Unit responds to both hospital care clinical approach, researcher and teacher as an outpatient, including treatment protocols, aimed at responding to problems posed by schizophrenia and integrates the various devices of the Hospital Clinic of Barcelona with activity against this disease.

The objectives of the Unit are: the extension of theoretical and practical knowledge related to schizophrenia; longitudinal follow-up of patients with chronic schizophrenia; longitudinal follow-up of patients with first psychotic episodes; pharmacological management of patients with first episode of comorbid patient and patient resistant; the development and validation of psychopathological scales; and integration into routine care, teaching or research Unit.

Our unit received in 2011 Best in Class Award for Best Unit Schizophrenia National Health Service.

INTERNATIONAL PROJECTS:

- Diabetes in neuropsychiatric disorders (USA)
- European Network of National schizophrenia Networks studying Gene-environment Interactions (EU-GEI)
- Optimization of Treatment and Management of Schizophrenia in Europe- OPTiMiSE
- PSYSCAN – Translating neuroimaging findings from research into clinical practice.

PRINCIPAL NATIONAL PROJECTS (ISCIII):

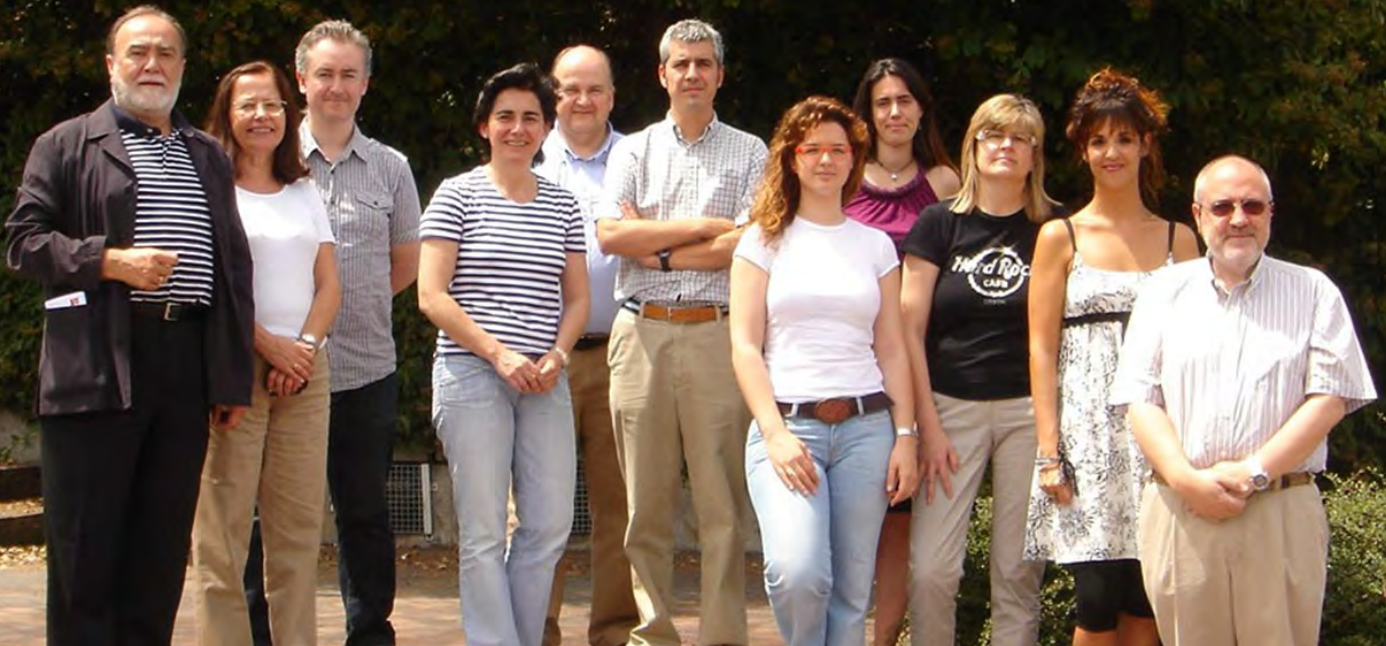
- Genotype-phenotype and environment. Application to a predictive model in first psychotic episodes.
- Determining clinical and neurobiological second episodes in schizophrenia. Longitudinal study of first psychotic episodes.
- Apoptosis and progressive structural changes in patients with a first episode of schizophrenia: Longitudinal and multimodal neuroimaging and molecular biology
- BDNF (Brain-derived neurotrophic factor) as a potential biomarker of treatment of neurocognitive rehabilitation in schizophrenia negative dominance.

PATENT:

Method for predicting the onset of extrapyramidal symptoms (EPS) induced by an antipsychotic-based treatment. Mas, S, Gassó P, Malagelada C, Bernardo M, Lafuente A

CLINICAL GUIDES:

- Pla director de salut mental i addiccions. Guia de bona pràctica clínica sobre la teràpia electroconvulsiva a Catalunya. Barcelona: Direcció General de Planificació i Recerca en Salut, Generalitat de Catalunya; 2013.
- Bernardo M., Safont G., Oliveira C., Valiente A. Recomanacions per al monitoratge i la promoció de la salut física dels pacients amb esquizofrènia i altres trastorns greus. Pla director de salut mental i addiccions. Departament de Salut. 2013



PROGRAMME:
**Schizophrenia;
Bipolar Disorder**

Group 5

Group Members

STAFF MEMBERS

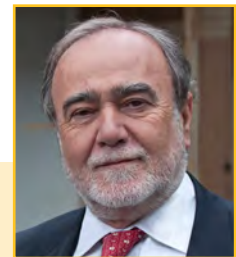
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Flórez Menéndez, Gerardo
García Álvarez, Leticia
García-Portilla González, Mari Paz
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Main lines of research

- **CROSS-CURRICULAR AREAS OF RESEARCH** (applicable to all mental disorders): Genetics: pharmacogenomics and pharmacogenetics; Clinical: cognitive impairment and psychophysiology (sleep and sexuality); Psychometrics: development / cross-cultural validation / psychometric properties of assessments tools for mental disorders; Treatment: efficacy and tolerability of new CNS drugs / new indications of existing CNS drugs / efficacy of new psychotherapeutic strategies; Impact of mental disorders and their treatment in patients' life: functioning (disability) / quality of life.
- **LONGITUDINAL AREAS OF RESEARCH** (specific mental disorders): Severe mental disorders (schizophrenia and bipolar disorder) and their initial manifestations (first psychotic episodes), unipolar depression, suicidal behaviour, obsessive-compulsive disorder (OCD), panic disorder, addictions.

Most relevant scientific articles

- TORRENT C, BONNIN CDEL M, MARTÍNEZ-ARÁN A, VALLE J, AMANN BL, GONZÁLEZ-PINTO A ET AL.. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013 Aug 1;170(8):852-9.
- GARCÍA-PORTILLA MP, GOMAR JJ, BOBES-BASCARAN MT, MENENDEZ-MIRANDA I, SAIZ PA, MUÑIZ J ET AL.. Validation of a European Spanish-version of the University of California performance Skills Assessment (Sp-UPSA) in patients with schizophrenia and bipolar disorder. *Schizophr Res*. 2013 Sep 18;.
- BOMBIN I, MAYORAL M, CASTRO-FORNIELES J, GONZÁLEZ-PINTO A, DE LA SERNA E, RAPADO-CASTRO M ET AL.. Neuropsychological evidence for abnormal neurodevelopment associated with early-onset psychoses. *Psychol Med*. 2013;43(4):757-68.
- BALÁZS J, MIKLÓSI M, KERESZTÉNY A, HOVEN CW, CARLI V, WASSERMAN C ET AL.. Adolescent subthreshold-depression and anxiety: psychopathology, functional impairment and increased suicide risk. *J Child Psychol Psychiatry*. 2013 Jun;54(6):670-7.
- GARCÍA-BUENO B, BIOQUE M, MAC-DOWELL KS, BARCONES MF, MARTÍNEZ-CENGOTTIBENGOA M, PINA-CAMACHO L ET AL.. Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia. *Schizophr Bull*. 2013 Mar 13;.

Highlights

GRANTS APPROVED:

- Title: Biomarcadores diferenciales de la dimensión negativa de la esquizofrenia. Entidad financiadora: Instituto de Salud Carlos III (FIS). Reference: PI12/00018. Duration: 2013-16.

COLLABORATION IN RESEARCH PROJECTS:

- Title: Identificación de variables predictoras clínicas, neurocognitivas y genéticas en la emergencia y recurrencia de la conducta suicida en el trastorno bipolar. Entidad financiadora: Instituto de Salud Carlos III (FIS). Reference: PI12/00018. Duration: 2013-15.

RESEARCH PROJECTS IN PROGRESS:

- Title: Construcción de un modelo de estadiaje clínico en el trastorno bipolar. Entidad financiadora: Instituto de Salud Carlos III (FIS). Reference: PI11/02493. Duration: 2012-2014.
- Title: Determinantes clínicos y neurobiológicos de segundos episodios de esquizofrenia. Estudio longitudinal de primeros episodios psicóticos. Entidad financiadora: Instituto de Salud Carlos III (FIS). Reference: PI11/02704. Duration: 2012-14.
- Title: Estudio comparativo de la evolución del rendimiento cognitivo en relación a la nicotina en pacientes con esquizofrenia. Entidad financiadora: Instituto de Salud Carlos III (FIS). Reference: PI11/01891. Duration: 2012-14.
- Title: Comorbilidad física en el trastorno mental grave: diseño, intervención y evaluación de un programa para la mejora del estado de salud general del paciente. Entidad financiadora: Instituto de Salud Carlos III (FIS). Reference: PI12/00882. Duration: 2013-15.
- Title: Working in Europe to Stop Truancy Among Youth – WE-STAY. Reference: UE-10-WE-STAY-241542. Duration: 01/05/2010-30/04/2013.
- Title: Optimization of Treatment and Management of Schizophrenia in Europe (OPTIMISE). Entidad financiadora: European Commission- 7 Framework Programme (FP7). Reference: 242114. Duration: 2009-2014.
- Title: The EU Joint National Schizophrenia Networks for the Identification of Gene-Environment Interactions – EU-GEI. Entidad financiadora: European Commission-7 Framework Programme (FP7). Reference: 241909. Duración: 2010-15.



PROGRAMME:
**Schizophrenia;
Depression**

Group 6

Group Members

STAFF MEMBERS

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Main lines of research

- Redefining Psychotic Phenotypes (J. Cervilla)
- Treatment of Refractory Psychoses (J. Cervilla)
- Gene by environment interaction in Psychiatry (B. Gutiérrez)
- Psychopharmacogenetics (B. Gutiérrez)
- Social Psychiatry (F. Torres)
- Psycogeriatrics (J. Cervilla)
- Medical Issues in Mental Disorder (M. Rivera)

Most relevant scientific articles

- DE PORTUGAL E, GONZÁLEZ N, DEL AMO V, HARO JM, DÍAZ-CANEJA CM, DE DIOS LUNA DEL CASTILLO J, CERVILLA JA.. Empirical redefinition of delusional disorder and its phenomenology: The DELIREMP Study. *Comprehensive psychiatry*. 2013;54(3):243-55.
- VERDEJO-GARCÍA A, ALBEIN-URIOS N, MOLINA E, CHING-LÓPEZ A, MARTÍNEZ-GONZÁLEZ JM, GUTIÉRREZ B. A MAOA gene*cocaine severity interaction on impulsivity and neuropsychological measures of orbitofrontal dysfunction: Preliminary results. *Drug Alcohol Depend*. 2013 Nov 1;133(1):287-90.
- IBANEZ-CASAS I, DE PORTUGAL E, GONZÁLEZ N, MCKENNEY KA, HARO JM, USALL J ET AL.. Deficits in executive and memory processes in delusional disorder: a case-control study. *PLoS One*. 2013;8(7):e67341.
- KING M, BOTTOMLEY C, BELLÓN-SAAMEÑO J, TORRES-GONZÁLEZ F, SVAB I, ROTAR D ET AL.. Predicting onset of major depression in general practice attendees in Europe: extending the application of the predictD risk algorithm from 12 to 24 months. *Psychol Med*. 2013 Sep;43(9):1929-39.
- SAMAN Z, ANAND S, ZHANG X, DESAI D, RIVERA M, PARE G ET AL.. The protective effect of the obesity-associated rs9939609 A variant in fat mass- and obesity-associated gene on depression. *Mol Psychiatry*. 2013 Mar 5;.

Highlights

The group has lead the PISMA-ep study on prevalence and risk factors co mental disorder in the Andalusian community (n=5309) having collected data on psychiatric diagnoses, psychosis screening, and psychological, socio-environmental and genetic risk factors. The study has won two additional grants for follow up of potentially psychotic subjects (Pheno-Psych Study) and Medical Comorbidity in Psychiatric Disorders (VII FP Marie Curie Actions). Additionally the group leads the intra-CIBERSAM DEPREGENE study and the INTER-CIBER PREDICT-Gene Projects on Gene by Environment Interactions in Depression. Finally, the group has continued to lead the Maristan Networ for Social Mental Health Research in collaboration with Latin American Universities and has active and strong links with both King 's College and University College in London.

PROGRAMME:

**Therapeutic Innovation;
Mental Disorders
in Children and Adolescents**

Group 7

Group Members

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Mateos Pérez, José María

ASSOCIATED MEMBERS

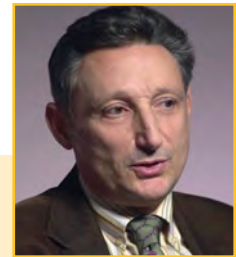
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Cusso Mula, Lorena
Dominguez Montero, Pedro Luis
García Barrero, Pedro
Guzmán de Villoria Lebiezjeswki, Juan
La Calle Auriolos, María
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Martino Casado, María Elena
Navas Sánchez, Francisco Javier
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Main lines of research

The research of the group is devoted to investigate medical imaging techniques, developing new image-related technology, innovative processing methodology and their translation into practice. The multidisciplinary character of the group enables fast clinical validation of the results thereby facilitating the transfer of advanced technological solutions to the industry.

The activities of the laboratory are organized in (a) Clinical Research Support (Neuroimaging, Image-guided Surgery; Cardiac imaging), (b) Development of new technology and (c) Preclinical Research.

The available equipment for small animal multimodal molecular imaging (CY, PET, SPECT, CT-PET, MRI, optical fluorescence tomography) is unique at the national scale, and it is accesible for external users.

Most relevant scientific articles

- ALEMÁN-GÓMEZ Y, JANSSEN J, SCHNACK H, BALABAN E, PINA-CAMACHO L, ALFARO-ALMAGRO F ET AL.. The human cerebral cortex flattens during adolescence. *J Neurosci*. 2013 Sep 18;33(38):15004-10.
- CANALES-RODRÍGUEZ EJ, RADUA J, POMAROL-CLOTET E, SARRÓ S, ALEMÁN-GÓMEZ Y, ITURRIA-MEDINA Y ET AL.. Statistical analysis of brain tissue images in the wavelet domain: wavelet-based morphometry. *Neuroimage*. 2013 May 15;72:214-26.
- RONALD JA, CUSSO L, CHUANG HY, YAN X, DRAGULESCU-ANDRASI A, GAMBHIR SS. Development and validation of non-integrative, self-limited, and replicating minicircles for safe reporter gene imaging of cell-based therapies. *PLoS One*. 2013 Aug 28;8(8):e73138.
- MATEOS-PÉREZ JM, GARCÍA-VILLALBA C, PASCAU J, DESCO M, VAQUERO JJ. jClustering, an open framework for the development of 4D clustering algorithms. *PLoS One*. 2013 Aug 22;8(8):e70797.
- CHAMORRO-SERVENT J, ABASCAL JF, AGUIRRE J, ARRIDGE S, CORREIA T, RIPOLL J ET AL.. Use of Split Bregman denoising for iterative reconstruction in fluorescence diffuse optical tomography. *J Biomed Opt*. 2013 Jul;18(7):076016.

Highlights

More than 400 scientific contributions in the last five years, many of them in relevant international journals, totalling more than 300 in Impact Factor. The Laboratory has produced 18 PhD Theses and numerous Master Theses, some of them international. More than 45 grant holders have completed a stay in the Laboratory, which has also organized more than 50 postgraduate courses, including two editions of a Master's in Biomedical Engineering. The group is participating in Biomedical Engineering Degree in the Universidad Carlos III. Presently Manuel Desco also chairs the Spanish Excellence Network on Technological Innovation in Hospitals (ITEMAS).

Several developments from his Laboratory have been transferred to the industry, becoming commercial products with worldwide distribution. Since 1998, when the first technology transference contract was signed with SUINSA (a teleradiology system: TELRA), the Laboratory has been active in developing and marketing different hi-tech systems, including a high resolution CT scanner and several PET and combined CT-PET scanners, for use in experimental biomedical research. One of these PET systems constitutes a reference in the industry and is currently being marketed by General Electric. The Laboratory has also transferred echocardiographic quantification software to SIEMENS-ACUSON. In 2004 the Unit received the "UNICEM award for technological innovation" from the Madrid Chamber of Commerce. Presently the group maintains numerous collaborations with national and international institutions (UNED, CSIC, CIEMAT, NIH, Brookhaven National Laboratory, Washington University, McGill University, Lawrence Berkeley Laboratory, etc.).



PROGRAMME:
**Schizophrenia;
Mental Disorders
in Children and Adolescents**

Group 8

Group Members

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Papiol Miró, Sergi
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E.mail: lfananas@ub.edu

Main lines of research

- Genetic studies based on clinical and brain phenotypes (fMRI_MRI) in schizophrenia, autism spectrum and affective disorders.
- Study of genetic and early environmental factors (GxE mechanisms), psychopathological status in adulthood and associated brain correlates (MRI): studies based on twins, families and individuals from the general population.
- Pharmacogenetics of antidepressants, antipsychotics and mood stabilizers.
- Population analysis of schizotypy and attenuated psychotic symptoms from the etiopathogenic psychosis continuum model.
- Personality, addiction and identification of risk markers.

Most relevant scientific articles

- ALEMANY S, MAS A, GOLDBERG X, FALCÓN C, FATJÓ-VILAS M, ARIAS B ET AL.. Regional gray matter reductions are associated with genetic liability for anxiety and depression: an MRI twin study. *J Affect Disord.* 2013 Jul;149(1-3):175-81.
- MITJANS M, SERRETTI A, FABBRI C, GASTÓ C, CATALÁN R, FAÑANÁS L ET AL.. Screening genetic variability at the CNR1 gene in both major depression etiology and clinical response to citalopram treatment. *Psychopharmacology (Berl).* 2013 Jun;227(3):509-19.
- ALEMANY S, ARIAS B, FATJÓ-VILAS M, VILLA H, MOYA J, IBÁÑEZ MI ET AL.. Psychosis-inducing effects of cannabis are related to both childhood abuse and COMT genotypes. *Acta Psychiatr Scand.* 2013 Feb 28;.
- CÓRDOVA-PALOMERA A, GOLDBERG X, ALEMANY S, NENADIC I, GASTÓ C, FAÑANÁS L. Letter to the Editor: Low birth weight and adult depression: eliciting their association. *Psychol Med.* 2013 Nov 11;:1-3.
- ALEMANY S, RIJSDIJK FV, HAWORTH CM, FAÑANÁS L, PLOMIN R. Genetic origin of the relationship between parental negativity and behavior problems from early childhood to adolescence: a longitudinal genetically sensitive study. *Dev Psychopathol.* 2013 May;25(2):487-500.

Highlights

- Reduced gray matter described in different brain regions in relation to depression and anxiety disorders is associated to genetic factors of vulnerability to such disorders; this conclusion was obtained in the context of a neuroimaging study based on monozygotic twins. This allows to distinguish between genetic and environmental effects on a complex phenotypes of interest in Psychiatry.
- The cannabinoid system and his associated genetic variation explain part of the vulnerability and response to drug treatment with Citalopram in depression.
- The inductive capacity of psychotic symptomatology associated with the use of cannabis is not only modulated by genetic variants in the COMT gene but by early experiences of maltreatment, according to a complex interaction model GxExE .
- Subtle differences in birth weight may explain part of the risk observed in adulthood to suffer anxiety-depressive spectrum disorders; new studies are necessary.
- Behavioral problems in childhood and adolescence are not independent of some genetic factors related to parental rearing styles.



PROGRAMME:
Bipolar Disorder

Group 10

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Main lines of research

- Epidemiology. Bipolar Disorder.
- Epidemiology. First Episodes of Psychosis.
- Aetiopathogenesis. Genes and Environment.
- Psychopathology.
- Treatment.

Most relevant scientific articles

- PACCHIAROTTI I, BOND DJ, BALDESSARINI RJ, NOLEN WA, GRUNZE H, LICHT RW ET AL.. The International Society for Bipolar Disorders (ISBD) Task Force Report on Antidepressant Use in Bipolar Disorders. *Am J Psychiatry*. 2013 Sep 13;.
- TORRENT C, BONNIN CDEL M, MARTÍNEZ-ARÁN A, VALLE J, AMANN BL, GONZÁLEZ-PINTO A ET AL.. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013 Aug 1;170(8):852-9.
- BIOQUE M, GARCÍA-BUENO B, MACDOWELL KS, MESEGUER A, SAIZ PA, PARELLADA M ET AL.. Peripheral Endocannabinoid System Dysregulation in First-Episode Psychosis. *Neuropsychopharmacology*. 2013 Jul 4;.
- GARCÍA-BUENO B, BIOQUE M, MAC-DOWELL KS, BARCONES MF, MARTÍNEZ-CENGOTTIBENGOA M, PINA-CAMACHO L ET AL.. Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia. *Schizophr Bull*. 2013 Mar 13;.
- BOMBIN I, MAYORAL M, CASTRO-FORNIELES J, GONZÁLEZ-PINTO A, DE LA SERNA E, RAPADO-CASTRO M ET AL.. Neuropsychological evidence for abnormal neurodevelopment associated with early-onset psychoses. *Psychol Med*. 2013;43(4):757-68.

Highlights

The G10 group led by Ana González- Pinto, is known for its research in the study of Bipolar Disorder , First Psychotic Episodes , Schizophrenia and Depression, participating both in basic research (neurotrophins, inflammation, oxidative stress), and clinical and psychopharmacological: development of new treatments, new methods of treatment application (online, e- learning), intervention strategies for prevention (postpartum depression, in patients at high risk of developing psychosis). One of the areas of greatest impact of the group focuses on the detection and treatment of psychiatric patients with cannabis and other substances consumption. The G -10 has developed a specific treatment for psychotic patients with cannabis use, to achieve its abandonment.

The G10 research group has numerous projects awarded continuously, both at regional national level (FIS, MINECO, MSPSI), (Basque Government, Kronik-gune) as at European level (7th Framework Programme). In the past two years there have been two intellectual properties (VI -51 -13 00/2012/1686) and an international patent (P200602135, US7651836).

It has also received numerous awards in national and international conferences . Finally, we are making several doctoral theses incorporating to promote new talent for research (Grant Sara Borrell, Rio Ortega, Basque Government predoctoral grant).



PROGRAMME:
Schizophrenia Project

Group 11

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Main lines of research

- Bases clínicas, cognitivas y psicosociales de los trastornos mentales severos.
- Epidemiología.
- Intervenciones en salud mental.
- Procesos básicos de percepción, atención y acción.
- Psiquiatría Molecular.
- Trastornos mentales en la infancia y la adolescencia.

Most relevant scientific articles

- FIORILLO A, LUCIANO M, DEL VECCHIO V, SAMPOGNA G, OBRADORS-TARRAGÓ C, MAJ M. Priorities for mental health research in Europe: A survey among national stakeholders' associations within the ROAMER project. *World Psychiatry*. 2013 Jun;12(2):165-70.
- FARRENY A, AGUADO J, OCHOA S, HARO JM, USALL J. The role of negative symptoms in the context of cognitive remediation for schizophrenia. *Schizophr Res*. 2013 Oct;150(1):58-63.
- BRÉBION G, VILLALTA-GIL V, AUTONELL J, CERVILLA J, DOLZ M, FOIX A ET AL.. Cognitive correlates of verbal memory and verbal fluency in schizophrenia, and differential effects of various clinical symptoms between male and female patients. *Schizophr Res*. 2013 Jun;147(1):81-5.
- PINACHO R, VILLALMANZO N, ROCA M, INIESTA R, MONJE A, HARO JM ET AL.. Analysis of Sp transcription factors in the postmortem brain of chronic schizophrenia: a pilot study of relationship to negative symptoms. *J Psychiatr Res*. 2013 Jul;47(7):926-34.
- NAVARRA J, FERNÁNDEZ-PRIETO I, GARCÍA-MORERA J. Realigning thunder and lightning: temporal adaptation to spatiotemporally distant events. *PLoS One*. 2013;8(12):e84278.

Highlights

ROAMER Project - The ROAMER project is designed to develop a comprehensive and consensual roadmap to promote and integrate mental health and wellbeing research in Europe, and to produce scientific advances and innovations that reduce the burden and impact of mental disorders and increase mental health and well-being of European citizens. The ROAMER consortium is formed by a group of leading and renowned scientists within the field, well balanced in terms of geographical distribution and areas of expertise, and will count with the supervision and advice of an independent scientific committee and an extensive involvement of policy-makers, funding agencies and other stakeholders (users, caregivers, doctors, nurses, family, industry etc..) groups.

Call RecerCaixa - "Efficacy of Meta-Cognitive Training (MCT) for improving the social and occupational integration of people with a first-episode psychosis." Multicenter study involving 10 centers and 3 of them are from CIBER. This is a clinical trial to test a psychological therapy (MCT) in people with a first-episode psychosis. The aim is to recruit more than 100 people.



PROGRAMME:
**Psychosomatic, Anxiety,
and Impulse Control
Disorders**

Group 12

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Main lines of research

- Search for inflammation biomarkers in plasma and blood cells from neuropsychiatric disease patients in order to identify and develop new therapeutic strategies
- Study of protection mechanisms against oxidative and inflammatory cell damage after stress exposure. Identification of potential therapeutic targets and evaluation of neuroprotection strategies.
- Study of individual mechanisms of susceptibility to stress-induced cell damage.
- Study of mechanisms through which noradrenaline acts as an anti-inflammatory mediator in stress. Among them, the key role of the chemokine MCP-1.
- Study of stress-induced colonic bacteria translocation during brain response to stress.
- Elucidation of the mechanisms through which stress exposure increases susceptibility and cell damage in Alzheimer's disease, Parkinson's disease, brain hypoxia and demyelinating diseases models. Identification of potential therapeutic targets and evaluation of neuroprotective strategies.

Most relevant scientific articles

- Elucidation of the mechanisms through which stress exposure increases susceptibility and cell damage in the intestine. Identification of potential therapeutic targets and evaluation of cytoprotective strategies.
 - Evaluation of the therapeutic potential of the endocannabinoid system in neuropsychiatric and gastrointestinal pathologies caused by stress.
 - Potential new mechanisms: role of innate immunity receptors (TLRs) in stress-related processes in neuro-psychiatric pathologies models.
 - Study of the neuroprotective effects resultant from the administration of different types of antidepressant and antipsychotic drugs in animal models (in vivo and in vitro) of psychiatric diseases.
- GARCÍA-BUENO B, BIOQUE M, MAC-DOWELL KS, BARCONES MF, MARTÍNEZ-CENGOTTIBENGOA M, PINA-CAMACHO L ET AL.. Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia. *Schizophr Bull.* 2013 Mar 13;.
 - MACDOWELL KS, DÍAZ-MARSÁ M, GÜEMES I, RODRÍGUEZ A, LEZA JC, CARRASCO JL. Inflammatory activation and cholinergic anti-inflammatory system in eating disorders. *Brain Behav Immun.* 2013 Aug;32:33-9.
 - PÉREZ-CABALLERO L, PÉREZ-EGEA R, ROMERO-GRIMALDI C, PUIGDEMONT D, MOLET J, CASO JR ET AL.. Early responses to deep brain stimulation in depression are modulated by anti-inflammatory drugs. *Mol Psychiatry.* 2013 May 28;.
 - BIOQUE M, GARCÍA-BUENO B, MACDOWELL KS, MESEGUER A, SAIZ PA, PARELLADA M ET AL.. Peripheral Endocannabinoid System Dysregulation in First-Episode Psychosis. *Neuropsychopharmacology.* 2013 Jul 4;.
 - HINOJOSA AE, CASO JR, GARCÍA-BUENO B, LEZA JC, MADRIGAL JL. Dual effects of norepinephrine on astroglial production of chemokines and pro-inflammatory mediators. *J Neuroinflammation.* 2013 Jul 9;10(1):81.

Highlights

During the year 2013 our group has published 5 articles in scientific journals, obtaining a mean Impact Factor of 8.4. The 60% of those articles have been published in first decile and the 100% in first quartile journals.

Moreover, the group has obtained funds in competitive calls from public and private institutions and foundations. In particular, this group in the year 2013 has had 3 projects working from public institutions (FIS and MINECO) and it has been achieved a new grant from the Ayudas de Proyectos de Investigación en Salud (ISCIII) in its call of 2013. From a private standpoint, the group has been involved in 4 different projects funded by private institutions (Mutua Madrileña Foundation and Alicia Koplowitz Foundation).

A very important chapter in our group is the academic/scientific training of pre- and postgraduate students. In this vein, during the year 2013 a Doctoral Thesis has been completed (obtaining the highest mark) and other three are being supervised at this time. Besides, there are four postgraduate students realizing their Master's Theses and other undergraduate students being research trainees and aiming to obtain their Graduate's Theses.

Finally, it is important to mention that our group is part of different Research Consortia, such as the Instituto de Investigación Hospital 12 de Octubre and the Instituto Universitario de Investigación en Neuroquímica (UCM).



PROGRAMME:
Depression

Group 13

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Main lines of research

- PSYCHOSOMATIC AND LIAISON PSYCHIATRY

Our group has a long tradition in the study of psychiatric and somatic comorbidity, in the study of "complex patients" (because of this co-morbidity), and in particular of depression in medical illness, including the biological and psycho-social complications. It has designed and implemented a number of network studies, including the coordination in Spain of EU, cross-national projects such as the ECLW studies; it also coordinated the Spanish Network for Research in Psychosomatics and Liaison Psychiatry (REPEP, FIS-ISCIII). Recently (2014) has been granted with the first "Frits Huyse Award", given by the European Association of Psychosomatic Medicine, EAPM, for A relevant trajectory in the discipline.

- GERIATRIC PSYCHIATRY

A different research line with a long tradition in this group is related to the psychiatric study in the elderly of major neuro-degenerative disorders, mainly dementias (and Alzheimer's disease); of depression; and of somatic-psychiatric comorbidity, in general and in specific diseases such as the cardiovascular diseases, and the relation with mortality. The main project here

is the ZARADEMP Study, a longitudinal research in a large cohort of the general population (n= 5,000), now in the "wave", more than 12 follow-up years. Papers in this study, including the participation in the EURODEM and EURODEP Projects of the EU are referenced as classical in the discipline.

- NEW TRENDS OF RESEARCH IN PSYCHIATRY

As a result of the collaboration in the CIBERSAM network, our group has started new research lines to join the ones of other CIBERSAM groups, contributing with our previous experience. Primarily, we have initiated lines on the study of genotype -phenotype interactions in first psychotic episodes and pragmatic clinical trials using new therapeutic strategies in major depressive disorder resistant to treatment with SSRIs.

Most relevant scientific articles

- VENTURA T, DE-LA-CÁMARA C, LÓPEZ-ANTON R, SANTABÁRBARA J, MARCOS G, QUINTANILLA MA ET AL.. Usefulness of 2 questions about age and year of birth in the case-finding of dementia. *J Am Med Dir Assoc.* 2013 Aug;14(8):627.e7-12.
- GRACIA-GARCÍA P, DE-LA-CÁMARA C, SANTABÁRBARA J, LÓPEZ-ANTON R, QUINTANILLA MA, VENTURA T ET AL.. Depression and Incident Alzheimer Disease: The Impact of Disease Severity. *Am J Geriatr Psychiatry.* 2013 Jun 20;.
- SACHDEV PS, LIPNICKI DM, KOCHAN NA, CRAWFORD JD, ROCKWOOD K, XIAO S ET AL.. COSMIC (Cohort Studies of Memory in an International Consortium): An international consortium to identify risk and protective factors and biomarkers of cognitive ageing and dementia in diverse ethnic and sociocultural groups. *BMC Neurol.* 2013 Nov 6;13(1):165.
- LOBO E, STIEFEL F, SÖLLNER W, SANTABÁRBARA J, LOBO A, HUYSE F, MARCOS G, MICHAUD L, HOHENBERGER W, LUDWIG G. Care complexity, mood, and quality of life in liver pre-transplant patients. *Clinical transplantation.* 2013;27(3):417-25.
- GARCÍA-BUENO B, BIOQUE M, MAC-DOWELL KS, BARCONES MF, MARTÍNEZ-CENGOTITABENGOA M, PINA-CAMACHO L ET AL.. Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia. *Schizophr Bull.* 2013 Mar 13;.

Highlights

Our group has designed and validated "The 2-questions test", the most efficient test in the international literature for the screening of dementia. Has also designed and validated with the European EDCON consortium the first scale for "staging" dementia in relation with care needs. With the "Doce de Octubre" research group, has validated the Spanish version of the MacArthur Competence Assessment Tool for Treatment interview, to assess patients' competence to consent treatment. Furthermore, with experience and data in the ZARADEMP Project, has participated and published the first reports with the COSMIC (Cohort Studies of Memory in an International Consortium: An international consortium to identify risk and protective factors and biomarkers of cognitive ageing and dementia in diverse ethnic and sociocultural groups).

PROGRAMME:
**Schizophrenia;
 Bipolar Disorder**

Group 15

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Main lines of research

- Development of new methods for the analysis of brain MRI images in different modalities.
- Study of the Default Mode Network and its involvement in different mental health disorders.
- Multimodal Neuroimaging studies in first episode psychosis in schizophrenia, schizoaffective disorder and bipolar disorder.

Most relevant scientific articles

- HART H, RADUA J, NAKAO T, MATAIX-COLS D, RUBIA K. Meta-analysis of Functional Magnetic Resonance Imaging Studies of Inhibition and Attention in Attention-deficit/Hyperactivity Disorder: Exploring Task-Specific, Stimulant Medication, and Age Effects. *Arch Gen Psychiatry*. 2013 Feb;:185-98.
- CANALES-RODRÍGUEZ EJ, POMAROL-CLOTET E, RADUA J, SARRÓ S, ALONSO-LANA S, DEL MAR BONNÍN C ET AL.. Structural Abnormalities in Bipolar Euthymia: A Multicontrast Molecular Diffusion Imaging Study. *Biol Psychiatry*. 2013 Oct 4;.
- SARRÓ S, POMAROL-CLOTET E, CANALES-RODRÍGUEZ EJ, SALVADOR R, GOMAR JJ, ORTIZ-GIL J ET AL.. Structural brain changes associated with tardive dyskinesia in schizophrenia. *Br J Psychiatry*. 2013 Jul;203(1):51-7.
- CANALES-RODRÍGUEZ EJ, RADUA J, POMAROL-CLOTET E, SARRÓ S, ALEMÁN-GÓMEZ Y, ITURRIA-MEDINA Y ET AL.. Statistical analysis of brain tissue images in the wavelet domain: wavelet-based morphometry. *Neuroimage*. 2013 May 15;72:214-26.
- SANS-SANSA B, MCKENNA PJ, CANALES-RODRÍGUEZ EJ, ORTIZ-GIL J, LÓPEZ-ARAQUISTAIN L, SARRÓ S ET AL.. Association of formal thought disorder in schizophrenia with structural brain abnormalities in language-related cortical regions. *Schizophr Res*. 2013 May;146(1-3):308-13.

Highlights

- Development of a new method of 'spherical deconvolution' to infer the orientation distribution of nerve fibers in the brain voxel level. The algorithm is adapted to multichannel data diffusion MRI using Gaussian models not space regularization techniques total variation and noise.
- Application of imaging techniques for high angular resolution diffusion in populations of patients with bipolar disorder.
- Development of statistical methods for evidence of bias publication on imaging from the number of abnormalities reported.
- Development of anisotropic kernels for meta-analysis of neuroimaging studies.
- Empirical parameters optimization technique based morphometry voxels (voxel-based morphometry, VBM).
- Development of statistical methods to quantify brain asymmetry.



PROGRAMME:
Schizophrenia

Group 16

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Main lines of research

- Therapeutic interventions in mental health.
- Neuropsychopharmacology.
- First psychotic episodes: prognosis, diagnosis, and predictive factors in the evolution of the disease.
- Biological markers in psychiatric diseases and their treatment.

Most relevant scientific articles

- MUGURUZA C, LEHTONEN M, AALTONEN N, MORENTIN B, MEANA JJ, CALLADO LF. Quantification of endocannabinoids in postmortem brain of schizophrenic subjects. *Schizophr Res.* 2013 Aug;148(1-3):145-50.
- SÁNCHEZ P, PEÑA J, BENGOTXEA E, OJEDA N, ELIZAGÁRATE E, EZCURRA J ET AL.. Improvements in Negative Symptoms and Functional Outcome After a New Generation Cognitive Remediation Program: A Randomized Controlled Trial. *Schizophr Bull.* 2013 May 18;.
- FERNÁNDEZ-PASTOR B, ORTEGA JE, MEANA JJ. Involvement of serotonin 5-HT₃ receptors in the modulation of noradrenergic transmission by serotonin reuptake inhibitors: a microdialysis study in rat brain. *Psychopharmacology (Berl).* 2013 Sep;229(2):331-44.
- KURITA M, MORENO JL, HOLLOWAY T, KOZLENKOV A, MOCCI G, GARCÍA-BEA A ET AL.. Repressive epigenetic changes at the mGlu2 promoter in frontal cortex of 5-HT_{2A} knockout mice. *Mol Pharmacol.* 2013 Jun;83(6):1166-75.
- PINACHO R, VILLALMANZO N, ROCA M, INIESTA R, MONJE A, HARO JM ET AL.. Analysis of Sp transcription factors in the postmortem brain of chronic schizophrenia: a pilot study of relationship to negative symptoms. *J Psychiatr Res.* 2013 Jul;47(7):926-34.

Highlights

- 10 international publications.



PROGRAMME:
Depression

Group 17

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Main lines of research

- Obsessive-compulsive disorder.
- Neuroimaging.
- Mood disorders.
- Physical therapies.

Most relevant scientific articles

- HARRISON BJ, PUJOL J, CARDONER N, DEUS J, ALONSO P, LÓPEZ-SOLÀ M ET AL.. Brain cortico-striatal systems and the major clinical symptom dimensions of obsessive-compulsive disorder. *Biol Psychiatry*. 2013 Feb 15;73(4):321-8.
- DELL'OSSO B, BENATTI B, BUOLI M, ALTAMURA AC, MARAZZITI D, HOLLANDER E ET AL.. The influence of age at onset and duration of illness on long-term outcome in patients with obsessive-compulsive disorder: a report from the International College of Obsessive Compulsive Spectrum Disorders (ICOCS). *Eur Neuropsychopharmacol*. 2013 Aug;23(8):865-71.
- ALONSO P, LÓPEZ-SOLÀ C, GRATACÓS M, FULLANA MA, SEGALÀS C, REAL E ET AL.. The interaction between Comt and Bdnf variants influences obsessive-compulsive-related dysfunctional beliefs. *J Anxiety Disord*. 2013 Apr;27(3):321-7.
- CARDONER N, SORIA V, GRATACÓS M, HERNÁNDEZ-RIBAS R, PUJOL J, LÓPEZ-SOLÀ M ET AL.. Val-66Met BDNF genotypes in melancholic depression: effects on brain structure and treatment outcome. *Depress Anxiety*. 2013 Mar;30(3):225-33.
- GÁLVEZ V, LOO CK, ALONZO A, CERRILLO E, MENCHÓN JM, CRESPO JM ET AL.. Do benzodiazepines moderate the effectiveness of bitemporal electroconvulsive therapy in major depression? *J Affect Disord*. 2013 Sep 5;150(2):686-90.

Highlights

Our group has continued the development of several research lines that are interrelated. Regarding the obsessive-compulsive disorder (OCD) and neuroimaging lines, we have developed not only our own studies but also in collaboration with international groups. One of the projects that has progressed has been the consortium International OCD Brain Imaging Consortium in which different international OCD groups have joined their imaging data to carry out a mega-analysis that will be published in 2014.

On the other hand, the group has participated in international multicentric clinical trials on OCD, one of them about deep brain stimulation. This technique is carried out only in some OCD specialized centers and the participation in this study has placed our group as a reference center in this technique applied in OCD.

Regarding the OCD spectrum, we have participated in the researches promoted by ICOCS (International College of Obsessive-Compulsive Spectrum Disorders), as well as in the papers and with a meeting organized by our group that was held in Barcelona. Moreover, we collaborate with other CIBER groups in studies on OCD spectrum disorders, specifically in gambling disorder and eating behaviour disorders.

In the field of mood disorders, the group has been active in both, bipolar disorder and unipolar disorder. In bipolar disorder, the group has collaborated in relevant multicentric studies. On the other hand, in the field of unipolar depression, several studies on neuroimaging and genetics have been carried out. With regard the studies on physical therapies (deep brain stimulation and convulsive therapy) carried out by our group, an independent clinical study on the efficacy of maintenance convulsive therapy in unipolar depression has progressed. These activities have their training side in the course on convulsive therapy and other physical therapies that is organized by our group biannually.



PROGRAMME:

**Psychosomatic, Anxiety, and
Impulse Control Disorders;
Therapeutic Innovation.**

Group 18

Group Members

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Main lines of research

- Major Area 1: Pain & Depression
- Major Area 2: Mechanisms of action of Deep Brain Stimulation in CNS Disorders.
- Major Area 3: Neurobiology and Treatment of Schizophrenia and related mental disorders.

Most relevant scientific articles

- BRAVO L, ALBA-DELGADO C, TORRES-SÁNCHEZ S, MICO JA, NETO FL, BERROCOSO E. Social stress exacerbates the aversion to painful experiences in rats exposed to chronic pain: the role of the locus coeruleus. *Pain*. 2013 Oct;154(10):2014-23.
- PÉREZ-CABALLERO L, PÉREZ-EGEA R, ROMERO-GRIMALDI C, PUIGDEMONT D, MOLET J, CASO JR ET AL.. Early responses to deep brain stimulation in depression are modulated by anti-inflammatory drugs. *Mol Psychiatry*. 2013 May 28;.

Highlights

- The group has published 16 papers in top-scientific journals of translational research in connection with the main area of interest in the group, highlighting the level of collaborative works with other basic and clinical groups in the CIBERSAM, as well as other national and international groups. The group has published in *Molecular Psychiatry*, *Biological Psychiatry* (2 papers), *Pain*, *European Journal of Pain* (2 papers), *Anesthesiology*, *Neuropharmacology* (2 papers) and *Psychoneuroendocrinology*.
- The paper published in *Molecular Psychiatry* shows for the first time the mechanism of action of the early antidepressant effects that occur in the technique of Deep Brain Stimulation. This paper has been published with other basic and clinical groups in the CIBERSAM, resulting in a high-level translational work.
- Also, other investigational research to highlight is the demonstration of the neurobiological correlations between depression and chronic pain, one of the most featured research fields in the group. Particularly, it has been demonstrated the role of the locus coeruleus in this comorbidity.
- The group has participated actively in the Master of Research in Mental Health organized by the CIBERSAM and four Spanish universities. Moreover, the group has organized the Training Course of Preclinical Research using animals. Also, the Minister of Competitiveness has accredited the group as an enabled structure to inform about the ethical aspects in research using animals, particularly animal models of psychiatric and neurological illness to serve the CIBERSAM.
- In 2013 the group has signed three contracts of D & R with three pharmaceutical companies interested in the development of new and innovative psychopharmacological drugs.
- In 2013 three young members of our group have defended their Doctoral Thesis.



PROGRAMME:
**Schizophrenia
and Related Disorders**

Group 19

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Main lines of research

- Psychotic disorders. Vulnerability to schizophrenia. Neurocognition. Social cognition. Disorder's evolution.
- Psychotic disorders. Treatment for schizophrenia. First episodes. Treatment for resistant symptoms.
- Psychotic disorders. Psychosis and dual pathology. Addictive disorders.
- Psychosomatics. Psychiatric morbidity in medical-surgical patients. Population psychiatric morbidity and use of care services.
- Personality. Traits and disorders. Attention deficit hyperactivity disorder (ADHD). Antisocial disorder.

Most relevant scientific articles

- RODRÍGUEZ-JIMÉNEZ R, BAGNEY A, MEZQUITA L, MARTÍNEZ-GRAS I, SÁNCHEZ-MORLA EM, MESA N, IBÁÑEZ MI, DíEZ-MARTÍN J, JIMÉNEZ-ARRIERO MA, LOBO A, SANTOS JL, PALOMO T; PARG.. Cognition and the five-factor model of the Positive and Negative Syndrome Scale in schizophrenia. *Schizophrenia Research*. 2013;143(1):77-83.
- GARCÍA-BUENO B, BIOQUE M, MAC-DOWELL KS, BARCONES MF, MARTÍNEZ-CENGOTTIBENGOA M, PINA-CAMACHO L ET AL.. Pro-/Anti-inflammatory Dysregulation in Patients With First Episode of Psychosis: Toward an Integrative Inflammatory Hypothesis of Schizophrenia. *Schizophr Bull*. 2013 Mar 13;.
- BIOQUE M, GARCÍA-BUENO B, MACDOWELL KS, MESEGUER A, SAIZ PA, PARELLADA M ET AL.. Peripheral Endocannabinoid System Dysregulation in First-Episode Psychosis. *Neuropsychopharmacology*. 2013 Jul 4;.
- SANZ-FUENTENEbro J, TABOADA D, PALOMO T, ARAGÜES M, OVEJERO S, DEL ALAMO C, MOLINA V. Randomized trial of clozapine vs. risperidone in treatment-naïve first-episode schizophrenia: results after one year. *Schizophrenia research*. 2013;149(1-3):156-61.
- GEDA YE, SCHNEIDER LS, GITLIN LN, MILLER DS, SMITH GS, BELL J. Neuropsychiatric symptoms in Alzheimer's disease: past progress and anticipation of the future. *Alzheimers Dement*. 2013 Sep;9(5):602-8.

Highlights

This year, some papers with the results of CIBERSAM collaborative projects have been published in great impact factor journals. It has been the result of previous years of working and collaboration with other CIBERSAM groups. Also, it has been published the results of our clinical trial of clozapine in first episode psychotic patients. Finally, we have continued our research and publications in Cognition and Schizophrenia. We are working in the development in Spain of the MATRICS Consensus Cognitive Battery (MCCB). Since 2008, the G19 group collaborates with Michael Green and Keith Nuechterlein, co-directors of the Neurocognition Committee of Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS), National Institute of Mental Health (USA).



PROGRAMME:
**Depression;
Therapeutic Innovation**

Group 20

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Main lines of research

- New etiopathogenic hypothesis of mental illness.
- Serotonergic system and Cannabinoid system in depression.
- Intracellular signaling pathways involved in psychiatric disorders.
- Involvement of hippocampal neurogenesis in depressive disorders.
- Animal models of depression / anxiety.
- Antidepressants and pain.
- Molecular basis for the development of fast-acting antidepressants.
- siRNA as a novel therapeutic strategies in psychiatry.
- Pharmacogenetics of depression.

Most relevant scientific articles

- CRESPO-FACORRO B, ORTIZ-GARCÍA DE LA FOZ V, MATA I, AYESA-ARRIOLA R, SUAREZ-PINILLA P, VALDIZAN EM ET AL.. Treatment of first-episode non-affective psychosis: a randomized comparison of aripiprazole, quetiapine and ziprasidone over 1 year. *Psychopharmacology (Berl)*. 2013 Aug 20;.
- MARTÍNEZ-CUÉ C, MARTÍNEZ P, RUEDA N, VIDAL R, GARCÍA S, VIDAL V ET AL.. Reducing GABAA $\alpha 5$ receptor-mediated inhibition rescues functional and neuromorphological deficits in a mouse model of down syndrome. *J Neurosci*. 2013 Feb 27;33(9):3953-66.
- LINGE R, PAZOS Á, DÍAZ Á. Social isolation differentially affects anxiety and depressive-like responses of bulbectomized mice. *Behav Brain Res*. 2013 May 15;245:1-6.
- VIDAL R, DIAZ A, PAZOS A, CASTRO E. Region-specific regulation of 5-HT1B receptors in the rat brain by chronic venlafaxine treatment. *Psychopharmacology (Berl)*. 2013 Sep;229(1):177-85.
- FUENCISLA PC, VIDAL R, DÍAZ A, CASTRO E, ANJOS SD, VARGAS V ET AL.. Signaling Pathways Involved In Antidepressant-Induced Cell Proliferation And Synaptic Plasticity. *Curr Pharm Des*. 2013 Oct 28;.

Highlights

- Development of a pharmacological, biochemical, and molecular platform including in vitro cell and brain tissue cultures and in vivo animal targeting cell proliferation assays in the nervous system, for the preclinical evaluation of candidates for development new antidepressants molecules.
- Development of a genetic animal model of depression with hippocampal neurogenesis deficit.
- Collaboration agreement with the company Servier for the study of a new molecule with antidepressant profile in animal models developed by the group.
- Starting the Master Interuniversitario de Iniciación a la Investigación en Salud Mental: Official Title at UC involved, UCM, UB, UAB, UCA and CIBERSAM various groups coordinated by the G20.



PROGRAMME:

**Research Group in
Clinical Psychiatry**

Group 21

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Main lines of research

PERMANENT RESEARCH LINES:

- Affective disorders: new therapeutic strategies in treatment-resistant major depression; Deep Brain Stimulation in Treatment Resistant Major Depression; structural and functional neuroimaging; biological and genetic biomarkers; identification and evaluation of new therapeutic targets and programs; pharmacogenetics.
- Psychotic disorders: environmental, biological and genetic factors; efficacy and effectiveness of antipsychotic drugs; first episodes of psychosis; genotype-phenotype and environment interaction; neuroimaging; pharmacogenetics.
- Personality disorders: mixed treatment in patients with Borderline Personality Disorder (BPD), validation of diagnostic instruments; genetic-neuroimaging studies.
- Mental health therapeutics: efficacy and resistance to treatment; validation of diagnostic and assessment scales; systematic reviews; neuropsychology; neurophysiology; neuroimaging.

NEW RESEARCH LINES:

- New therapeutic strategies: DBS in treatment-resistant schizophrenia; methylphenidate in mania; determination of cortisol in hair; brain effects of mindfulness in BPD; Apps and ICT application in the prevention and treatment of depression and schizophrenia.

Most relevant scientific articles

- DE DIEGO-ADELIÑO J, PIRES P, GÓMEZ-ANSÓN B, SERRA-BLASCO M, VIVES-GILBERT Y, PUIGDEMONT D ET AL.. Microstructural white-matter abnormalities associated with treatment resistance, severity and duration of illness in major depression. *Psychol Med.* 2013 Aug 21;:1-12.
- SERRA-BLASCO M, PORTELLA MJ, GÓMEZ-ANSÓN B, DE DIEGO-ADELIÑO J, VIVES-GILBERT Y, PUIGDEMONT D ET AL.. Effects of illness duration and treatment resistance on grey matter abnormalities in major depression. *Br J Psychiatry.* 2013 Jun;202:434-40.
- DE DIEGO-ADELIÑO J, PORTELLA MJ, GÓMEZ-ANSÓN B, LÓPEZ-MORUELO O, SERRA-BLASCO M, VIVES Y ET AL.. Hippocampal abnormalities of glutamate/glutamine, N-acetylaspartate and choline in patients with depression are related to past illness burden. *J Psychiatry Neurosci.* 2013 Mar;38(2):107-16.
- PÉREZ-CABALLERO L, PÉREZ-EGEA R, ROMERO-GRIMALDI C, PUIGDEMONT D, MOLET J, CASO JR ET AL.. Early responses to deep brain stimulation in depression are modulated by anti-inflammatory drugs. *Mol Psychiatry.* 2013 May 28;.
- RIPKE S, O'DUSHLAINE C, CHAMBERT K, MORAN JL, KÄHLER AK, AKTERIN S ET AL.. Genome-wide association analysis identifies 13 new risk loci for schizophrenia. *Nat Genet.* 2013 Oct;45(10):1150-9.

Highlights

NEW FUNDED PROJECTS:

New funding has been obtained for 3 new collaborative FIS projects led by our group, along with 1 collaborative project led by another CIBERSAM group.

- Longitudinal study of brain changes in patients with a first episode of major depression. PI13/01057 - Principal Investigator: Maria J. Portella
- Effects of Mindfulness in the Default Mode Network Activity and Functional Connectivity in Patients with Borderline Personality Disorder. PI13/00134 - Principal Investigator: Joaquim Soler
- The role of the microbiota in the origin and the consequences of the inflammation on the depression. A traslational study. PI13/01102 - Principal Investigator: Juan Carlos Leza
- Efficacy of the online tool iFightDepression in patients with mild to moderate depression. PI13/00171 - Principal Investigator: V. Pérez



PROGRAMME:
Schizophrenia

Group 22

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Main lines of research

- Suicidal behaviour.
- Application of data mining to mental health research.
- Genetic of mental disorders.
- Lipid metabolism in mental disorders.
- Phamacogenetics.

Most relevant scientific articles

- TORRENT C, BONNIN C DEL M, MARTÍNEZ-ARÁN A, VALLE J, AMANN BL, GONZÁLEZ-PINTO A ET AL.. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013 Aug 1;170(8):852-9.
- LÓPEZ-CASTROMAN J, MELHEM N, BIRMAHER B, GREENHILL L, KOLKO D, STANLEY B ET AL.. Early childhood sexual abuse increases suicidal intent. *World Psychiatry*. 2013 Jun;12(2):149-54.
- GRANDE I, BERNARDO M, BOBES J, SAIZ-RUIZ J, ALAMO C, VIETA E. Antipsychotic switching in bipolar disorders: a systematic review. *Int J Neuropsychopharmacol*. 2013 Oct 21;:1-11.
- LLERENA A, ALVAREZ M, DORADO P, GONZÁLEZ I, PEÑAS-LLEDÓ E, PÉREZ B ET AL.. Interethnic differences in the relevance of CYP2C9 genotype and environmental factors for diclofenac metabolism in Hispanics from Cuba and Spain. *Pharmacogenomics J*. 2013 Aug 20;.
- BLASCO-FONTECILLA H, JAUSSENT I, OLIÉ E, GARCÍA EB, BEZIAT S, MALAFOSSE A ET AL.. Additive effects between prematurity and postnatal risk factors of suicidal behavior. *J Psychiatr Res*. 2013 Jul;47(7):937-43.

Highlights

PROJECTS

- Title: Neurobiological and clinical factors of second episodes of Schizophrenia: a longitudinal study of first psychotic episodes. PI: Ramon y Cajal research group's PI - Jerónimo Saiz Ruiz. Funding Agency: ISCIII. Ref: PI11/00325 From: 2012 To:2014.
- Title: Genes and environment in Schizophrenia. PI: Ramon y Cajal research group's PI - Jerónimo Saiz Ruiz. Funding Agency: Madrid Community. Ref.: S2010/BMD-2422 AGES From: 2012 To: 2014.
- Title: Genes and environment in Schizophrenia. PI: Jimenez Diaz Foundation research group's PI - Enrique Baca-García. Funding Agency: Madrid Community. Ref.: S2010/BMD-2422 AGES From: 2012 To: 2014.
- Title: Pharmacogenetics of antidepressant's side effects and its role in the vulnerability to depression. PI: Adrian Llerena. Funding Agency: ISCIII. Ref.: PI10/02758 From: 2011 To:2013.
- Title: Application of spatial techniques in the distribution of mental disorders and its assistance in the public health system. PI: Enrique Baca García. Funding Agency: Ministry of Science and Innovation. Ref.: SAF2010-21849 From: 2010 To:2013.
- Title: Research activity intensification in the National Health System. PI: Enrique Baca García. Funding Agency: Carlos III Health Institute. Ref.: Programa 13SNS From: 2010 To: 2013.
- Title: International Latino Research Paternship (IRLP). PI: IP Nodo Madrid - Enrique Baca García. Funding Agency: National Institute on Drug Abuse (NIDA). Ref.: From: 2013 To: 2016.
- Title: Starting group research programme. Subprogramme of predoctoral grants. PI: Puerta de Hierro University Hospital Mental Health Translational Research Group PI – Hilario Blasco-Fontecilla. Funding Agency: Puerta de Hierro University Hospital Research's Institute (IDIPHIM). Ref.: From: 2013 To: 2017.



PROGRAMME:
Therapeutic Innovation

Group 23

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Main lines of research

- Identification of risk polymorphisms in psychosis and affective disorders.
- Epigenetic Studies (functional expression) of candidate genes in psychosis in mental illness.
- Study of animal models in severe mental illness.
- Study of monogenic mutations in neurodegenerative diseases.
- Identification of genetic factors and environmental risk in affective and psychotic disorders.
- Identification of abnormal patterns in neuroimaging (morphometry, functional, spectroscopy) in psychotic patients.
- Database Design and coordination of clinical, genetic and neuroimaging for conducting multicenter projects data.
- Development of interactive systems for improving therapeutic adherence.
- Study of genetic and environmental factors in the development of language in children.
- Study the effectiveness of techniques of psycho- social intervention in severe mental disorders.

Most relevant scientific articles

- GILBERT-JUAN J, NACHER J, SANJUÁN J, MOLTÓ MD. Sex-specific association of the ST8SIAII gene with schizophrenia in a Spanish population. *Psychiatry Res.* 2013 Sep 23;.
- NACHER J, GUIRADO R, CASTILLO-GÓMEZ E. Structural Plasticity of Interneurons in the Adult Brain: Role of PSA-NCAM and Implications for Psychiatric Disorders. *Neurochem Res.* 2013 Jan 26;.
- SANZ-REQUENA R, REVERT-VENTURA A, MARTÍ-BONMATÍ L, ALBERICH-BAYARRI A, GARCÍA-MARTÍ G. QUANTITATIVE MR perfusion parameters related to survival time in high-grade gliomas. *Eur Radiol.* 2013 Jul 10;.

Highlights

- Patent: "Método para la detección de áreas anómalas del cerebro a partir de imágenes de Resonancia Magnética". Solicitud P201331901



PROGRAMME:
Bipolar Disorder

Group 24

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Main lines of research

- Longitudinal study of schizophrenia and bipolar disorder.
- Epidemiological study.
- Inverse comorbidity study.
- Cognitive endophenotypes (Endophenocognitypes) study.
- Neurogenetics.

Most relevant scientific articles

- TABARÉS-SEISDEDOS R, RUBENSTEIN JL. Inverse cancer comorbidity: a serendipitous opportunity to gain insight into CNS disorders. *Nat Rev Neurosci*. 2013 Apr;14(4):293-304.
- TORRENT C, BONNIN CDEL M, MARTÍNEZ-ARÁN A, VALLE J, AMANN BL, GONZÁLEZ-PINTO A ET AL.. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013 Aug 1;170(8):852-9.
- CATALÁ-LÓPEZ F, GÈNOVA-MALERAS R, VIETA E, TABARÉS-SEISDEDOS R. The increasing burden of mental and neurological disorders. *Eur Neuropsychopharmacol*. 2013 May 2;.
- PELAYO-TERÁN JM, DÍAZ FJ, PÉREZ-IGLESIAS R, SUÁREZ-PINILLA P, TABARÉS-SEISDEDOS R, DE LEÓN J ET AL.. Trajectories of symptom dimensions in short-term response to antipsychotic treatment in patients with a first episode of non-affective psychosis. *Psychol Med*. 2013 Mar 6;:1-14.
- BUENO C, RAMÍREZ C, RODRÍGUEZ-LOZANO FJ, TABARÉS-SEISDEDOS R, RODENAS M, MORALEDA JM ET AL.. Human adult periodontal ligament-derived cells integrate and differentiate after implantation into the adult Mammalian brain. *Cell Transplant*. 2013;22(11):2017-28.

Highlights

- Our team has launched the Depression and Primary Healthcare Programme (PADAP) "What is depression, how to combat it and how can we help" in the Hospital General de Valencia University Consortium. This is a collaborative care programme between the Department of Psychiatry of the University of Valencia and the Valencian Regional Healthcare System.
- Patent: Method for the detection of neurological diseases. CIBERSAM-Valencia-Alicante University Neuroscience Institute.
- Research Unit: team responsible for the management and implementation of the Research Unit of Personal Autonomy, Dependence and Serious Mental Disorders (TMAP). Four research lines and five patient health services.



PROGRAMME:
**Bipolar Disorder;
Therapeutic Innovation**

Group 25

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Main lines of research

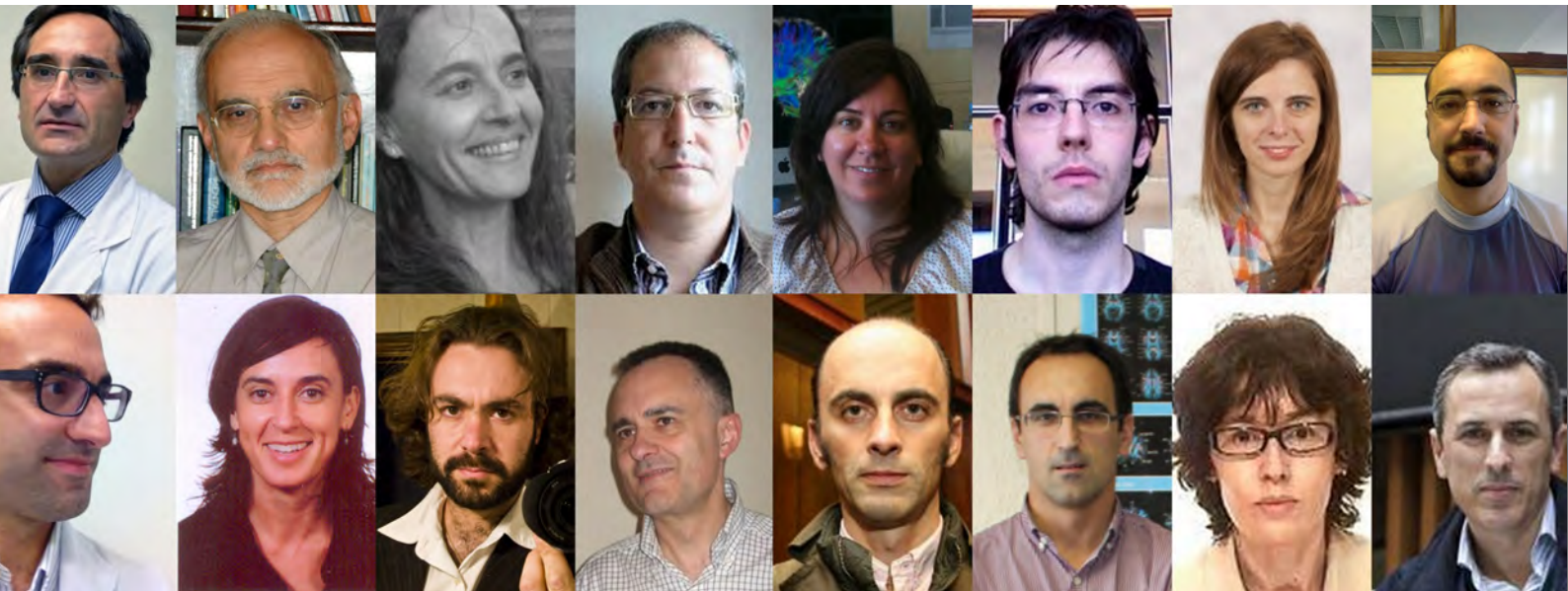
- Epidemiology and disability associated with bipolar and unipolar disorders.
- Endophenotypes, genetics and biomarkers of affective disorders.
- Clinical trials and innovation in psychopharmacology of bipolar and depressive disorders.
- Observational studies in affective disorders.
- Innovative psychological interventions for bipolar disorder.
- Neurocognition and neuroimaging of bipolar and unipolar disorders.
- First affective and psychotic episodes.
- Psychometrics of bipolar disorders.

Most relevant scientific articles

- TORRENT C, BONNIN CDEL M, MARTÍNEZ-ARÁN A, VALLE J, AMANN BL, GONZÁLEZ-PINTO A ET AL.. Efficacy of functional remediation in bipolar disorder: a multicenter randomized controlled study. *Am J Psychiatry*. 2013 Aug 1;170(8):852-9.
- BOURNE C, AYDEMİR Ö, BALANZÁ-MARTÍNEZ V, BORA E, BRISSOS S, CAVANAGH JT ET AL.. Neuropsychological testing of cognitive impairment in euthymic bipolar disorder: an individual patient data meta-analysis. *Acta Psychiatr Scand*. 2013 Sep;128(3):149-62.
- JIMÉNEZ E, ARIAS B, MITJANS M, GOIKOLEA JM, RODA E, SÁIZ PA ET AL.. Genetic variability at IMPA2, INPP1 and GSK3 β increases the risk of suicidal behavior in bipolar patients. *Eur Neuropsychopharmacol*. 2013 Feb 28;.
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- BATALLA A, BHATTACHARYYA S, YÜCEL M, FUSAR-POLI P, CRIPPA JA, NOGUÉ S ET AL.. Structural and functional imaging studies in chronic cannabis users: a systematic review of adolescent and adult findings. *PLoS One*. 2013;8(2):e55821.

Highlights

- Development of recommendations for the use of antidepressants in bipolar disorder: PACCHIAROTTI I, BOND DJ, BALDESSARINI RJ, NOLEN WA, GRUNZE H, LICHT RW, POST RM, BERK M, GOODWIN GM, SACHS GS, TONDO L, FINDLING RL, YOUNGSTROM EA, TOHEN M, UNDURRAGA J, GONZÁLEZ-PINTO A, GOLDBERG JF, YILDIZ A, ALTSHULER LL, CALABRESE JR, MITCHELL PB, THASE ME, KOUKOPOULOS A, COLOM F, FRYE MA, MALHI GS, FOUNTOLAKIS KN, VÁZQUEZ G, PERLIS RH, KETTER TA, CASSIDY F, AKISKAL H, AZORIN JM, VALENTÍ M, MAZZEI DH, LAFER B, KATO T, MAZZARINI L, MARTÍNEZ-ARAN A, PARKER G, SOUERY D, OZERDEM A, MCELROY SL, GIRARDI P, BAUER M, YATHAM LN, ZARATE CA, NIERENBERG AA, BIRMAHER B, KANBA S, EL-MALLAKH RS, SERRETTI A, RIHMER Z, YOUNG AH, KOTZALIDIS GD, MACQUEEN GM, BOWDEN CL, GHAEMI SN, LOPEZ-JARAMILLO C, RYBAKOWSKI J, HA K, PERUGI G, KASPER S, AMSTERDAM JD, HIRSCHFELD RM, KAPCZINSKI F, VIETA E. The International Society for Bipolar Disorders (ISBD) task force report on antidepressant use in bipolar disorders. *Am J Psychiatry*. 2013 Nov 1;170(11):1249-62
- Development of a clinical guideline for the long-term treatment of bipolar disorder: Grunze H, Vieta E, Goodwin GM, Bowden C, Licht RW, Möller HJ, Kasper S; WFSBP Task Force on Treatment Guidelines for Bipolar Disorders. The World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the biological treatment of bipolar disorders: update 2012 on the long-term treatment of bipolar disorder. *World J Biol Psychiatry*. 2013 Apr;14(3):154-219.
- Patent Application No. P201331642, "Method for the detection of neurological diseases"



PROGRAMME:
**Schizophrenia;
Therapeutic Innovation**

Group 26

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Main lines of research

- First episode non-affective psychosis: clinical and biological aspects.
- Neuroimaging: methods development.
- Genomic studies in schizophrenia.
- First episode of eating disorders.

Most relevant scientific articles

- Psychosis Endophenotypes International Consortium and the Wellcome Trust Case-Control Consortium 2. Electronic address: e.bramon@ucl.ac.uk. A Genome-Wide Association Analysis of a Broad Psychosis Phenotype Identifies Three Loci for Further Investigation. *Biol Psychiatry*. 2013 Jul 17;.
- RIPKE S, O'DUSHLAINE C, CHAMBERT K, MORAN JL, KÄHLER AK, AKTERIN S ET AL.. Genome-wide association analysis identifies 13 new risk loci for schizophrenia. *Nat Genet*. 2013 Oct;45(10):1150-9.
- SAINZ J, MATA I, BARRERA J, PÉREZ-IGLESIAS R, VARELA I, ARRANZ MJ ET AL.. Inflammatory and immune response genes have significantly altered expression in schizophrenia. *Mol Psychiatry*. 2013 Oct;18(10):1056-7.
- PÉREZ-IGLESIAS R, MARTÍNEZ-GARCÍA O, PARDO-GARCÍA G, AMADO JA, GARCÍA-UNZUETA MT, TABARES-SEISDEDOS R ET AL.. Course of weight gain and metabolic abnormalities in first treated episode of psychosis: the first year is a critical period for development of cardiovascular risk factors. *Int J Neuropsychopharmacol*. 2013 Oct 8;:1-11.
- ROIZ-SANTIÁÑEZ R, AYESA-ARRIOLA R, TORDESILLAS-GUTIÉRREZ D, ORTIZ-GARCÍA DE LA FOZ V, PÉREZ-IGLESIAS R, PAZOS A ET AL.. Three-year longitudinal population-based volumetric MRI study in first-episode schizophrenia spectrum patients. *Psychol Med*. 2013 Sep 26;:1-14.

Highlights

- The PSYSCAN Project (EU-FP7-HEALTH-2013-INNOVATION-1. Exp.: HEALTH. 2013.2.2.1-2_grant 603196) aims to develop and implement three new applications: PSYSCAN-predict, PSYCAN-Stratify and PSYSCAN-monitor to be used in routine clinical settings to help out clinicians to predict onset of psychosis, early diagnosis and to assess disease progression.
- Publication in genetic in the field of schizophrenia that have been the result of collaborations with international consortiums (Ripke S, O'Dushlaine C, Cham- bert K, Moran JL, Kähler AK, Akterin S, et al. Genome-wide association analysis identifies 13 new risk loci for schizophrenia. *Nat Genet*. 2013 Oct;45(10):1150-9; and Psychosis Endophenotypes International Consortium and the Wellcome Trust Case-Control Consortium 2. Electronic address: e.bramon@ucl.ac.uk. A Genome-Wide Association Analysis of a Broad Psychosis Phenotype Identifies Three Loci for Further Investigation. *Biol Psychiatry*. 2013 Jul 17) and also drawn from partnership with other CIBER groups (Sáinz J, Mata I, Barrera J, Pérez-Iglesias R, Varela I, Arranz MJ, et al. Inflammatory and immune response genes have significantly altered expression in schizophrenia. *Mol Psychiatry*. 2013 Oct;18(10):1056-7).
- During the 2013 our clinical and structural neuroimaging lines of research have been consolidated.



PROGRAMME:

**Psychiatry, Mental Health
and Addiction**

Linked Group 1

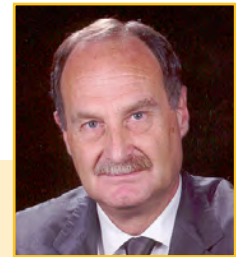
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Main lines of research

The Psychiatry, Mental Health and Addictions group is a multidisciplinary team composed of clinicians and basic researchers that develops its scientific activity focused on the study of Impulse Disorders, Disruptive Behaviors and Addictions affecting children, adolescents and adult populations. Since its creation in 2003, our research group has had permanent funding from Spanish and European Public Institutions, as well as Private Foundations. The Group has collaboration with 6 National and 12 International Consortia and participates in investigations that give rise to multiple publications of relevant impact factor. The different research lines that are being developed include the study of:

- Neurodevelopmental Disorders, mainly Attention Deficit and Hyperactivity Disorder (ADHD), their epidemiology and clinical features along lifespan, including the analysis of functional and structural brain abnormalities through neuroimaging, the identification of psychopathological comorbidity and the evaluation of diverse therapeutic approaches. We are also interested in the identification of how these different neurodevelopmental disorders and psychopathological factors influence scholar failure and, later on, in how the influence of adult everyday life.
- Impulsive and Disruptive behaviors. This research line concerns the study of diagnostics procedures for Borderline Personality Disorder (BPD) and its comorbidity with ADHD or Addictive behaviors. The definition of clinical subtypes, the development of new treatments and the evaluation of psychopathologic symptoms related to high-risk driving and traffic accidents, are the main subjects for our studies.
- Addictive behaviors and Dual Disorders. This line of research is focused on different clinical issues and neuroimaging studies to identify risk indicators and treatment modalities for Substance Use Disorders.

Most relevant scientific articles

- Transcultural Psychiatry, Transcultural Psychiatry, mainly focused on the prevalence of psychopathology in the immigrant population, as well as the impact of cultural and ethnic variables on diagnosis and treatment of mental disorders and substance related disorders.
- Genetic basis of the different psychiatric disorders mentioned above through multiple approaches that include Genome-Wide Association Studies (GWAS), candidate-gene association studies, analyses of transcriptomic profiles with microarray technology and next-generation sequencing as well as animal model approaches. Unraveling the genetic basis of these conditions may help to improve diagnostic procedures, provide clues about predictive risk factors and allow the identification of new targets that may eventually lead to novel and more individualized pharmacological treatments.
- CROSS-DISORDER GROUP OF THE PSYCHIATRIC GENOMICS CONSORTIUM¹, ET AL, CASAS M, RAMOS-QUIROGA JA, RIBASÉS M, ET AL. Genetic relationship between five psychiatric disorders estimated from genome-wide SNPs. *NAT GENET.* 2013;45(9):984-94.
- RAMOS-QUIROGA JA, VIDAL R, CASAS M. Toward a better understanding of attention-deficit/hyperactivity disorder across the lifespan. *J Am Acad Child Adolesc Psychiatry.* 2013 Feb;52(2):119-20.
- SÁNCHEZ-MORA C, RAMOS-QUIROGA JA, GARCÍA-MARTÍNEZ I, FERNÁNDEZ-CASTILLO N, BOSCH R, RICHARTE V ET AL.. Evaluation of single nucleotide polymorphisms in the miR-183-96-182 cluster in adulthood attention-deficit and hyperactivity disorder (ADHD) and substance use disorders (SUDs). *Eur Neuropsychopharmacol.* 2013 Nov;23(11):1463-73.
- CASAS M, RÖSLER M, SANDRA KOOIJ JJ, GINSBERG Y, RAMOS-QUIROGA JA, HEGER S ET AL.. Efficacy and safety of prolonged-release OROS methylphenidate in adults with attention deficit/hyperactivity disorder: a 13-week, randomized, double-blind, placebo-controlled, fixed-dose study. *World J Biol Psychiatry.* 2013 May;14(4):268-81.
- COLLAZOS F, RAMOS M, QURESHI A, EIROA-OROSA FJ, RODRÍGUEZ A, CASTELLS X ET AL.. Effectiveness and tolerability of duloxetine in 2 different ethnic samples: a prospective observational cohort study. *J Clin Psychopharmacol.* 2013 Apr;33(2):254-6.

Highlights

PRINCIPAL PROJECTS THAT DEVELOPED DURING 2013:

- Title: Attention Deficit Hyperactivity Disorder Drugs Use Chronic Effect (ADDUCE). Coordinator Investigator: Prof. Ian Wond. Principal Investigator: Ramos Quiroga, José Antonio. Funding Agency: FP7-HEALTH-2010-single-stage Adverse Drug Reaction. Duration: 2013-2015. Funding: 3,000,000 € (50.000 €)
- Title: Aggression subtyping for improved insight and treatment innovation in psychiatric disorders. Principal Investigator: Barbara Franke and Jose Antonio Ramos Quiroga. Funding Agency: 7th Framework Programme for Research, technological Development and Demonstration. Duration: 2013-2015. Funding: 6,000,000 € (80.000 €)
- Title: Preventive Care Infrastructure based On Ubiquitous Sensing (Precious) (PRECIOS FP7ICT2013). Principal Investigator: Lusilla Palacios, Pilar. Funding Agency: European Commission. Duration: 2013 - 2016. Funding: 214.860,00 €
- Title: International Latino Research Partnership (ILRP) Grant nº 1R01DA034952-01A1. (ILRP-1R01DA034952-01A1-NIH2012(NIDA)). Principal Investigator: Collazos Sanchez, Francisco. Funding Agency: National Institutes of Health (NIH). National Institute on Drug Abuse (NIDA). Duration: 2013 - 2018. Funding: 442.424,00 €
- Title: Identification of genetic risk factors in ADHD through the analysis of the transcriptomic profiles in lymphocytes with microarray technology as well as population-based association studies (PI11/00571). Principal Investigator: Ribases Haro, Marta. Funding Agency: Fondo de Investigación Sanitaria (FIS). Instituto de Salud Carlos III. Duration: 2012-2014. Funding: 152.900,44 €
- Title: Genetic susceptibility factors in attention- deficit/hyperactivity disorder (ADHD): a two stage genome-wide association study. Principal Investigator: Ribases Haro, Marta. Funding Agency: Fundació La Marató de TV3. Duration: 2010 - 2013. Funding: 149.712,50 €
- Title: Multimodal study on the influence on brain structure and function of the gene latrophilin 3 (LPHN3) in adults with Attention Deficit Disorder with Hyperactivity (PI11/01629). Principal Investigator: Casas Brugué, Miguel. Funding Agency: Fondo de Investigación Sanitaria (FIS). Instituto de Salud Carlos III. Duration: 2011-2013. Funding: 125.235,00 €



PROGRAMME:
Schizophrenia

Linked Group 2

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Main lines of research

- Identification of genetic, molecular and hormonal schizophrenia markers.
- Identification of genetic markers for autism and intellectual disability.
- Stress and HPA axis in mental illness.
- Cognition and neuropsychology of schizophrenia and personality disorders.
- Co-morbidity of psychiatric disorders and intellectual disability.

Most relevant scientific articles

- REYNOLDS RM, LABAD J, BUSS C, GHAEMMAGHAMI P, RÄIKKÖNEN K. Transmitting biological effects of stress in utero: Implications for mother and offspring. *PSYCHONEUROENDOCRINOLOGY*. 2013;38(9):1843-9.
- TOMA C, HERVÁS A, BALMAÑA N, SALGADO M, MARISTANY M, VILELLA E, AGUILERA F, OREJUELA C, CUSCÓ I, GALLASTEGUI F, PÉREZ-JURADO LA, CABALLERO-ANDALUZ R, DIEGO-OTERO Yd, GUZMÁN-ALVAREZ G, RAMOS-QUIROGA JA, RIBASÉS M, BAYÉS M, CORMAND B. Neurotransmitter systems and neurotrophic factors in autism: association study of 37 genes suggests involvement of DDC. *World J Biol Psychiatry*. 2013;14(7):516-27.
- TORRELL H, MONTAÑA E, ABASOLO N, ROIG B, GAVIRIA AM, VILELLA E, MARTORELL L. Mitochondrial DNA (mtDNA) in brain samples from patients with major psychiatric disorders: gene expression profiles, mtDNA content and presence of the mtDNA common deletion. *Am J Med Genet B Neuropsychiatr Genet*. 2013;(2):213-23.
- SEGALÁS C, ALONSO P, ORBEGOZO A, REAL E, SUBIRÀ M, LÓPEZ-SOLÀ C, MARTÍNEZ-ZALACAÍN I, LABAD J, HARRISON BJ, PUJOL J, MENCHÓN JM, CARDONER N, SORIANO-MAS C. Brain structural imaging correlates of olfactory dysfunction in obsessive-compulsive disorder. *Eur Arch Psychiatry Clin Neurosci*. 2013;.
- LABAD J, REYNOLDS RM. Leptin, Somatic Depressive Symptoms and the Metabolic. *Ann Behav Med*. 2013;46(1):5-6.

Highlights

WE HIGHLIGHT TWO ARTICLES:

- From the research line Stress and HPA axis in mental illness the article by Manzanares et al. Unhealthy lifestyle in early psychoses: The role of life stress and the hypothalamic-pituitary-adrenal axis. *Psychoneuroendocrinology*. 2014 Jan;39:1-10
- From the research line Identification of genetic, molecular and hormonal schizophrenia markers the article by Torrell et al. Mitochondrial DNA (mtDNA) in brain samples from patients with major psychiatric disorders: gene expression profiles, mtDNA content and presence of the mtDNA common deletion. *Am J Med Genet B Neuropsychiatr Genet*. 2013 Mar;162B(2):213-23.

WE HIGHLIGHT THE DEVELOPMENT OF THREE COMPETITIVE PROJECTS:

- PI12/01885. Mutaciones en el ADN mitocondrial que contribuyen en el autismo y a las características propias de las enfermedades mitocondriales presentes en pacientes con trastorno del espectro autista. IP: Lourdes Martorell.
- PI12/02111. Alteraciones de la melina en función del genotipo DDRI en pacientes esquizofrénicos: estudios clínico y molecular. IP: Elisabet Vilella.
- PI10/01607. Mecanismos neurobiológicos del estrés en psicosis incipientes: relación del eje hipotálamo-pituitario-adrenal con el polimorfismo Val66Met del gen BDNF, volumen del hipocampo y rendimiento neuropsicológico. IP Javier Labad.

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