

ANNUAL REPORT

2015

cïbersam

Centro de Investigación Biomédica en Red
Salud Mental

cïber

Centro de Investigación Biomédica en Red



Scientific Director's Presentation

When the decision has to be made whether or not to take part in a structure - in this case, a research body - with a specific mission and values, the two possibilities to be considered from a standpoint of consistency and integrity are to accept this or refuse the offer. This CIBER accepted the challenge to form a centre of excellence in cooperative research in 2008. Since then its groups, and with them each of the persons forming the organisation, with their Principal Investigators (PIs) at the head, have endeavoured to participate in multi-centre projects of translational research with the ultimate aim of improving the mental health of this world's inhabitants. We have done this with the tools that have been made available to us, with the financing provided by the ISCIII, but also with innovation, creativity, external funds and above all the firm belief that the values defining the CIBER are the ones that will enable us to progress in scientific knowledge materialising in a better quality of life of the persons who finance us through their taxes. Eight years later the results are there for all to see. It is easy to see the watershed meant by the CIBERSAM in cooperative and translational research culture in neurosciences and mental health in this country. We should feel proud of the work that we have done and get ready to continue improving in the coming years.

Our institution has undoubtedly become an international reference attracting the interest of private industry to be able to safely and efficiently develop some of its projects with the quality guarantee provided by a centre subject to annual assessments and under national and international scrutiny. The capacity for recruiting patients for studies, advice of international leaders in their fields and the scientific thoroughness with which studies are carried out at our centre are some of the elements ensuring the added value that we can offer as a research centre. The increasing level of cooperation between our research centre and the private sector vouches for

this. The participation of hospitals, University, Public Research Bodies (Spanish - OPIs) and private industry in cooperation projects is unquestionably a path that has not yet been sufficiently explored.

We continue with our commitment to Europe, even more so in view of the country's complicated economic situation. We are persuaded that return can be improved even further in the form of participation and coordination by our groups in projects financed by the European Union. The participation of over one half of the CIBERSAM groups in European projects and our centre's coordination in strategic projects in the European Union bear witness to this fact. Being assigned two strategic projects of the Innovative Medicines Initiative 2 (IMI 2) in 2015 is another part of the success that our CIBER and its groups have enjoyed in competitive international calls.

In 2015 we went on taking care of and strengthening our relations with associations of relatives and patients, holding meetings and joint events with many of them and taking part in cooperation with industry and other agents in campaigns against the stigma of disability or for shattering some harmful myths on mental health. Apart from the VII Foro Social, we held the first encounter of researchers into mental health, patients and relatives with the slogan "research into mental health is a common commitment". Our Twitter account @CIBER_SAM, which discloses our activities and main discoveries, already has over 1200 followers and our Facebook page is increasingly active.

One of the key aims of this CIBER has since its beginnings been to train young researchers in the gratifying and stimulating task of research into mental health. In 2015 we gave the third year of our inter-university Master course on introduction to research into Mental Health, in which five of the best universities in the country are taking part. We have continued to arrange the CIBERSAM Intensive

Courses for Updating in Neurosciences for the researchers of our CIBER which have been so highly successful as regards attendance, participation and satisfaction of teachers and pupils. We also encourage the interaction of young researchers inside and outside our own CIBER through our Ideas Laboratory. Some of the ideas that have emerged at this laboratory have already materialised in financed projects and even a patent for our CIBER.

Now more than ever it is time to perform efficient research, intended to improve people's health and quality of life at the lowest possible cost, without jeopardising everything that has been achieved over

the last few years. The only way for us to come out of this situation in a stronger position to tackle the challenges of the present and future is through the common effort of the people best prepared to make it, with the thrust provided by new generations of researchers with talent as members of excellence groups. CIBERSAM is an example of what trained professionals can do when they believe in a common project.

Celso Arango López
Scientific Director of CIBERSAM

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Organization



Organisational Structure

CIBERSAM is one of the eight thematic areas forming the Centro de Investigación Biomédica en Red (CIBER), a Spanish research consortium in the field of biomedical research with great scientific potential, under the Instituto de Salud Carlos III (ISCIII) – Ministry of the Economy and Competitiveness.

The Mental Health area is made up of 23 research groups, keeping its independence as regards scientific management. Its organisational structure is based on the research groups belonging to this and its activity revolves around the Research Programmes and Transversal Programmes, with a coordinator for each Programme belonging to the Steering Committee. Scientific decisions are made by the Scientific Director, advised by said Steering Committee and the External Scientific Committee.

The Steering Committee is presided over by the Scientific Director and made up of the coordinators of the programmes and Managing Director of the CIBER.

The External Scientific Committee is a body for scientific support and advice, made up of relevant personalities in the field of health sciences standing out for their professional or scientific careers in line with the objectives of the thematic area.

The senior administrative bodies of the CIBERSAM are the Governing Body and the Permanent Commission, common for all the CIBER research areas.

The Governing Body is made up of three representatives of the ISCIII and by an institutional representative of each of the centres in the consortium. It is presided over by the Director of the ISCIII and meets every six months.

The Permanent Commission is an executive committee made up of the ISCIII and 8 members of the Governing Body, who can be renewed on an annual basis.

Both the operation and the purposes of the governing, support and advisory bodies are established in the statutes of the CIBER.

Members of the Steering Advisory Committee of CIBERSAM

NAME	POST HELD
Celso Arango	Scientific Director
Víctor Pérez	Coordinator of the Depression Programme
Eduard Vieta	Coordinator of the Bipolar Disorder Programme
Julio Sanjuán	Coordinator of the Schizophrenia Programme and the Databases Platform
Francesc Artigas	Coordinator of the Therapeutic Innovation Programme
Josefina Castro	Coordinator of the Child and Adolescent Psychiatry Programme
Ángel Pazos	Coordinator of Training and Mobility
Ana María González-Pinto	Quality Coordinator
José Javier Meana	Coordinator of the CIBERSAM Platforms and of the Brain Collection Platform
José Manuel Menchón	Coordinator of the Psychosomatic, Anxiety and Impulse Control Disorder Programme
Manuel Sánchez	Manager

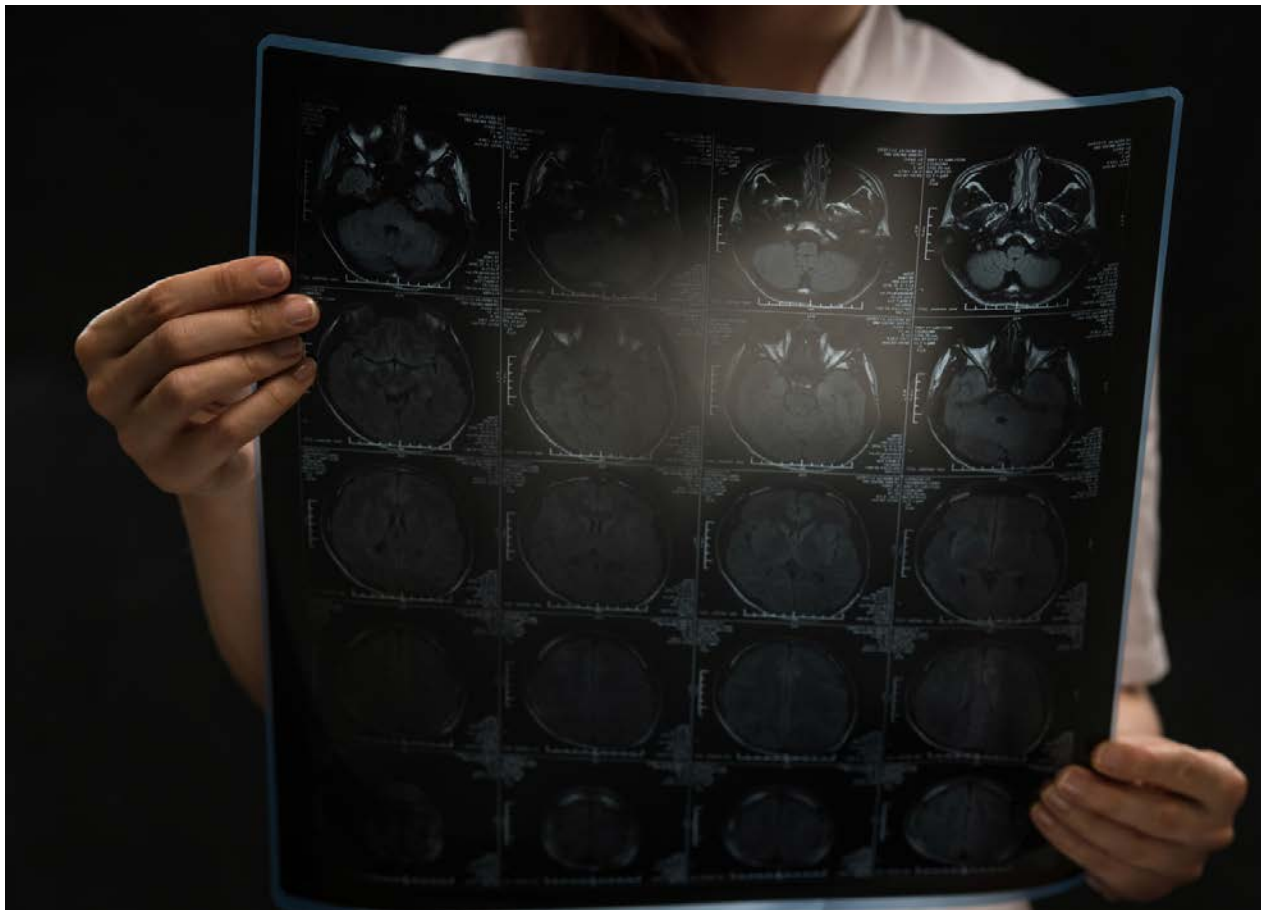
Scientific Director Assistant: Pura Moran

External Advisory Scientific Committee

NAME	INSTITUTION
Jim Van Os	President of the External Scientific Committee. Maastricht University, Holland
Guy Goodwin	Member. Department of Psychiatry, University Of. Oxford, Warneford Hospital, Oxford, United Kingdom
Michael Hamon	Vice-president. Institut National de la Santé et de la Recherche Médicale/ Université Pierre et Marie Curie. Paris, France
María Ron	Secretary. Institute of Neurology, University College London, Queen Square, London, United Kingdom
Marion Leboyer	Member. Groupe Henri Mondor-Albert Chenevier, Pôle de Psychiatrie, Créteil, Paris, France

Technical Unit

See list of personnel: <http://www.cibersam.es/en/about-us/structure/head-office>



Directory of Groups and Institutions

Group leader	Institution	Centre	Prov. Centre
Arango López, Celso	Servicio Madrileño de Salud	Hospital Gregorio Marañón	Madrid
Artigas Pérez, Francesc	Agencia Estatal Consejo Superior de Investigaciones Científicas	Instituto de Investigaciones Biomédicas	Barcelona
Ayuso Mateos, José Luis	Servicio Madrileño de Salud	Hospital Universitario La Princesa	Madrid
Bernardo Arroyo, Miguel	Hospital Clínic de Barcelona	Hospital Clínic de Barcelona	Barcelona
Bobes García, Julio	Universidad de Oviedo	Facultad de Medicina	Asturias
Cervilla Ballesteros, Jorge Antonio	Universidad de Granada	Universidad de Granada	Granada
Crespo Facorro, Benedicto	Instituto de Investigación Marqués de Valdecilla	Hospital Universitario Marqués de Valdecilla	Cantabria
Desco Menéndez, Manuel	Servicio Madrileño de Salud	Hospital Gregorio Marañón	Madrid
Fañanas Saura, Lourdes	Universitat de Barcelona	Facultad de Biología	Barcelona
González-Pinto Arrillaga, Ana	Fundación Vasca de Innovación e Investigación Sanitarias	Hospital Universitario de Alava-Sede Santiago	Alava
Haro Abad, Josep Maria	Fundación para la Investigación y Docencia Sant Joan de Déu	Parc Sanitari Sant Joan de Déu	Barcelona
Leza Cerro, Juan Carlos	Universidad Complutense de Madrid	Facultad de Medicina	Madrid
Mckenna, Peter.J	Fundación para la Investigación y Docencia María Angustias Gimenez (FIDMAG)	Hospital Hermanas Hospitalarias Benito Menni	Barcelona
Meana Martínez, José Javier	Universidad del País Vasco	Facultad de Medicina	Vizcaya
Menchón Magriña, José Manuel	Fundación IDIBELL	Hospital Universitari de Bellvitge	Barcelona
Micó Segura, Juan Antonio	Universidad de Cádiz	Facultad de Medicina	Cádiz
Palomo Álvarez, Tomás	Universidad Complutense de Madrid	Facultad de Medicina	Madrid
Pazos Carro, Ángel Armando	Universidad de Cantabria	Facultad de Medicina	Cantabria
Pérez Sola, Víctor	Consorci Mar Parc Salut de Barcelona	Consorci Mar Parc de Salut de Barcelona	Barcelona
Sáiz Ruiz, Jerónimo	Servicio Madrileño de Salud	Hospital Ramon y Cajal	Madrid
Sanjuán Arias, Julio	Universitat de València	Facultad de Medicina de Valencia	Valencia
Tabarés-Seisdedos, Rafael	Universitat de València	Facultad de Medicina de Valencia	Valencia
Vieta Pascual, Eduard	Hospital Clínic de Barcelona	Hospital Clínic de Barcelona	Barcelona

Budget

INCOME	6.246.674,49
ISCIII NOMINAL GRANT	2.079.190,00
INCOME FROM NEW GROUPS	120.000,00
COMPETITIVE INCOME	827.184,92
OWN FUNDS	3.220.299,57

EXPENDITURE	3.584.226,18
GROUP	2.133.153,10
COORDINATION	18.016,91
TRAINING	51.903,71
TECHNICAL OFFICE	168.426,00
SCIENTIFIC MANAGEMENT	29.179,10
PLATFORMS	65.949,87
SCIENTIFIC SECRETARIAT	87.570,54
INTRAMURAL PROJECTS	44.360,48
COMPETITIVE PROJECTS	985.666,47

Personnel

Personnel contracted during the year as of 31st December, separated by categories:

Category	Permanent	Temporary	Works & services	Postdoctoral	Main Total
Diploma holder	1	-	4	-	5
Doctor	5	-	8	5	18
Graduate	6	2	28	-	36
Technical staff	3	-	8	-	11
Total	15	2	48	5	70

Significant activities

Projects

The following projects were active in 2015:

NATIONAL PROJECTS

Financing agency: Instituto de Salud Carlos III

- Neurotoxicity of depressive illness. Longitudinal study of neuroimaging, neurocognition and biological markers.
- Comparative study of the evolution of cognitive performance in relation with nicotine in patients with schizophrenia.
- Effects of functional rehabilitation on the neuroplasticity of bipolar patients.
- 10PAFIP neuroimaging: Long-term (10-year) longitudinal study of cerebral structural changes in patients with psychosis in the schizophrenia spectrum.
- Monitoring symptoms and signs in patients with first psychotic or emotional episodes by means of a mobile telephone application.
- Neuropsychological functioning and inflammatory profile in suicidal behaviour.
- Implication of variants of the DDR1 gene in the integrity of myelin and the cognitive processing speed in patients with euthymic phase bipolar disorder.

Financing Agency: Ministry of the Economy and Competitiveness:

- A route map for research into mental health and well-being in Europe: ROAMER.

We should stress CIBERSAM's participation in one of the CIBER interdisciplinary excellence projects financed by the AES, intended for studying the metabolic syndrome along with obesity and led by CIBEREHD.

INTERNATIONAL EU PROJECTS

- Suicidality: Treatment Occurring in Paediatrics (STOP).
- A Roadmap for Mental Health Research in Europe (ROAMER).
- Mental Health Training through Research Network in Europe (MARATONE).
- Translating neuroimaging findings from research into clinical practice (PSYCAN).
- Refactoring Parallel Heterogeneous Resource-

Aware Applications - a Software Engineering Approach (REPHRASE).

OTHER INTERNATIONAL PROJECTS

- Efficacy of an Innovative E-neurocognitive Module as an Adjunct to Functional Remediation for Bipolar Disorder.
- Genomic risk and resilience in 22Q11 deletion syndrome: a window into the genetic architecture of mental disorders.
- Trehalose as add-on therapy in bipolar depression.

Transfer

One of the CIBER's main aims is the transfer of research results into clinical practice, and one of the best tools existing for this purpose is technology transfer. The Unit managing this at the CIBER sets out to act as a bridge between our researchers and other agents in the Science and Technology System (companies, business associations, other research organisations, etc.) to make cooperation with these bodies more effective. This means that research results will be efficiently developed and can succeed in being applied. Work is done in several lines to this end:

- **Training in innovation management and continuous contact with our researchers to monitor their results.**

In this respect, last year the first general event of the CIBER in training on technology transfer and innovation was held, on 26th February 2015 and where national experts took part sharing their knowledge in matters such as industrial property, business creation or publication in open access, etc.

- **Protection of their research and management of cooperation with other agents, as vouched for by applications for patents and signing licensing contracts, amongst other agreements.**

Hence, over 20 new patent applications were made and seven licensing agreements were signed at the CIBER in 2015.

- **The presentation of research results and technological capacities of our groups.**

Amongst many other measures and merely as an example, in 2015 several projects were presented at the 2nd Forum for Innovation in In Vitro Diagnosis – FENIN in Barcelona (December 2015).

- **Support for technology-based companies stemming from CIBER groups.**

The CIBER has since 2014 been taking part in Epidisease (<http://www.epidisease.com/es/>) which it has continued to supported in 2015.

- **Other activities connected with innovation, public-private cooperation and industrial and intellectual property.**

For example, the registration of the CIBER'S "community trademark" or the steps have been taken for registering intellectual property rights for audiovisual projects, among many others.

- **In this period CIBERSAM has applied for two priority patents.**

Dissemination activities

In 2015 CIBER's Communication Department carried out different measures for dissemination and disclosure in order to improve the Centre's visibility, as well as publicising the research work done by the groups in its eight thematic areas. We now detail the 2015 milestones in CIBERSAM Communication.

CIBERSAM IN THE MEDIA:

In 2015 fifty CIBER press releases were issued, ten from the CIBERSAM and four in cooperation between several CIBER areas.

Date	Thematic Area	Title
January	SEVERAL CIBER	El CIBER pone en marcha tres proyectos de excelencia interdisciplinares financiados con casi 2 millones de euros por la AES
February	SEVERAL CIBER	Investigadores del CIBER identifican diversos factores de riesgo de sufrir cáncer
November	SEVERAL CIBER	El CIBER acerca su investigación al público de la mano de la improvisación teatral en #ImproCiencia
December	SEVERAL CIBER	El CIBER incorpora 11 nuevos grupos en diversas áreas de investigación
January	CIBERSAM	Variaciones genéticas se asocian a cambios en la estructura del cerebro humano
March	CIBERSAM	CIBERSAM asesora en la resolución del Consejo de Europa a favor del tratamiento integral de los niños con trastornos de la atención
May	CIBERSAM	El uso de móviles puede servir para la prevención de recaídas de afectados por trastorno bipolar
June	CIBERSAM	CIBERSAM presenta dos guías sobre psicosis en infancia y adolescencia destinadas a afectados, familiares
September	CIBERSAM	Un proyecto europeo propone 6 prioridades de investigación para reducir la carga de la salud mental
September	CIBERSAM	Reclaman una integración de las personas con trastornos mentales "sin estigmas ni etiquetas"
November	CIBERSAM	Diseñan una nueva aplicación para facilitar el seguimiento y mejorar la adherencia al tratamiento de pacientes
November	CIBERSAM	La rehabilitación funcional mejora la autonomía y el funcionamiento general de pacientes con trastorno bipolar
December	CIBERSAM	"La investigación en salud mental solo es posible con la colaboración de los pacientes"
December	CIBERSAM	El tratamiento preventivo de la psicosis ha de mantenerse aunque haya mejoría

1636 appearances in the media were registered in this period:

CIBERSAM	NEWS	AUDIENCE
Internet	1.459	163.779.400
Press	177	15.640.000
Total	1.636	179.419.400

NEW WEB PAGE OF THE CIBERSAM:

In November 2015 the new web page of the CIBERSAM was launched in order to have a common structure, image and contents manager for all the CIBER areas.

www.cibersam.es/en/

CIBER NEWSLETTER

Over this period five CIBER newsletters were issued, including relevant contents on both the CIBERSAM and the other thematic areas. Digital newsletters were sent to around 4000 subscribers.

<http://www.ciberisciii.es/comunicacion/boletines>

SOCIAL NETWORKS

Main indicators of CIBERSAM's presence on Twitter:

UPDATES		FOLLOWERS		FOLLOWING		KLOUT (influence, values between 1 and 100)	
JANUARY	DECEMBER	JANUARY	DECEMBER	JANUARY	DECEMBER	JANUARY	DECEMBER
448	871	607	1108	354	366	45	47

CIBERSAM ANNUAL REPORT

The Communication area of the CIBER in cooperation with the CIBERSAM coordinated the content of the CIBERSAM report 2014 in Spanish/English, drawing up and disseminating 2 reports in interactive format (Flipbook) and PDF. These were distributed over the web page and Twitter account:

<http://www.ciberisciii.es/en/press/annual-report>

CIBER #IMPROCIENCIA SCIENCE WEEK

The #ImproCiencia dissemination event, arranged by the CIBER in the framework of the Madrid Science Week 2015, took place on 3rd November at the Nave 73 rooms in Madrid. The event combined science and theatre improvisation to give a light-hearted explanation of the biomedical research done by the CIBER in its eight thematic areas.

Games and improvisations were alternated with live connections with CIBER researchers during the event. Luzma García, the head of the CIBER Technology Transfer representing CIBERSAM, explained the PIENSA guide for teenagers and relatives wishing to confront psychosis.

Scientific Production

The graphic development of CIBERSAM publications can be seen from the following graphs in which the data from 2010 to 2015 is analysed.

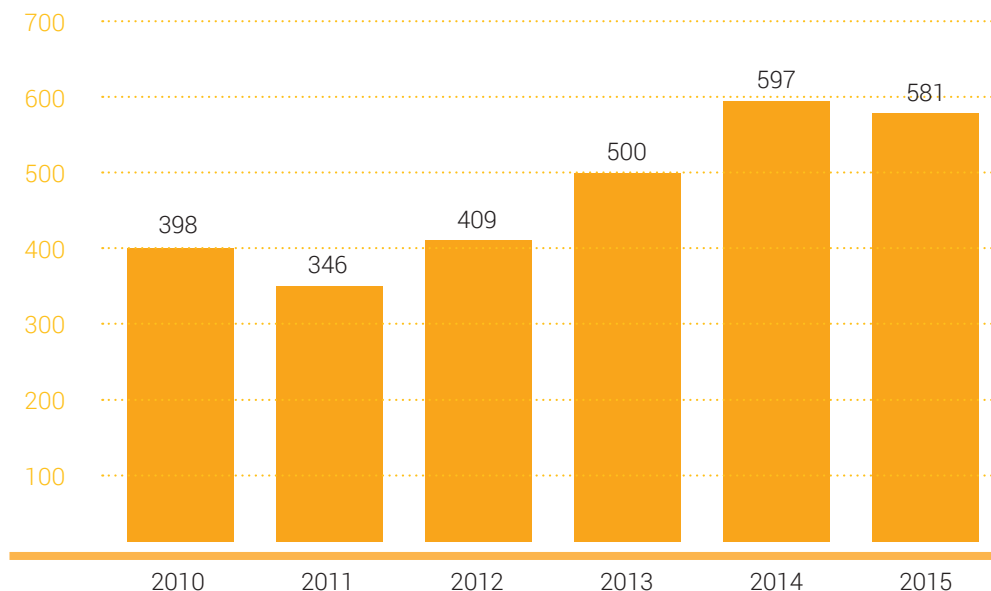
The publications per group for this year are also analysed, as well as interCIBER and intraCIBER cooperation.

Publications:

No. of affiliated publications 2015

Total publications	581
First quartile	355
First decile	145

EVOLUTION OF CIBERSAM PUBLICATIONS CIBERSAM 2010-2015



MOST RELEVANT CIBERSAM PUBLICATIONS IN 2015 ACCORDING TO IMPACT FACTOR

Publication	Impact Factor
GRANDE I, BERK M, BIRMAHER B, VIETA E. Bipolar disorder. Lancet. 2016 Apr 9;387(10027):1561-72. doi: 10.1016/S0140-6736(15)00241-X.	45.217
GBD 2013 RISK FACTORS COLLABORATORS, FOROUZANFAR MH, ALEXANDER L, ANDERSON HR, BACHMAN VF, BIRYUKOV S, BRAUER M ET AL. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015 Dec 5; 386(10010):2287-323.	45.217
GBD 2013 DALYS AND HALE COLLABORATORS, MURRAY CJ, BARBER RM, FOREMAN KJ, ABBASOGLU OZGOREN A, ABD-ALLAH F, ABERA SF ET AL. Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990-2013: quantifying the epidemiological transition. Lancet. 2015 Nov 28;386(10009):2145-91.	45.217

Publication

Impact Factor

GLOBAL BURDEN OF DISEASE STUDY 2013 COLLABORATORS. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015 Aug 22;386(9995):743-800.	45.217
WASSERMAN D, HOVEN CW, WASSERMAN C, WALL M, EISENBERG R, HADLACZKY G, ET AL. School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. Lancet. 2015 Apr 18;385(9977):1536-44.	45.217
GBD 2013 MORTALITY AND CAUSES OF DEATH COLLABORATORS. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015 Jan 10; 385(9963):117-71.	45.217
HIBAR DP, STEIN JL, RENTERIA ME, ARIAS-VASQUEZ A, DESRIVIÈRES S, JAHANSHAD N, ET AL. Alzheimer's Disease Neuroimaging Initiative; CHARGE Consortium; EPIGEN; IMAGEN;SYS, Martin NG, Wright MJ, Schumann G, Franke B, Thompson PM, Medland SE. Common genetic variants influence human subcortical brain structures. Nature. 2015 Apr 9;520(7546):224-9.	41.456
BULIK-SULLIVAN BK, LOH PR, FINUCANE HK, RIPKE S, YANG J; Schizophrenia Working Group of the Psychiatric Genomics Consortium, Patterson N, Daly MJ, Price AL, Neale BM. LD Score regression distinguishes confounding from polygenicity in genome-wide association studies. Nat Genet. 2015 Mar;47(3):291-5.	29.352
HERRERO A, PINTO A, COLÓN-BOLEA P, CASAR B, JONES M, AGUDO-IBÁÑEZ L ET AL. Small Molecule Inhibition of ERK Dimerization Prevents Tumorigenesis by RAS-ERK Pathway. Oncogenes. Cancer Cell. 2015 Aug 10;28(2):170-82.	23.523
WU YT, FRATIGLIONI L, MATTHEWS FE, LOBO A, BRETHER MM, SKOOG I, BRAYNE C. Dementia in western Europe: epidemiological evidence and implications for policy making. Lancet Neurol. 2016 Jan; 15(1):116-24.	21.896

CIBERSAM Publications per group 2015

Group	PI	Total no. pub.	Q1	D1
G01	Arango López	43	37	25
G02	Artigas Pérez	10	10	5
G03	Ayuso Mateos	20	14	2
G04	Bernardo Arroyo	58	41	17
G05	Bobes García	28	13	4
G06	Cervilla Ballesteros	18	11	7
G07	Desco Martínez	17	12	6
G08	Fañanás Saura	42	29	10
G10	González-Pinto Arrillaga	41	29	16
G11	Haro Abad	65	46	14
G12	Leza Cerro	13	8	4
G15	McKenna	29	23	14
G16	Meana Martínez	15	12	4
G17	Menchón Magriñá	41	21	8
G18	Micó Segura	9	8	2
G19	Palomo Álvarez	44	22	9
G20	Pazos Carro	5	4	4
G21	Pérez Sola	51	27	8

CIBERSAM Publications per group 2015

Group	PI	Total no. pub.	Q1	D1
G22	Sáiz Ruiz	22	14	6
G23	Sanjuán Arias	20	13	3
G24	Tabarés Seisdedos	27	19	10
G25	Vieta Pascual	57	48	20
G26	Crespo Facorro	22	15	6
G27	Casas Brugué	39	16	6
G28	Vilella Cuadrada	18	11	0

COOPERATION:

- No. of intraCIBER publications 2015: **166** (28,57%)
- No. of interCIBER publications 2015: **93** (16,00%)

Patents

APPLIED FOR:

- Name of the proprietor or applicant of the patent: Juan Antonio Micó Segura (PI SAMG18), Esther Berrocoso Domínguez (SAMG18), Lucía Martín Banderas (UCA) and Mercedes Fernández Arévalo (UCA).
Title of the patent: Procedure for obtaining and pharmaceutical composition of polymeric nanoparticles for treating neuropathic pain caused by peripheral nervous compression.
Application no.: P201500129. Date of application: 09/02/2015.
Body: CIBERSAM and Universidad de Cádiz.
- Name of the proprietor or applicant of the patent: González-Pinto Arrillaga, Ana (PI SAMG10); Palomo Álvarez, Tomas (PI SAMG19); Arango López, Celso (PI SAMG01); Bobes García, Julio (PI SAMG05); Micó Segura, Juan Antonio (PI SAMG18); Leza Cerro, Juan Carlos (PI SAMG12); Bernardo Arroyo, Miguel (PI SAMG04); and Lobo Satué, Antonio (PI SAMG13). Title of the patent: In vitro model and kit for prognosis or prediction of the response to treatment with anti-psychotic agents by patients who have undergone a first psychotic episode.
Application no.: P201530918. Application date: 26/06/2015.

Clinical Guidelines:

- ATraPA Guide: Acciones para el Tratamiento de la Personalidad en la Adolescencia.
- PIENSA: Guía para adolescentes y familias que quieren entender y afrontar la psicosis.
- Guía clínica y terapéutica para primeros episodios psicóticos en la infancia y la adolescencia.
- ROAMER: A Roadmap for Mental Health and Well-being Research in Europe. FINAL ROADMAP.
- Protocol per al maneig del Trastorn per Dèficit D'atenció amb Hiperactivitat (TDAH) infantojuvenil en el Sistema Sanitari Català.
- Terapia psicológica integral para primeros episodios psicóticos.
- Terapia psicológica integral para el insomnio: guía para el terapeuta y el paciente.
- Spanish consensus on the physical health of patients with depressive disorders.
- International Society for Nutritional Psychiatry Research consensus position statement: nutritional medicine in modern psychiatry.
- Guías clínicas para el Sistema de Salud: Manual de Psicoeducación para el trabajo con familiares de pacientes con Bipolar Disorder.
- Plan de Salud Mental de Cantabria 2015-2019.

3

Scientific Programmes

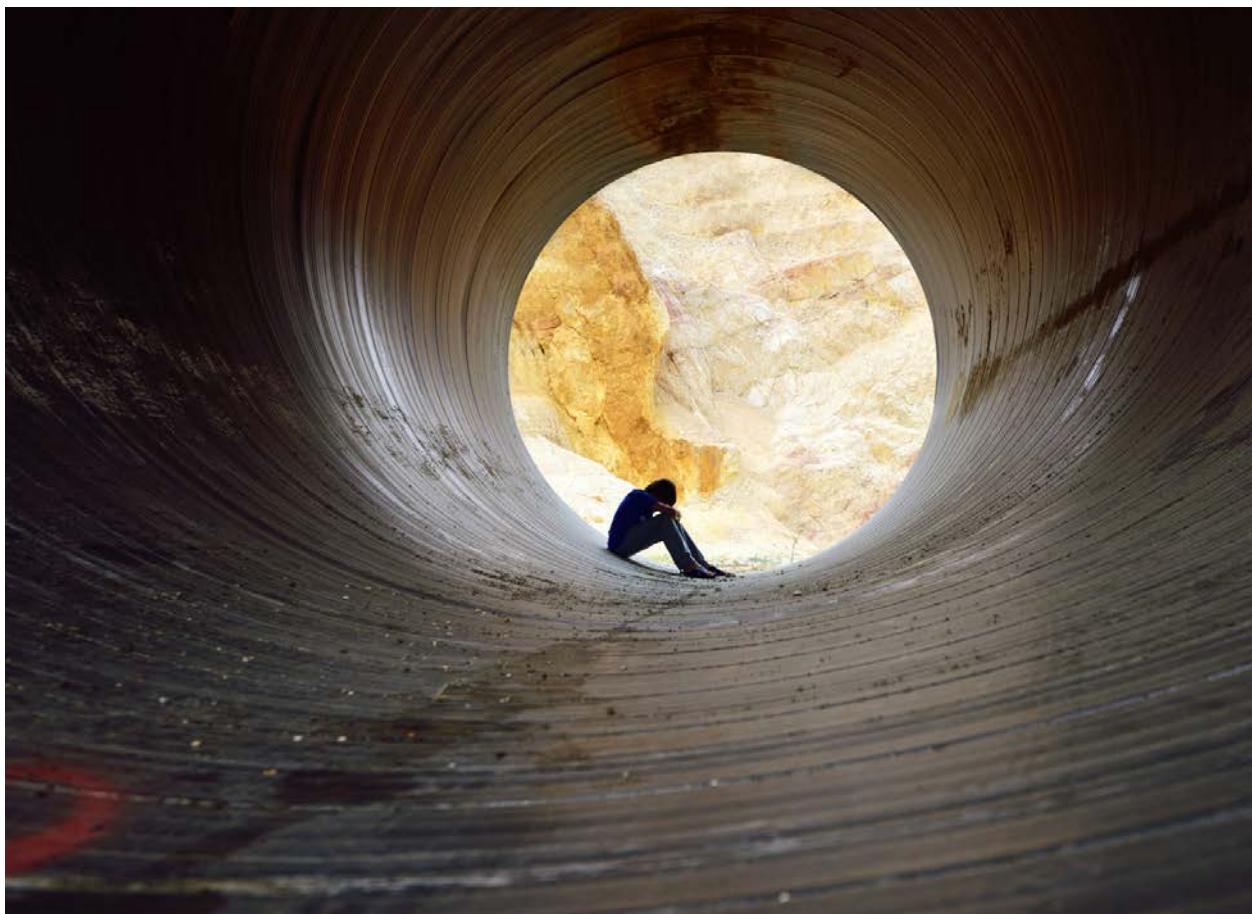


Depression

COORDINATOR: DR. VÍCTOR PÉREZ SOLA (G21 – Hospital de la Santa Creu i Sant Pau)

The basic and clinical lines of research carried out by the groups forming the Depression Programme led to obtaining relevant results in 2015 which materialised in the following achievements:

- Anti-depressant effectiveness of intranasal delivery of interference RNA (siRNA) for silencing the serotonin transporter.
- Potential of cannabidiol as a fast-acting antidepressant therapy: neurochemical, molecular and cellular study in animals.
- Evaluation of olfactory bulbectomy as an animal model of depression.
- Characterisation of the antidepressant action mechanism of Deep Brain Stimulation: the implication of the AMPA receptor.
- Study of peripheral markers of oxidative stress and inflammation in Major Depression Disorder.
- Impact of psychosocial difficulties in patients with depression: PARADISE study.
- Anti-depressant effectiveness of DBS: first randomised clinical assay of Deep Brain Stimulation in severe treatment-resistant depression.
- Development of a new technique for temporal determination of cortisol in hair as a biological marker of stress and depression.



Schizophrenia

COORDINATOR: DR. JULIO SANJUÁN ARIAS (G23 – Facultad Medicina. Universitat de València)

The Schizophrenia programme covers the largest number of research groups in the CIBERSAM (12) and has the main purpose of multidisciplinary study of this Severe Mental Disorder. Although research into biological bases has been prevalent, this progress needs to be combined with psycho-social intervention programmes and requires this research to be perceived by users as an improvement in the quality of the care given.

This extensive participation, combined with the Common Database and different collaborative studies, makes it the programme with the largest clinical and genetic database. Some major cooperative projects have been carried out on the development of the first psychotic episodes. In 2015 175 studies were published, raising the previous year's production by 10% and the number of citations went from 1150 to 1720 in just one year. This reflects the qualitative increase in the type of publications in this programme.

Lines of research:

- Continuing the study of follow-up and predictive variables in first psychotic episodes.
- In 2015 work went on with the publication of the results of the PEPs study on first psychotic episodes (stressing the first publication of neuroimaging in Schizophrenia Bulletin, 1st Decile), with the Second PEPs project, both coordinated by Dr. Bernardo and with the publications of the European EU-GEI project coordinated in Spain by Dr. Arango.
- Studying the possible neurobiological markers (genetic, immunological and neuroimaging) of the different symptomatological phenotypes of schizophrenia. We took part in an important publication on how the genes involved in GWAS bear a relation with immunological mechanisms (Nature Neuroscience 18, 2, 2015).
- Studying the role of schizotypal personality with regard to the prognosis and evolution of these patients.
- Studying the predictive variables of response to different pharmacological treatments.

Different basic groups of the CIBERSAM have published and proposed new models for prediction of response to antipsychotics.

- Researching into the efficiency and effectiveness of psychotherapeutic treatments in combination with the customary pharmacological treatments in schizophrenia. Several European Projects have been got under way with the participation of CIBERSAM groups (Dr. Arango, Dr. Crespo-Facorro, Dr. Bernardo) with the main aim of optimising pharmacological and psychosocial treatment.
- Studying the repercussions of schizophrenia in the state of health, psychosocial adjustment, quality of life, levels of individuals' disability and in the patterns of use of services by these patients and their influence on comorbidity.

As well as the participation in over 40 projects connected with psychosis in 2015 the following achievements should be highlighted:

- Participation in European projects such as OPTi-MiSE, EU-GEI, EULAST.
- The project Understanding Obesity, Metabolic Syndrome Type 2 Diabetes: a multidisciplinary approach, in the call arranged by the MINECO and ISCIII, integrated excellence projects 2014.
- A patent for a new method for monitoring antipsychotic treatment has been presented (Group G26).
- Preparation of different clinical guidelines: Terapia Psicológica Integral para Primeros Episodios Psicóticos (G10), PIENSA Guía para adolescentes y familiares que quieren entender y afrontar la psicosis (G01), Guía Clínica terapéutica para primeros episodios psicóticos en la infancia y la adolescencia (G01).
- Participation in the plan for mental health and in particular for creation of units for first psychotic episodes in the Comunidad Valenciana (G23).
- Reedition of the research meeting on Psychosis including the participation of patients' relatives.

Bipolar Disorder

COORDINATOR: DR. EDUARD VIETA (G25 – Hospital Clínic de Barcelona)

As part of the most relevant results of the groups forming the programme, we should stress the 32 articles in the first decile. The findings of these studies have been published in journals of the highest prestige such as The Lancet, the American Journal of Psychiatry, British Journal of Psychiatry, European Neuropsychopharmacology, International Journal of Neuropsychopharmacology, Psychological Medicine, Schizophrenia Bulletin and Acta Psychiatrica Scandinavica, amongst others.

The bipolar disorder programme has a high degree of internationalisation and scientific productivity. In 2015 we should stress the epidemiological cooperative work done between CIBERSAM groups and other CIBERS, as well as national and international collaboration.

Apart from this, the groups in the bipolar programme have been particularly active in getting new projects under way, as well as finding new funding. In 2015 competitive financing was obtained for 26 projects, both from public bodies (MINECO- Instituto de Salud Carlos III, Unión Europea, Comunidad de Madrid, Generalitat de Catalunya, Generalitat Valenciana, Gobierno Vasco) and from other national institutions (UAM-Banco Santander with the United States) and international bodies (NARSAD, The Stanley Medical Research Institute).

Some of the awards and honours received by members of the programme are:

- Appointment as "Honoris Causa" Doctor by the Universitat de València (UV), Dr. Eduard Vieta.
- Reference Researcher Award, Sociedad Española de Psiquiatría Biológica (SEPB), Dr. Antoni Benabarre.
- Emerging Researcher Award, Sociedad Española de Psiquiatría Biológica (SEPB), Dr. Íria Grande.
- Extraordinary award for doctoral thesis 2015, Dr. Íria Grande.
- 1st Award for best international article Jornadas de investigación 2015 HOSPITAL UNIVERSITARIO ARABA: Zorrilla I., Aguado J., Haro J.M., Barbeito S., López Zurbano S., Ortiz A., López P., González-Pinto A. Cannabis and bipolar disorder: Does quitting cannabis use during manic/mixed epi-

sode improve clinical/functional outcomes? Acta Psychiatr Scand. 2015 Feb;131(2):100-10.

- Eduard Vieta appears in the list of biomedical field researchers most widely cited in scientific publications (Highly Cited Researchers 2015), drawn up by the international agency Thomson Reuters, 2015.

Some of the scientific achievements obtained by the different groups in the programme are:

- Characterisation of the functional brain changes in the different phases of bipolar disorder.
- As members of the Global Burden of Disease network we have taken part in the publication of the Global Burden of Disease study 2013, in The Lancet.
- Proving the predictive value of the cognitive reserve in bipolar disorder.
- Preparation of clinical recommendations for work with relatives of patients with bipolar disorder.
- Preparation of a document on bipolar disorder which stresses the importance of tackling the diseases translationally.
- A collaborative study with the NASA which has enabled making progress in knowledge of the mechanisms involved in the age of starting with bipolar disorder.
- Functional rehabilitation improves the autonomy and general function of patients with bipolar disorder.
- Identification of risk/protection factors involved in first psychotic episodes, related with BDNF and TrkB receptors.
- Identification of new biomarkers, therapeutic targets and innovative action mechanisms for treating bipolar disorder.
- Finally, as members of the Cognitive Decline Group of the European Innovation Partnership for Active and Healthy Ageing (EIPAH) we take an active part in defining a clinically useful position on Mild Cognitive Decline.

Therapeutic Innovation

COORDINATOR: DR. FRANCESC ARTIGAS PÉREZ (G02 – Agencia Estatal Consejo Superior de Investigaciones Científicas)

Some of the most relevant results of the groups forming the programme deserving mention are the application for / registration of six patents (three of these with the CIBER among the applying institutions) and the publication of over forty articles in 1st decile journals. Some significant texts are publications in journals such as Lancet, Nature, Cancer Cell, Nature Genetics and Molecular Psychiatry. Different articles have also been published in other leading journals in the field, such as American Journal of Psychiatry, Pharmacology & Therapeutics, Cerebral Cortex, Neuroscience and Biobehavioral Reviews y Schizophrenia Bulletin. A large percentage of these publications are multi-centre, due to the existence of intra-CIBER cooperation (between CIBERSAM and other CIBER areas) as well as national and international cooperation.

Apart from all this the groups in the programme have been particularly active in fundraising, having obtained 14 competitive projects from public bodies (MINECO- PI14/00815, PI14/00860, PI13/01102, PI14/00723, PI14/00286, PIE15/00079, PIE14/00031, PI14/00639, PI14/00918 and DTS14/001) and from different national- (Alicia Koplowitz, FIPSE, Mapfre) and international foundations (The Stanley Medical Research Institute).

Some of the prizes and awards obtained by members of the group are:

- ECNP Neuropsychopharmacology Award, European College of Neuropsychopharmacology, Dr. Francesc Artigas (first Spanish scientist to receive this award).
- Appointment as "Honoris Causa" doctor by the Universitat de València (UV), Dr. Eduard Vieta.
- Admittance as Full Academy Member of the Real Academia de Medicina de Cantabria, Dr. Benedicto Crespo Facorro.
- Reference Researcher Award, Sociedad Española de Psiquiatría Biológica (SEPB), Dr. Antoni Benabarre.
- Emerging Researcher Award, Sociedad Española de Psiquiatría Biológica (SEPB), Dr. Íria Grande.

- 2nd Mental Health Award of the Centro Hospitalario Padre Menni in Cantabria for the programme
- and research team of First Episodes of Psychosis in Cantabria (PAFIP) directed by Dr. Benedicto Crespo Facorro.
- Award of the Asociación Cántabra para la Patología Dual y otras Alteraciones Mentales (PADU- CAN) for the professional career of Dr. Benedicto Crespo Facorro and the PAFIP health-care-research team that he directs.

Some of the scientific achievements made by different groups in the programme are:

- Implication of AMPA receptors in the molecular mechanisms involved in the antidepressant therapeutic response to Deep Brain Stimulation (DBS).
- Identification of risk/protection factors involved in first psychotic episodes related with BDNF and TrkB receptors.
- Identification of the neurobiological causes underlying the appearance of anxiety as a result of suffering chronic pain.
- Establishment of fast-acting antidepressant effects by the use of siRNA targeting the 5-HT transporter.
- Development of a new model of screening of antipsychotics based on slow cortical oscillations.
- Identification of induced neurobiological effects in a model of schizophrenia by chronic phencyclidine.
- Preparation of clinical recommendations for work with relatives of patients with bipolar disorder.
- Functional rehabilitation improves the autonomy and general function of patients with bipolar disorder.
- Proving the predictive value of the cognitive reserve in bipolar disorder.
- Preparation of a document on bipolar disorder which highlights the importance of tackling the disease translationally.

— Mental Disorders of the Child and Adolescent —

COORDINATOR: DRA. JOSEFINA CASTRO FORNIELES (G04 - Hospital Clínic de Barcelona)

The Child and Adolescent Mental Disorder programme was created in 2010 and is made up of five groups of the CIBERSAM (G01, G04, G07, G08, G24). The main aim of the programme is to study the mental disorders starting in childhood and adolescence.

In 2015 the objectives set in our strategic plan 2014-2016 have been met. There have thus been 65 publications connected with the mental health of children and adolescents with 215 points in the impact factor. Over 75% of these publications have been made in first quartile journals and almost one third of them are in the first decile. Some of the journals in which the main results of our programme have been published are: Schizophrenia Bulletin, Journal of the American Academy of Child and Adolescent Psychiatry, BMC Medicine, Journal of Child Psychology and Psychiatry and Allied Disciplines, The Cochrane database of systematic reviews, or Human Brain Mapping. The programme facilitates and strengthens cooperation between the different groups and, thanks to this, over half are cooperative publications. There has also been an increase in the number of citations of our publications as compared with 2014, which infers an increase in the visibility of the results stemming from our programme.

As regards research projects, 32 projects with public and private funding are linked with the area of mental disorders of the child and adolescent, which are investigated in all the lines in our programme: psychotic disorders, eating disorders, obsessive-compulsive disorder, autism spectrum disorder, effectiveness and safety of psychotropic drugs and other treatments, development and validation of evaluation instruments, study of immune alterations in different psychiatric disorders and behavioural disorders. We should also point out that throughout 2015 there has been an increase in the number of clinical guidelines published addressing the child and adolescent population. Some more prominent ones of these are the ones concerning the treatment and handling of attention deficit disorder, psychotic disorders or personality disorders.



— Psychosomatic, Anxiety and Impulse Control Disorders

COORDINATOR: DR. JOSÉ MANUEL MENCHÓN MAGRIÑA (G17 - Fundación IDIBELL. Hospital Universitari de Bellvitge)

Several groups have registered different patents:

1) Prediction of response to treatment with antipsychotic agents in first psychotic episodes; 2) Procedure for obtaining and pharmaceutical composition of polymeric nanoparticles for treatment of neuropathic pain produced by peripheral nervous compression.

In the field of cognitive impairment and dementia, the first study using DSM-5 criteria for studying slight cognitive impairment in the population and rates of conversion into dementia has been published. The first scale of multidimensional stage classification of dementias has also appeared. Another finding published with international groups has been the one suggesting a reduction in the prevalence and incidence of dementia and Alzheimer's disease in several European countries. The participation in an international consortium has enabled transnationally comparing the frequency of slight cognitive impairment after standardising criteria.

A project has been granted involving 8 groups about the relationship of the microbiota, inflammation and depression. Apart from this, a study suggests that the mechanisms of neuroinflammation could be studied through the "Optical Coherence Tomogram" (OCT) technique, which seeks "window to the brain" strategies.

With regard to suicidal conduct, we have participated in projects with extensive international cooperation, such as the WORECA (World Research Consortium for Suicide) Project and other studies of genetic markers, risk prediction and new models for understanding the problem.

As regards the obsessive-compulsive disorder, financing has been obtained for a project on genetic and epigenetic mechanisms for developing and validating a cellular model by reprogramming. Several groups are taking part in preparing a Clinical Guide on pharmacological treatment of this pathology. Apart from this an extensive meta-analysis has been published with participation of the main international groups on the effectiveness of Deep Brain Stimulation (DBS) in obsessive-compulsive disorders.

Other projects have been carried out in deep brain stimulation, both as regards a basic level with studies intended to clarify molecular mechanisms involved in the antidepressant therapeutic response of deep brain stimulation (particularly AMPA receptors), and on the clinical study level, completing an international clinical multi-centre assay of DBS in obsessive-compulsive disorder.

In chronic pain the neurobiological causes underlying the appearance of anxiety have been identified (with a direct implication of the Locus Coeruleus and CRF, through ERK1/2 signalling) and the potential relationship of chronic pain with depression and cognitive alterations by finding a reduction of hippocampal neurogenesis in experimental chronic pain. A nationwide cooperative study has managed to establish the frequency of different mental disorders associated with chronic pain in the Spanish population.

We finally continue to participate in European and international consortiums studying the burden of disease as well as the priority lines of research into mental health.

4

Transversal Programmes



European Programmes and International Relations

COORDINATOR: DR. JOSÉ LUIS AYUSO MATEOS (G03 – Hospital Universitario La Princesa)

Main achievements in 2015

- The first projects in the Horizon 2020 programme and in the Third European Commission Health Programme awarded in the calls published in 2014 have started to be implemented.
- 256 articles published in cooperation with international teams and researchers (44% of the total number of 581 articles published in 2015 with CIBERSAM affiliation).
- Presentation of the conclusions of the “Roadmap for Mental Health Research in Europe” project at the European Parliament, in January 2015.
 - ROAMER, coordinated by Dr. José María Haro and with the participation of several CIBERSAM groups.
- Publication in Lancet Psychiatry of the main results of the “Roadmap for Mental Health Research in Europe” – ROAMER.
- Recruitment of international researchers for holding stays and writing doctoral theses with a European mention through the Marie Curie MARATONE network, which CIBERSAM is a member of.
- Participation of CIBERSAM members in advisory committees and assessment committees of the HORIZON 2020 programme.
- The final report of the STOP project - Suicidality: Treatment Occurring in Paediatrics was published. G01, G04 (Principal Investigators, PIs, Arango and Bernardo).
- The final report of the European report on centres of excellence in bipolar disorder was published: Final Report Summary - ENBREC (European Network of Bipolar Research Expert Centres) G25 – Vieta.

ACTIVE EUROPEAN/INTERNATIONAL PROJECTS MANAGED BY CIBERSAM GROUPS IN 2015:

- MARATONE | Mental Health Training through Research Network in Europe. G03, G11 (PIs Ayuso and Haro).
- PSYSCAN| Translating neuroimaging findings from research into clinical practice G01, G26 (PIs Arango and Crespo).
- RFA-MH-120 | Genomic Risk and Resilience in 22q11 Deletion Syndrome: A Window into the Genetic Architecture of Mental Disorders. (Collaborative R01-NIH). G01 (Arango).

EUROPEAN PROJECTS MANAGED BY CIBER GRANTED IN 2015:

- IMI2 – PRISM – Psychiatric Ratings using intermediate Stratified Markers: providing quantitative biological measures to facilitate the discovery and development of new treatments for social and cognitive deficits in Alzheimer Disease, Schizophrenia, and Major Depression – G01 (PI Arango).
- IMI2 – RADAR-CNS – Remote Assessment of disease and Relapse in Central Nervous System Disorders – G11 (PI Haro).
- Predicting Response to Depression Treatment obtained in the H2020-SME- INST-1-2014 call (PI Pérez).

— Quality Programme and Internal Assessment

COORDINATOR: DR. ANA GONZÁLEZ-PINTO ARRILLAGA (G10 - Fundación Vasca de Innovación e Investigación Sanitarias)

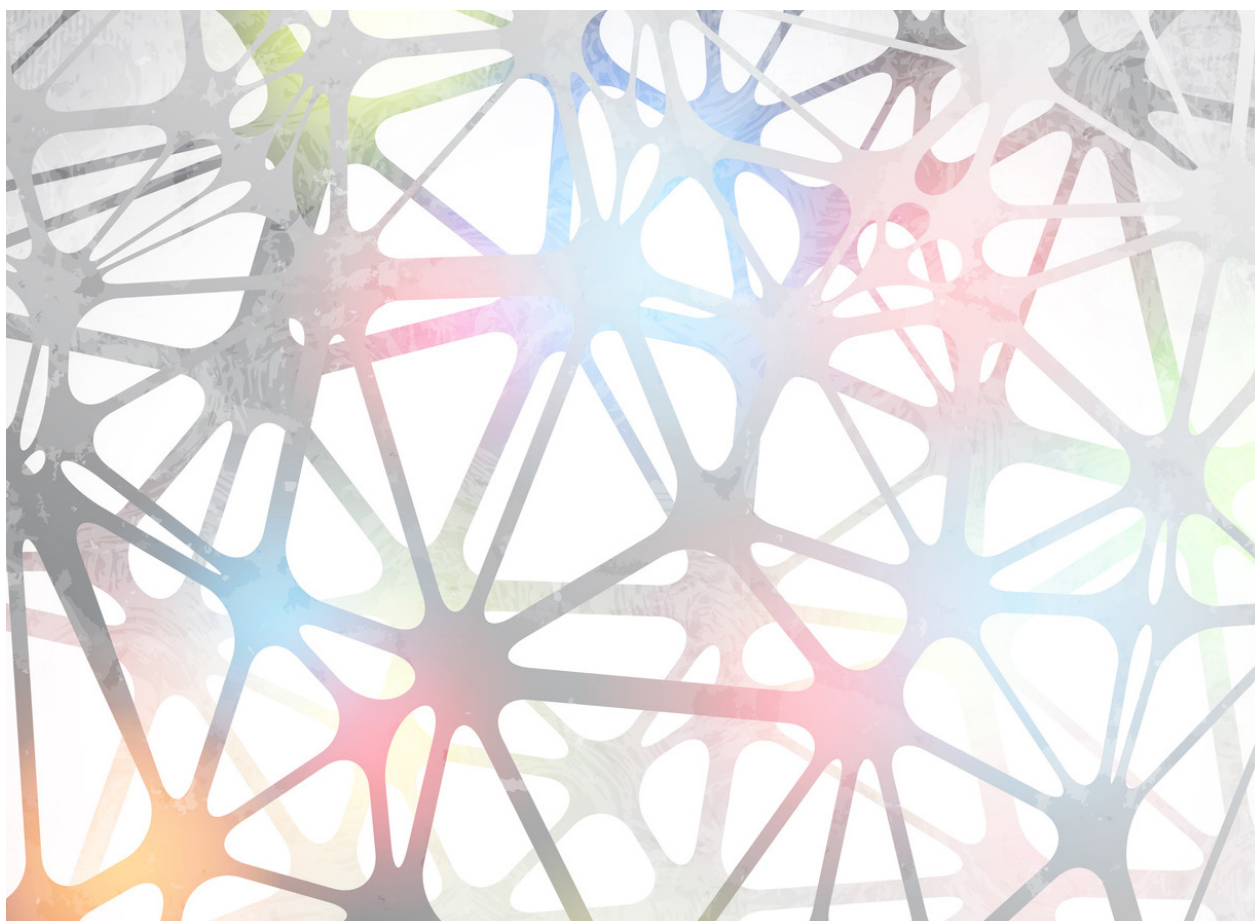
The Mental Health CIBER is accredited and complies with the requisites covered in rule ISO 9001:2008 in administrative procedures and Biobanks. In this setting of improvement, assessment becomes necessary and at CIBERSAM stress has been placed in 2015 on the evaluation of the structure, processes and scientific production:

- Structure: taking into account the qualification, technological capacity, infrastructure, economic-administrative organisation, management of material and human resources.
- Processes: stress is placed on fulfilment of the CIBER's mission, the relevance of its work on the national and international scales and consistency in the planning, dissemination and disclosure of the results.
- Scientific production: value is placed on production in respect of the resources available, the number of publications, the projects, patents and evolution over time.

Indicators for 2015

	SITUATION OF INDICATOR 2014	OBJECTIVE 2015	SITUATION IN 2015	OBSERVATIONS
Number of areas for improvement detected.	3	3	3	<p>A visibility document has been drawn up (documents, brochure and triptych) in Spanish and English, which are available on the CIBERSAM web page in the Press Room section, Highlights subdivision.</p> <p>Incorporation of health guides in the web page for relatives (includes link for making donations).</p> <p>New call for awards: "Nursing and Mental Health" Award.</p>
Number of preventive measures implemented.	2	2	2	<p>Appointment of a head of the study of cohorts of first psychotic episodes.</p> <p>Appointment/contracting of a scientific activity manager for handling the CIBERSAM intranet.</p>
Number of internal satisfaction surveys issued.	1	1	1	Satisfaction survey of contracted CIBERSAM personnel.
Number of external satisfaction surveys issued.	1	1	1	Satisfaction survey of pharmaceutical laboratories.
Number of analyses of surveys.	2	2	2	<p>Satisfaction survey of contracted personnel.</p> <p>Satisfaction survey of pharmaceutical laboratories.</p>

Percentage of surveys of internal users in respect of total surveys carried out.	-	(+5%)	30/65 46%	The % of increase in participation cannot be calculated because in the previous survey (2012) the datum on number of contracted staff was not included (this is a new indicator of the Strategic Plan 2014-2016).
Percentage of surveys on external users answered in respect of total number of surveys carried out.	-	>70%	2/5 40%	The proposal is to eliminate the laboratory survey as an objective for the new Strategic Plan 2016-2019, since the information received does not provided conclusive data due to the low number of external users currently working with the Cibersam and their low level of participation.
No. of non-conformities.	2	(-1)	18	(8 non-conformities are for Groups and 10 for suppliers).



— Institutional Relations and Communication Programme

COORDINATOR: DR. JULIO BOBES (G5 – Universidad de Oviedo)

Social Forum

The Social Forum with the title “Contribution of Psychiatry to Mental Health” was arranged on the occasion of the Congreso Nacional de Psiquiatría. This activity took place on Wednesday, 23rd September 2015 at 18:00 hours at the Centro ABANCA Obra Social in Pza. Cervantes s/n in Santiago de Compostela.

At this event there were talks by: Celso Arango López, Scientific Director of the Centro de Investigación Biomédica en Red, área de Salud Mental (CIBERSAM); Raquel Rebollo Cerro, Communicator. Mamá ponte guapa Platform and Nel Anselu González, Zapico Vice-president of the Confederación Salud Mental España (formerly known as FEAFES) at that time and now President of said Confederation. The presentation and coordination was the responsibility of Julio Bobes García, Head of Communication of the CIBERSAM.

The event proved of great interest, with the participation of many members of the city's general public.

IV Foro Internacional Nuevos Abordajes en el Tratamiento de la Esquizofrenia

On 12th and 13th November 2015 the III Foro Internacional Nuevos abordajes en el tratamiento de la esquizofrenia was held at the Ateneo de Madrid, arranged by the CIBERSAM. Twenty-three leaders of Spanish and international neuroscience participated in this Forum.

Some of the guests gave their report in the form of a Debate “Are tests in pharmacogenetics clinically applicable today?” (José de León and Bárbara Arias).

There were two plenary session lectures, given by different guests from the U.S.A. with talks on “What have we learned in research into first episodes over these last 20 years” (Nancy Andreasen) and “Can a first psychotic episode be prevented?” (Robert Freedman).

As well as this, four round tables were held at the CIBER de Salud Mental (CIBERSAM) on the subject of research into schizophrenia, on the need for a complex and integrating approach: “What have we learned in research into first psychotic episodes” and “The many roads taken by psychosis”.

The balance attained this year was highly positive, which is how the Forum continues to become consolidated as one of the annual events of great interest for Spanish neuroscientists.

The meeting of Pls of the CIBERSAM was held in the evening of Friday, 13th November.

Presentation of Guidelines

One of the objectives of the CIBERSAM is to disseminate the scientific knowledge acquired for its applicability to the clinical field in order to improve the quality of life of those affected by mental disorders.

On 2nd July an event was held in the “Aula Ernest Lluch” at the Ministry of Health, in Paseo del Prado número 18 de Madrid, in the presence of the Secretary-General for Health, amongst other healthcare authorities as well as representatives of the Instituto de Salud Carlos III, for presenting the PIENSA Guide for teenagers and families wishing to understand and confront psychosis and the Clinical and therapeutic guide for first psychotic episodes in childhood and adolescence. These guides sum up the scientific evidence of the last few years, including cases of good clinical practice with regard to children, adolescents and young people having a first psychotic episode.

Training and Mobility Programme

COORDINATOR: DR. ÁNGEL PAZOS CARRO (G20 – Universidad de Cantabria)

Since it was set up, the CIBERSAM has carried out a Training Programme which seeks to be a reference in training in mental health in this country.

The backbone of this Programme is the performance of an Official Master Course on Initiation to Research in Mental Health, which started to be given in academic year 2013-2014. Along with this course, there is a possibility of financing stays at other programmes connected with the different areas of work, preferably the ones offered by the CIBERSAM itself. Research stays are also financed at other Units of the CIBERSAM, at other scientific areas of CIBER, or abroad.

The Master Course on Initiation to Research in Mental Health is an inter-university course arranged by the Complutense, Barcelona, Autónoma de Barcelona, Cádiz and Cantabria universities, coordinated by the latter. 11 groups from the CIBERSAM take an official part in the teaching, and practically all the others do so in a more indirect sense.

The Master Course Syllabus (with 60 credits) is characterised by having a major virtual component, as well as by having compulsory practical stays, in both the clinical and basic fields. It tackles both aspects of foundations of research and neurobiological bases and diagnostic, clinical and therapeutic approaches.

In 2015 all the courses for the second four-month period of the second edition (2014-2015) were given; in the last quarter of the year the first courses of the third edition also started to be given, one of these in the classroom and five online.

The number of students enrolled in the first edition came to 33 and in this third edition, currently under way, the maximum number of 50 was covered, just as it was in the second. The students are from all over Spain, with different training profiles (medicine, psychology, biology, etc.).

As regards the financing charged to the Programme, CIBERSAM has agreed to reserve a significant part of its Training budget for partial financing of researchers' participation in the Master course. In its second edition, a total number of five groups benefitted from the partial subsidy of the enrolment fee. Three candidates benefitted from this in the third edition.

Aside from the Master Course, the Training Programme has financed 30 stays on a total number of 15 courses and training activities for members of the CIBERSAM: 24 of these took place in Spain (14 on courses directed by its groups) and 6 abroad (Great Britain, Holland). The participation of 19 CIBER members at the Congress of the Sociedad Española de Psiquiatría was also financed. The large numbers of those attending the Intensive Course for introduction to NeuroSciences and the Ideas Laboratory is another point worthy of mention.

Five stays for CIBERSAM members were financed, four in Spain and the rest in the United States.

Taking into account the budget reservation mentioned above, it is important to point out that in 2015 the financing objectives established in the budget were complied with.

5

Platforms



Mental Health Instruments Library Platform

COORDINATOR: DR. JOSEP M. HARO ABAD (G11- Fundación para la Investigación y Docencia Sant Joan de Déu)

The Instruments Library Platform provides information and service for researchers on questionnaires and measuring instruments for mental health. The bank currently has 300 instruments covering different areas of interest.

Some of the activities carried out in 2015 that are most worthy of mention are:

- Creation and distribution of an informative triptych on the mental health services platform, in cooperation with Otsuka pharmaceutical firm.
- Adaptation of the web page:
 - New design, adapted to different mobile devices.
 - Incorporation of sections: FAQ, News.
 - Updated sections: Advice and research projects.
 - Updated search criteria and review of all instruments.
 - Adaptation to legislation under the LSSICE (Spanish Law on Information Society Services)
 - Development of a wide range of materials for methodological support.
- Holding the VI Jornadas Formativas of the Instruments Bank, attended by 26 persons. This workshop took place on 8th and 9th June, and was divided into two parts: in the first those attending were trained in techniques for developing and validating instruments; in the second part researchers were asked to share their progress in projects connected with validating questionnaires. In all, two master classes and nine short presentations were given at the workshop.
- VI Intramural call for grants for research projects. 10 of the projects presented in the 2015 call were selected for financing:
 - Creation and validation of the Inventory of Vital Events in Adolescents (ISVA): a relevant instrument for studying psychiatric disorders in children and adolescents (PI: Generós Ortet, G8).
 - Validation and adaptation to Spanish of the self-report entitled Borderline Personality Disorders Checklist (BPD Checklist; Arntz & Dreesen, 2001; Giesen-Bloo, Arntz & Schouten, in press),

for the diagnosis and severity of Borderline Personality Disorder (BPD) and assessment of the therapeutic change in clinical samples (PI: Natalia Calvo Piñero, G27).

- Validation of the Apathy Evaluation Scale (AES) in schizophrenic patients (PI: Paz García Portilla; G5).
- Validation of a version of the computer-assisted DAY RECONSTRUCTION METHOD by item response theory (PI: Marta Miret, G3 and G11).
- Validation and adaptation to Spanish of the Borderline Personality Features Scale for Children-11 report (BPFSC-11; Sharp, Steinberg, Temple & Newlin, 2014), for the psychiatric diagnostic assessment of Borderline Personality Disorder in adolescents (PI: Natalia Calvo, G27).
- Validation of the subjective well-being scale (WHO-5) in patients with bipolar disorder (PI: Eduard Vieta, G25).
- Development and validation of the computerised version in Spanish of the film for evaluation of social cognition (Movie for Assessment of Social Cognition, MASC) (PI: Guillermo Lahera, G22 and G01).
- Validation of the digital version of the Corsi test (PI: Sara Siddi, G11).
- Translation and validation into Spanish of the inventory "The Symptom Onset in Schizophrenia (SOS) inventory" (PI: Miguel Bernardo, G4).
- Adaptation, validation and standardisation of the Baron-Cohen test for facial recognition of emotions in schizophrenics, with autism spectrum disorder (ASD) and healthy controls (PI: Judith Usall i Rodié, G11 and G01).

15 scientific articles were furthermore published from 2014 to 2015, and three presentations were given at Congresses, stemming from projects financed in previous calls.

Neuroimaging Platform

COORDINATOR: DR. MANUEL DESCO MENÉNDEZ (G07- Hospital General Universitario Gregorio Marañón)

At the present time over 20 national and international projects are using the Neuroimaging Bank and its technical resources for analysis and processing.

In 2015 images of 169 new subjects were added to the database of this scientific structure, increasing to a total of 3040 cases stored. The total number of images available at the Neuroimaging Banks comes to 13,805 (57% more than 2013). Furthermore, during 2015 a total number of 393 studies were processed (26% more than in 2013).

In the field of development a DSI (Diffusion Spectrum MRI) HARDI sequence was performed on the MR Philips Achieva 1.5 which started to be used that same year.

As part of the project entitled "Brain-inspired data engineering (BRADE)" of the Comunidad de Madrid, the construction of a SPIM (Selective/single Plane Illumination Microscopy) system was developed at the Hospital General Universitario Gregorio Marañón.

In 2015 the process was got under way for signing a new Agreement with the Fundación para la Investigación Biomédica del Hospital Gregorio Marañón, in order to use this Foundation's technical resources as a repository for the images provided by CIBERSAM groups. This new Agreement will enable the Neuroimaging Bank to comply with all the requisites for becoming established as a CIBERSAM Platform.

The processing of the images stored will from 2016 be dissociated from the activities of the Neuroimaging Bank, to become an activity performed by the group responsible for his scientific structure (G07).

The Neuroimaging bank works in coordination with the GRIDSAM clinical data bank.

Brain samples

COORDINATOR: DR. JAVIER MEANA MARTÍNEZ (G16- Universidad del País Vasco, UPV/EHU)

In 2015, this structure went on making use of the brain samples available from the collections of the Banco de Tejidos Neurológicos de la Fundación Sant Joan de Déu, the Biobank of the Fundación Marqués

de Valdecilla and the Collection of Brain Samples of the Universidad del País Vasco.

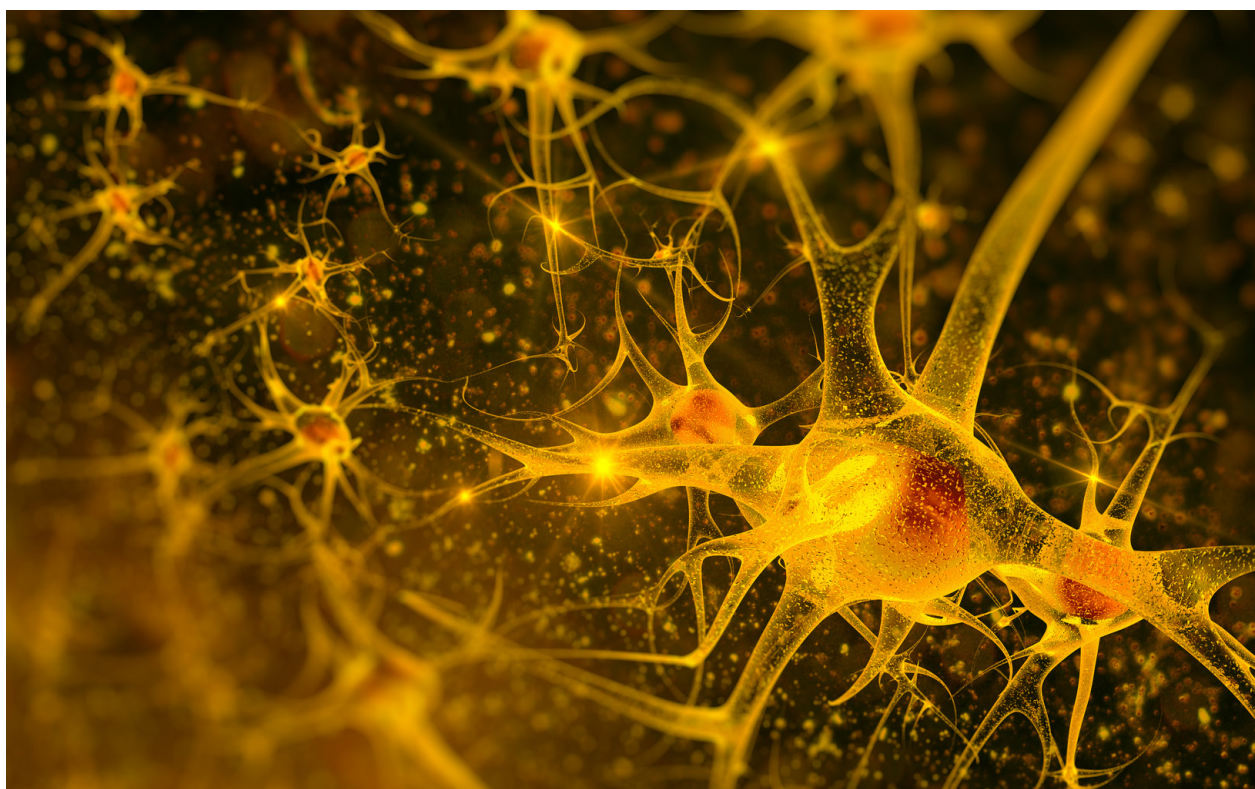
Some of the noteworthy achievements in 2015 are:

	2014 Indicators	2015 Indicators
New cases incorporated	0	50
IntraCIBERSAM donations	60	0
Total donations	144	134
Publications	10	8

After the break for legal adaptation, which entailed a technical stoppage in the processes for collecting samples, the process for obtaining new psychiatric cases and controls was got under way.

In 2015, the different biorepositories went on with their technical improvement, allowing the availabil-

ity of new technologies for use by CIBERSAM researchers. One example of this is that the UPV/EHU collection has got under way the quantification of markers of the quinurenin channel in post-mortem human brain.



6

Research Groups



Group 1

Programme: Mental Disorders of the Child and Adolescent / Schizophrenia

Lead Researcher: Arango López, Celso



Group Members



STAFF MEMBERS: Del Rey Mejías, Ángel Luis | García Alcón, Alicia | Merchán Naranjo, Jéssica | Moran Moya, Purificación | Rapado Castro, Marta | Recio Lamparero, Sandra | Rodríguez Latorre, Pamela | Tapia Casellas, Cecilia.

ASSOCIATED MEMBERS: Boada Muñoz, Leticia | de Portugal Fernández, Enrique | Fraguas Herráez, David | Graell Bernal, Montserrat | Janssen Jeucken, Joost | Llorente Sarabia, Cloe | Martínez Díaz Caneja, Covadonga | Mayoral Aragón, María | Moreno Pardillo, Dolores María | Moreno Ruiz, Carmen | Parellada Redondo, María José | Penzol Alonso, María José | Pina Camacho, Laura | Romo Villa, José.

COLLABORATORS: Corral Zarapuz, Azucena.

Main lines of research

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

Most relevant scientific articles

CALVO A., MORENO M., RUIZ-SANCHO A., RAPADO-CASTRO M., MORENO C., SÁNCHEZ-GUTIÉRREZ T. ET AL. Psychoeducational Group Intervention for Adolescents With Psychosis and Their Families: A Two-Year Follow-Up. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015.

PINA-CAMACHO L, DEL REY-MEJÍAS Á, JANSSEN J, BIOQUE M, GONZÁLEZ-PINTO A, ARANGO C ET AL. Age at First Episode Modulates Diagnosis-Related Structural Brain Abnormalities in Psychosis. *Schizophrenia bulletin*. 2015.

PARELLADA M, CASTRO-FORNIELES J, GONZÁLEZ-PINTO A, PINA-CAMACHO L, MORENO D, RAPADO-CASTRO M ET AL. Predictors of functional and clinical outcome in early-onset first-episode psychosis: the child and adolescent first episode of psychosis (CAFEPS) study. *The Journal of clinical psychiatry*. 2015;76(11):e1441-8.

VORSTMAN J.A.S., BREETVELT E.J., DUIJFF S.N., ELIEZ S., SCHNEIDER M., JALBRZIKOWSKI M. ET AL. Cognitive decline preceding the onset of psychosis in patients with 22q11.2 deletion syndrome. *JAMA Psychiatry*. 2015;72(4):377-385.

BOS D.J., MERCHAN-NARANJO J., MARTÍNEZ K., PINA-CAMACHO L., Balsa I., BOADA L. ET AL. Reduced Gyrification Is Related to Reduced Interhemispheric Connectivity in Autism Spectrum Disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015;54(8):668-676.

Highlights

The research team of the Department of Psychiatry at Hospital General Universitario Gregorio Marañón (CIBERSAM group 1, G01) is recognised for its expertise in the field of Child and Adolescent Psychiatry and its accredited human and technical resources. In 2015, the group participated in nine European projects funded through the EU Seventh Framework Programme and one international project funded by the US National Institute of Mental Health (NIMH). G01 also leads the European project *Psychiatric Ratings using Intermediate Stratified Markers (PRISM)*

at the national level, which is aimed at identifying biological markers that might help develop new therapeutic strategies to treat cognitive and social deficits in dementia, depression and schizophrenia, and which obtained funding in the last *Innovative Medicines Initiative Call (IMI2)*. In 2015, members of the group published over forty articles in national and international peer-reviewed journals and collaborated in the development of two clinical guidelines for management of children and adolescents with psychosis.

Group 2

Programme: Therapeutic Innovation / Depression

Lead Researcher: Artigas Pérez, Francesc



Group Members



STAFF MEMBERS: Castañé Forn, Anna | Jaramillo Muñumer, María | Paz Silva, Verónica | Santana Ramos, Noemí.

ASSOCIATED MEMBERS: Bortolozzi Biasoni, Analia | Campa Montobbio, Leticia | Celada Pedrosa, María Paz | Ferres Coy, Albert | Fullana Llinàs, Maria Neus | Galofré Centelles, Mireia | Gasull Camós, Júlia | Lladó Pelfort, Laia | Riga, Maurizio | Ruiz Bronchal, Esther.

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 and serotonergic hallucinogens.
- Neurobiological basis of fast-acting antidepressant strategies (deep brain stimulation, RNAi, ketamine).
- Study of transgenic mouse models of schizophrenia.
- Neurochemistry and neuropharmacology of brain neurotransmitters.

Most relevant scientific articles

FERRES-COY A., GALOFRE M., PILAR-CUELLAR F., VIDAL R., PAZ V., RUIZ-BRONCHAL E. ET AL. Therapeutic antidepressant potential of a conjugated siRNA silencing the serotonin transporter after intranasal administration. *Molecular Psychiatry*. 2015.

SÁNCHEZ C., ASIN K.E., ARTIGAS F.. Vortioxetine, a novel antidepressant with multimodal activity: Review of preclinical and clinical data. *Pharmacology and Therapeutics*. 2015;145:43-47.

JIMÉNEZ-SÁNCHEZ L, CASTAÑÉ A, PÉREZ-CABALLERO L, GRIFFOLL-ESCODA M, LÓPEZ-GIL X, CAMPA L ET AL. Activation of AMPA Receptors Mediates the Antidepressant Action of Deep Brain Stimulation of the Infralimbic Prefrontal Cortex. *Cerebral cortex* (New York, N.Y. : 1991). 2015.

RIGA M.S., BORTOLOZZI A., CAMPA L., ARTIGAS F., CELADA P.. The serotonergic hallucinogen 5-methoxy-N,N-dimethyltryptamine disrupts cortical activity in a regionally-selective manner via 5-HT1A and 5-HT2A receptors. *Neuropharmacology*. 2015;101:370-378.

LLADO-PELFORT L., TROYANO-RODRÍGUEZ E., VAN DEN MUNKHOF H.E., CERVERA-FERRI A., JURADO N., NÚÑEZ-CALVET M. ET AL. Phencyclidine-induced disruption of oscillatory activity in prefrontal cortex: Effects of antipsychotic drugs and receptor ligands. *European Neuropsychopharmacology*. 2015.

Highlights

The group has led a total of 12 grants during 2015, including 1 EU grant (IMI-NEWMEDS, Grant 115008), 5 Spanish competitive grants (SAF2012-35183, IPT-2012-1208-300000, PI10/00290, PI12/00156 and RTC-2014-2812-1), 1 autonomous community grant (2014SGR798), 1 international grant (The Brain & Behavior Research Foundation Grant 20003), 3 contracts with pharmaceutical companies (H. Lundbeck A/S; nLife Therapeutics) and 1 grant supported by The Alicia Koplowitz Foundation. On the other hand, the group applied to the Proyectos Excelencia I+D+I 2015 Spanish government call, whose acceptance has been notified in February 2016 (SAF2015-68346-P). Additionally, one patent of 2013 has been updated in USA on July 20, 2015 (14/803,811) and another of 2011 has been submitted according to the PCT application procedure.

From the studies carried out during 2015, we highlight a) development of novel antidepressant strategies using RNAi, b) study of the mechanism of action of ketamine, as a fast-acting antidepressant drug, c) study of the mechanism of action of novel antidepressant drugs, such as vortioxetine, d) development of preclinical models of schizophrenia, and d) identification of thalamocortical circuits as therapeutic targets in schizophrenia.

Overall, the group keeps a solid reputation in the field of Neuropsychopharmacology, as shown by its high level of citations (h-index of the PI = 57, who has achieved 11.000 citations in 2015). Among the awards and distinctions received during 2015, the PI has received the ECNP Neuropsychopharmacology Award from the European College of Neuropsychopharmacology. Prof. F. Artigas is the first Spanish scientist receiving this Award, which included the invitation to give a plenary lecture at the 28th ECNP Congress, held in August 2015 (Amsterdam).

Institution: Agencia Estatal Consejo Superior de Investigaciones Científicas

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Group 3

Programme: Depression / Bipolar Disorder

Lead Researcher: Ayuso Mateos, José Luis



Group Members



STAFF MEMBERS: Caballero Díaz, Francisco Félix | Cabello Salmerón, María | Kamenov, Kaloyan.

ASSOCIATED MEMBERS: Leal Leturia, Itziar | López García, Pilar | Martorell Cafranga, Almudena | Mellor Marsá, Blanca | Miret García, Marta | Nuevo Benítez, Roberto | Provencio Ortega, María | Rico Uribe, Laura Alejandra | Rivas Rodríguez, María del Mar.

Main lines of research

- Epidemiology and nosology of mental disorders.
- Assessment of the efficacy of different therapeutic 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.
- Strategies for improvement mental health service coverage in low and middle income countries.
- Analyses of factors associated with the onset of first psychotic episodes.
- To identify patterns of healthy ageing, their determinants and the critical points in time when changes in trajectories are produced, and to propose public health interventions to optimise healthy ageing.
- To enhance current strategies for employment integration and reintegration of people with chronic conditions (including mental disorders)
- To identify biomarkers in patients with major depression.

Most relevant scientific articles

MIRET M., CABELLO M., MARCHENA C., MELLOR-MARSA B., CABELLERO F.F., OBRADORS-TARRAGO C. ET AL. The state of the art on European well-being research within the area of mental health. *International Journal of Clinical and Health Psychology*. 2015;15(2):171-179.

KAMENOV K, CABELLO M, COENEN M, AYUSO-MATEOS JL. How much do we know about the functional effectiveness of interventions for depression? A systematic review. *Journal of affective disorders*. 2015;188:89-96.

MELLOR-MARSA B., MIRET M., ABAD F.J., CHATTERJI S., OLAYA B., TOBIASZ-ADAMCZYK B. ET AL. Measurement Invariance of the Day Reconstruction Method: Results from the COURAGE in Europe Project. *Journal of Happiness Studies*. 2015.

SEMRAU M., EVANS-LACKO S., ALEM A., AYUSO-MATEOS J.L., CHISHOLM D., GUREJE O. ET AL. Strengthening mental health systems in low- and middle-income countries: The Emerald programme. *BMC Medicine*. 2015;13(1).

CIEZA A., SABARIEGO C., ANCZEWSKA M., BALLERT C., BICKENBACH J., CABELLO M. ET AL. PARADISE 24: A measure to assess the impact of brain disorders on people's lives. *PLoS ONE*. 2015;10(7).

Highlights

In 2015, our group started working on three new research projects in collaboration with other CIBERSAM centers. The Ageing Trajectories of Health: Longitudinal Opportunities and Synergies (ATHLOS) is an EU project from H2020 call aimed to identify patterns of healthy ageing, their determinants and the critical points in time when changes in trajectories are produced and to propose public health interventions to optimize healthy ageing. On the other hand, we have also started with Participation to healthy workplaces and inclusive strategies in the work sector (PATHWAYS), an European project from the 3rd health framework programme call, which is aimed developing innovative approaches to promote the professional integration and reintegration of people

with chronic diseases (including mental disorders) and improve their employability. Furthermore, the Study of the inflammatory and oxidative stress biomarkers in major depression is addressed to determine specific biomarkers that can be altered in patients with major depression disorder. Finally our group, as part of their international activities has carried out the second-year workshop to train primary health care doctors in the identification and treatment of mental disorders in Universidad Nacional Autonoma de Mexico, has organized meetings with World Health Organization experts and has collaborated with european and internacional researchers to produce scientific papers.

Group 4

Programme: Schizophrenia / Mental Disorders of the Child and Adolescent

Lead Researcher: Bernardo Arroyo, Miguel



Group Members



STAFF MEMBERS: Bioque Alcázar, Miguel | de La Serna Gómez, Elena | Folch Espada, Anna.

ASSOCIATED MEMBERS: Andrés Perpiñá, Susana | Baeza Pertegaz, María Inmaculada | Cabrera Llorca, Bibiana | Calvo Escalona, Rosa | Castro Fornieles, Josefina | Catalán Campos, Rosa | Fernández Egea, Emilio | Flamarique Valencia, Itziar | García Rizo, Clemente | Lafuente Flo, Amalia | Lazaro García, Luisa | Lomeña Caballero, Francisco | Mane Santacana, Anna | Mas Herrero, Sergio | Massana Montejo, Guillem | Morer Liñán, Ástrid | Parellada Rodón, Eduardo | Penades Rubio, Rafael | Pons Villanueva, Alexandre | Puig Navarro, Olga | Romero Cella, Soledad | Sánchez Gistau, Vanesa.

Main lines of research

- Physical health in Schizophrenia.
- 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

GARCÍA-RIZO C., FERNÁNDEZ-EGEA E., BERNARDO M., KIRKPATRICK B.. The thrifty psychiatric phenotype. *Acta Psychiatrica Scandinavica*. 2015;131(1):18-20.

SUGRANYES G., DE LA SERNA E., ROMERO S., SÁNCHEZ-GISTAU V., CALVO A., MORENO D. ET AL. Gray Matter Volume Decrease Distinguishes Schizophrenia From Bipolar Offspring During Childhood and Adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015;54(8):677-684.

BATALLA A, BARGALLÓ N, GASSÓ P, MOLINA O, PARETO D, MAS S ET AL. Apoptotic markers in cultured fibroblasts correlate with brain metabolites and regional brain volume

in antipsychotic-naïve first-episode schizophrenia and healthy controls. *Translational psychiatry*. 2015;5:e626.

VALIENTE-GÓMEZ A, MEZQUIDA G, ROMAGUERA A, VILARDEBÒ I, ANDRÉS H, GRANADOS B ET AL. Validation of the Spanish version of the Clinical Assessment for Negative Symptoms (CAINS). *Schizophrenia research*. 2015;166(1-3):104-9.

LEZA J.C., BUENO B., BIOQUE M., ARANGO C., PARELLADA M., DO K. ET AL. Inflammation in schizophrenia: A question of balance. *Neuroscience and Biobehavioral Reviews*. 2015;55:612-626.

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. In G04 is integrated the research group in Child and Adolescent Psychiatry.

PRINCIPAL PROJECTS:

International:

- European Network of National schizophrenia Networks studying Gene-environment Interactions (EU-GEI).
- Optimization of Treatment and Management of Schizophrenia in Europe- OPTiMiSE.
- European Long-acting Antipsychotics in Schizophrenia Trial- EULAST Foundation European Group for Research in Schizophrenia (EGRIS).
- Multidisciplinary Approaches to Translational Research In Conduct Syndromes, MATRICS. : European Commission. CE_FP7_HEALTH_IN1_13.
- Paediatric European Risperidone Studies. European Commission.

National Projects:

- Determinantes clínicos y neurobiológicos de segundos episodios de esquizofrenia. Estudio longitudinal de primeros episodios psicóticos. FIS (ISCIII).
- Estudio de seguimiento tras cuatro años de la primera evaluación de niños y adolescentes hijos de pacientes con esquizofrenia o trastorno bipolar. FIS (ISCIII).
- Estudio multicéntrico longitudinal sobre características clínicas, cognitivas y de neuroimagen en niños y adolescentes con Síndrome de Riesgo de Psicosis. FIS (ISCIII).
- Predictor multigenético para la prevención de los efectos secundarios inducidos por antipsicóticos – APSIDE. MINECO -FEDER.

PATENTS:

- 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:

- Guía Clínica y terapéutica para primeros episodios psicóticos en la infancia y adolescencia. Centro de Investigación Biomédica en Red – CIBER. 2015.
- Protocol per al maneig del Trastorn per Dèficit d'Atenció amb Hiperactivitat (TDAH) Infantojuvenil en el Sistema Sanitari Català. Generalitat de Catalunya. Departament de Salut. 2015.

Institution: Hospital Clínic de Barcelona · **Contact:** Hospital Clínic de Barcelona
Villarroel, 170. 08036 Barcelona · Tel.: 93 227 54 00 ext 3142 · E.mail: bernardo@clinic.ub.es

Group 5

Programme: Schizophrenia / Bipolar Disorder

Lead Researcher: Bobes García, Julio



Group Members



STAFF MEMBERS: Al-Halabi Díaz, Susana | Bascarán Fernández, María Teresa | García Álvarez, Leticia.

ASSOCIATED MEMBERS: Bombín González, Igor | Bousoño García, Manuel | Burón Fernández, Patrícia | Díaz Mesa, Eva María | Flórez Menéndez, Gerardo | García Portilla González, Mari Paz | Iglesias García, Celso Ángel | Jiménez Treviño, Luis | Muñiz Fernández, José | Saiz Martínez, Pilar Alejandra | Sarramea Crespo, Fernando.

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

WASSERMAN D., HOVEN C.W., WASSERMAN C., WALL M., EISENBERG R., HADLACZYK G. ET AL. School-based suicide prevention programmes: The SEYLE cluster-randomised, controlled trial. *The Lancet*. 2015;385(9977):1536-1544.

STUBBS B., VANCAMPFORT D., BOBES J., DE HERT M., MITCHELL A.J.. How can we promote smoking cessation in people with schizophrenia in practice? A clinical overview. *Acta Psychiatrica Scandinavica*. 2015.

MARTÍNEZ-CENGOTITABENGOA M, MACDOWELL KS, ALBERICH S, DÍAZ FJ, GARCÍA-BUENO B, RODRÍGUEZ-JIMENEZ R ET AL. BDNF and NGF Signalling in Early Phases of Psychosis: Relationship With Inflammation and Response to Antipsychotics After 1 Year. *Schizophrenia bulletin*. 2015.

BONNIN CM, REINARES M, MARTÍNEZ-ARÁN A, BALANZÁ-MARTÍNEZ V, SOLE B, TORRENT C ET AL. Effects of functional remediation on neurocognitively impaired bipolar patients: enhancement of verbal memory. *Psychological medicine*. 2015;:1-11.

MENÉNDEZ-MIRANDA I, GARCÍA-PORTILLA M.P., GARCÍA-ALVAREZ L., ARROJO M., SÁNCHEZ P., SARRAMEA F. ET AL. Predictive factors of functional capacity and real-world functioning in patients with schizophrenia. *European Psychiatry*. 2015;30(5):622-627.

Highlights

The G05, in 2015, was involved in several research projects, with members of the group being the PI in four of them: Differential biomarkers in the negative dimension of schizophrenia, neuropsychological functioning and inflammatory profile in suicidal behavior, Validation of a clinical staging model for bipolar disorder and Validation of the Apathy Evaluation Scales (AES) in patients with schizophrenia, the first three funded by the FIS and the fourth by the BICIBERSAM.

Consequence of psychometric research in schizophrenia, is the validation and publication of a new scale designed to objectively assess the actual level of patient functioning and to measure community functioning related to cognitive impairment and psychopathology (SOFI), and the proposal to the scientific community of a new factor structure of the negative syndrome in schizophrenia (3 factors instead of 2) from the validation study of BNSS.

During 2015 six doctoral thesis have been directed and defended, whose titles are: "Pedro Rodríguez Ponga (1880-1916): Life and work of a psychiatrist in the Spain Restoration", "Executive skills, as measured by the UPSA scale in patients with severe mental illness (schizophrenia and bipolar dis-

order)" related to the UPSA validation and with the development of a short version of it, "Monitoring suicidal behaviors in Health Care IV of Asturias "," Deep brain stimulation in patients with Parkinson's disease: Changes in psychiatric parameters and quality of life, " Iron Deficiency: Impact on mental health" and "Person-centered care in geriatric services: models and assessment tools".

Participation in the development of the Clinical Practice Guideline of Dual Pathology.

Two members of the group are Editors in chief of two indexed scientific Journals with impact factor: *Revista de Psiquiatría y Salud Mental* and *Adicciones*.

Participation in Board/Executive Committees of European and National Scientific Societies and in scientific and / or organizer committees of national and international conferences/congress.

Group 6

Programme: Depression / Psychosomatic, Anxiety and Impulse Control Disorders

Lead Researcher: Cervilla Ballesteros, Jorge Antonio



Group Members



STAFF MEMBERS: Lozano Gutiérrez, Vanessa | Muñoz Negro, José Eduardo.

ASSOCIATED MEMBERS: Gutiérrez Martínez, Blanca | Lorente Acosta, José Antonio | Pérez García, Miguel | Rivera Sánchez, Margarita | Torres González, Francisco.

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

GUTIÉRREZ B., BELLON J.A., RIVERA M., MOLINA E., KING M., MARSTON L. ET AL. The risk for major depression conferred by childhood maltreatment is multiplied by BDNF and SERT genetic vulnerability: A replication study. *Journal of Psychiatry and Neuroscience*. 2015;40(3):187-196.

GUTIÉRREZ-FERNÁNDEZ J., DEL CASTILLO J.D.L., MANANES-GONZÁLEZ S., CARRILLO-AVILA J.A., GUTIÉRREZ B., CERVILLA J.A. ET AL. Different presence of chlamydia pneumoniae, herpes simplex virus type 1, human herpes virus 6, and toxoplasma gondii in schizophrenia: Meta-analysis and analytical study. *Neuropsychiatric Disease and Treatment*. 2015;11:843-852.

MUNOZ-NEGRO J.E., IBANEZ-CASAS I., DE PORTUGAL E., OCHOA S., DOLZ M., HARO J.M. ET AL. A dimensional comparison between delusional disorder, schizophrenia and schizoaffective disorder. *Schizophrenia Research*. 2015;169(1-3):248-254.

RIVERA M., MCGUFFIN P.. The successful search for genetic loci associated with depression. *Genome Medicine*. 2015;7(1).

MCGUFFIN P., RIVERA M.. The interaction between stress and genetic factors in the etiopathogenesis of depression. *World Psychiatry*. 2015;14(2):161-163.

Highlights

The CIBERSAM Universidad de Granada Group has developed further a variety of its research lines during 2015. Thus, we have identified and published several candidate genes related to monoaminergic pathways and the HPA Axis in depression. We have also reported candidate genes for the interphase between depression and obesity as reported in *Molecular Psychiatry*. Within our psychiatric epidemiology line, we have finished both the GRANADep and PSIMAEp studies on the prevalence of common mental disorder in Granada and Andalucía, respectively. These studies have also allowed to identify risk determinants for mental disorder and suicidal risk using a large representative sample of 5314 participants. We

also produced a meta-analysis on the risk effect of microbial agents in psychosis. The group has also published an empirical demonstration on the categorical validity of three different types of mental disorder whose nosological comparison has not been tested earlier in a single study. We have also reported a simple common 5-dimension formula to profile all these different types of psychotic disorder. Finally, during 2015 two of our researchers have obtained prestigious research grants such as a Ramon y Cajal Grant or a Marie Curie Grant to test an electronic application to monitorize cognitive outcome in psychotic patients, a collaborative study with North Carolina University.

Institution: Universidad de Granada · **Contact:** Universidad de Granada.

Parque Tecnológico de Ciencias de la Salud, CIBM · Avda. del Conocimiento, S/N. 18100 Armilla

E.mail: jcervilla@ugr.es · Website: <http://psybam.ugr.es/>

Group 7

Programme: Therapeutic Innovation / Mental Disorders of the Child and Adolescent

Lead Researcher: Desco Menéndez, Manuel



Group Members

STAFF MEMBERS: Garrido Huerta, Rosa Trajana | Sierra Palomares, Yolanda.

ASSOCIATED MEMBERS: Alemán Gómez, Yasser | Calvo Manuel, Felipe | Cusso Mula, Lorena | Domínguez Montero, Pedro Luis | García Barreno, Pedro | Guzmán de Villoria Lebiechjeswki, Juan | Lafuente Martínez, Javier | Navas Sánchez, Francisco Javier | Pascau González Garzón, Javier | Soto Montenegro, María Luisa.

COLLABORATORS: de Francisco López, Alejandra.

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

CARMONA S., HOEKZEMA E., CASTELLANOS F.X., GARCÍA-GARCÍA D., LAGE-CASTELLANOS A., VAN DIJK K.R.A. ET AL. Sensation-to-cognition cortical streams in attention-deficit/hyperactivity disorder. *Human Brain Mapping*. 2015;36(7):2544-2557.

MARTÍNEZ K., MADSEN S.K., JOSHI A.A., JOSHI S.H., ROMAN F.J., VILLALON-REINA J. ET AL. Reproducibility of brain-cognition relationships using three cortical surface-based protocols: An exhaustive analysis based on cortical thickness. *Human Brain Mapping*. 2015.

BOS D.J., MERCHAN-NARANJO J., MARTÍNEZ K., PINA-CAMACHO L., Balsa I., BOADA L. ET AL. Reduced Gyrification Is Related to Reduced Interhemispheric Connectivity in Autism

Spectrum Disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015;54(8):668-676.

HADAR R., SOTO-MONTENEGRO M.L., GOTZ T., WIESKE F., SOHR R., DESCO M. ET AL. Using a maternal immune stimulation model of schizophrenia to study behavioral and neurobiological alterations over the developmental course. *Schizophrenia Research*. 2015;166(1-3):238-247.

CHAVARRIAS C., GARCÍA-VÁZQUEZ V., ALEMAN-GÓMEZ Y., MONTESINOS P., PASCAU J., DESCO M.. fMRat: an extension of SPM for a fully automatic analysis of rodent brain functional magnetic resonance series. *Medical and Biological Engineering and Computing*. 2015.

Highlights

The G07 group conducted in 2015 more than 20 research projects; This group is coordinator of the Neuroimaging Platform of CIBERSAM, which stores a total of approximately 13800 neuroimaging of patients and controls. There is increased more than 22% the number of neuroimages stored on the platform and were processed about 400 neuroimages.

The group is cooperating with both public and private institutions such as Universidad Carlos III de Madrid (UC3M), Philips, Institute for Biomedical Research August Pi i Sunyer (IDIBAPS), Unit for Research in Cognitive Neuroscience (URNC), Molecular d'Imatge Centre (CRC CIM) and, Spanish Society of Electro and Quality (SEDECAL).

Group 8

Programme: Schizophrenia / Mental Disorders of the Child and Adolescent

Lead Researcher: Fañanas Saura, Lourdes



Group Members



STAFF MEMBERS: Fatjo Vilas Mestre, Mar | Martín García, M. José | Valldeperas Llaberia, Anna.

ASSOCIATED MEMBERS: Arias Sanperiz, Bárbara | Barrantes Vidal, Neus | Córdova Palomera, Aldo | Ibáñez Ribes, Manuel Ignacio | Miret Fallada, Salvador | Mitjans Niubo, Marina | Moya Higuera, Jorge | Ortet Fabregat, Generós | Palma Gudiel, Helena | Papiol Miró, Sergi | Prats Balado, Claudia | Rosa de la Cruz, Araceli.

Main lines of research

Main objectives of research projects leaded by G08 group researchers are:

- The study of genetic and environmental risk factors in mental disease (SCH, BD and MD), and its relationship with clinical-cognitive and brain phenotypes (fMRI, ₂MRI): case-control designs, family-based studies, and twin-based studies.
- Pharmacogenetics of antidepressants, antipsychotics and mood stabilizers.
- The study of early stress (prenatal stress and childhood and adolescence stress) and its impact on HPA axis dysfunction and the development of externalizing and internalizing psychopathology in early stages of life.
- Recognition of epigenetic changes induced by prenatal psychosocial stressors and childhood abuse, and its association with peripheral biomarkers of im-

mune response and changes in brain neuronal connectivity (₂connectomics).

- The study of GxE mechanisms present in mental disease and populational intermediate phenotypes, from an etiological continuum hypothesis; with special relevance for the study of: schizotypy, attenuated psychotic symptoms and depression.
- The development of new psychometric and clinical evaluation instruments, especially in child and adolescent population.

Some of these research lines are developed in close collaboration with other national research groups (CIBER: CIBERSAM and CIBERER) and International research groups, under the coordination of G08 researchers and with some new funded projects:

- Maternal prenatal stress and HPA axis sensitization mediated by 11 β -HSD2 gene epigenetic

signatures and its interplay with childhood psychosocial stress in explaining risk for psychopathology in adolescence. (PINT1512_IP L. Fañanas (G8)+G1+G4+G5+G22+ Ciberer-U719r+MHI of Manheim.

- Brain development and early stressful conditions in mental Health: the mediating role of epigenetic

mechanisms and neuroimaging correlates (ES-EUEpiBrain)_SAF2015-71526-REDT_MINECO Acciones de Dinamización "Redes de Excelencia"_IP.L.Fañanas (G8)+G4+G24+G25+Ciberer-U719+MHI of Manheim+ U Paris Descartes+ U Medical Center Utrech+U of Milan.

Most relevant scientific articles

CORDOVA-PALOMERA A., TORNADOR C., FALCON C., BARGALLO N., NENADIC I., DECO G. ET AL. Altered amygdalar resting-state connectivity in depression is explained by both genes and environment. *Human Brain Mapping*. 2015.

FATJO-VILAS M., PRATS C., POMAROL-CLOTET E., LAZARO L., MORENO C., GONZÁLEZ-ORTEGA I. ET AL. Involvement of NRN1 gene in schizophrenia-spectrum and bipolar disorders and its impact on age at onset and cognitive functioning. *World Journal of Biological Psychiatry*. 2015;1-11.

CÓRDOVA-PALOMERA A, FATJÓ-VILAS M, GASTÓ C, NAVARRO V, KREBS MO, FAÑANÁS L. Genome-wide methylation study on depression: differential methylation and variable meth-

ylation in monozygotic twins. *Translational psychiatry*. 2015;5:e557.

PALMA-GUDIEL H, CÓRDOVA-PALOMERA A, EIXARCH E, DEUSCHLE M, FAÑANÁS L. Maternal psychosocial stress during pregnancy alters the epigenetic signature of the glucocorticoid receptor gene promoter in their offspring: a meta-analysis. *Epigenetics*. 2015;0.

ALEMANY S, MOYA J, IBÁÑEZ MI, VILLA H, MEZQUITA L, ORTET G ET AL. Research Letter: Childhood trauma and the rs1360780 SNP of FKBP5 gene in psychosis: a replication in two general population samples. *Psychological medicine*. 2015;1-3.

Highlights

The contribution of genetic and environmental factors involved in the resting-state connectivity of the amygdala in depression, have hardly been investigated from new mathematical approaches to neuroimaging signal; Aldo Cordova (G8), in collaboration with researchers from CiberSam and CNG FiP University, analyzed the connectivity patterns in a sample of 48 monozygotic twins informative for depressive phenotypes, showing that the risk for depression is mediated by environmental factors that alter the amygdala connectivity (Hum Brain Mapp, 2015); Some of the environmental factors involved in depression are thought to act through epigenetic modifications; Along the same research line, and from a genome-wide methylomic analysis approach, the epigenetic risk profile for depression was investigated from a peripheral lymphocyte model, finding differences in CG sites in relevant genes in glucocorticoid signal (Transl Psychiatry, 2015). Mar Fatjo-Vilas (G8), in collaboration with several CIBERSAM groups, revealed the involvement of Neuroregulin gene both in the age of onset and cognitive functioning of patients

diagnosed with BD, SCH and other spectrum disorders (World J Biol Psychiatry 2015). Other contributions of this group during this period showed that genetic variability in FKBP5 gene explains the differential sensitivity of the subject to stress during the early stages of life, and the subsequent development of PEs symptoms in adulthood, in two separate samples of general population (Psychological Medicine, 2015).

Other G08 group projects funded in 2015:

- Multicentric study of childhood maltreatment in children and adolescents affected by psychiatric disorders: epigenetic associated signatures and its correlated peripheral immunological biomarkers _PI15/00097_ PI. L. Fañanas (G8)+ G1+G4+G10.
- Analysis of changes in brain connectivity in schizophrenia and its relation to genetic variants involved in the development and function of the excitatory and inhibitory neurons (PI15/01420_IP. Mar Fatjo-Vilas (G8)+ IP coordinador (G19).

Group 10

Programme: Bipolar Disorder / Schizophrenia

Lead Researcher: González-Pinto Arrillaga, Ana



Group Members



STAFF MEMBERS: Alberich Mesa, Susana | Martínez Cengotitabengoa, Mónica.

ASSOCIATED MEMBERS: Bermúdez Ampudia, Cristina | de León Molina, José Alfonso | Echeburua Odriozola, Enrique | Echevarría Orella, Enrique | Fernández Hernández, Miryam | Gil Goikouria, Javier | González Ortega, Itxaso | Irazusta Astiazaran, Jon | López Peña, María Purificación | Martín Carrasco, Manuel | Mosquera Ulloa, Fernando | Vega Pérez, Patricia | Zorrilla Martínez, Iñaki.

COLLABORATORS: Alonso Pinedo, Marta | Besga Basterra, Adriana | Fernández de Corres Aguiriano, Blanca | González-Pinto Arrillaga, Asunción | Hernanz Manrique, Margarita M | Karim Haidar, Mahmoud | Ruiz de Azua García, Sonia | Sáenz Herrero, Margarita | Ugarte Ugarte, Amaia.

Main lines of research

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

Most relevant scientific articles

FERNANDES B.S., STEINER J., BERK M., MOLENDIJK M.L., GONZÁLEZ-PINTO A., TURCK C.W. ET AL. Peripheral brain-derived neurotrophic factor in schizophrenia and the role of antipsychotics: Meta-analysis and implications. *Molecular Psychiatry*. 2015;20(9):1108-1119.

BLASCO-FONTECILLA H., BACA-GARCÍA E., COURTET P., GARCÍA NIETO R., DE LEON J.. Horror vacui: Emptiness might distinguish between major suicide repeaters and nonmajor suicide repeaters: A pilot study. *Psychotherapy and Psychosomatics*. 2015;84(2):117-119.

MARTÍNEZ-CENGOTITABENGOA M, MACDOWELL KS, ALBERICH S, DÍAZ FJ, GARCÍA-BUENO B, RODRÍGUEZ-JIMENEZ R ET AL.

BDNF and NGF Signalling in Early Phases of Psychosis: Relationship With Inflammation and Response to Antipsychotics After 1 Year. *Schizophrenia bulletin*. 2015.

PINA-CAMACHO L, DEL REY-MEJÍAS Á, JANSSEN J, BIOQUE M, GONZÁLEZ-PINTO A, ARANGO C ET AL. Age at First Episode Modulates Diagnosis-Related Structural Brain Abnormalities in Psychosis. *Schizophrenia bulletin*. 2015.

DE LEON J.. Translating Pharmacogenetics to Clinical Practice: Do Cytochrome P450 2D6 Ultrarapid Metabolizers Need Higher Atomoxetine Doses?. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2015;54(7):532-534.

Highlights

The G10 group lead by Ana González-Pinto, is known for its research in the study of Bipolar Disorder and First Psychotic Episodes, participating in both translational research (neurotrophins, inflammation, oxidative stress), and clinical and psychopharmacological research: development of new treatments, new methods of treatment application (online, e-learning, mindfulness), intervention strategies for prevention (postpartum depression, 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 G10 group has developed a specific treatment for psychotic patients with cannabis use to achieve its cessation. They have also conducted research on Alzheimer, Schizophrenia and Depression.

The group have also published a clinical guide entitled "Programa SOMNE: Terapia psicológica integral para el insomnio: guía para el terapeuta y el paciente" (DESCLEE DE BROUWER, S.A. -EDIT, ISBN: 978-84-330-2796-2).

The G10 research group has numerous projects granted continuously, at both regional (Basque Government, Kronikgune), national (FIS, MINECO, MSP-SI) and European level (7th Framework Programme, FISTAR, MASTERMIND). They have also received numerous awards at national and international conferences.

Finally, the incorporation of new talents to research is enhanced by training people on stays within the group and performing several doctoral theses (Beca predoctoral Universidad del País Vasco, beca predoctoral Instituto Carlos III).

Institution: Fundación Vasca de Innovación e Investigación Sanitarias

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Group 11

Programme: Psychosomatic, Anxiety and Impulse Control Disorders / Schizophrenia

Lead Researcher: Haro Abad, Josep Maria



Group Members



STAFF MEMBERS: Moneta, Victoria | Obradors Tarrago, Carla | Siddi, Sara | Stephan Otto Attolini, Christian | Tyrovolas, Stefanos | Vila Badia, Regina.

ASSOCIATED MEMBERS: Araya La Rivera, Susana | Arranz Martí, Belén | Brebión, Gildas | Butjosa Molines, Anna | Dolz Abadía, Montserrat | Foix Sanjuán, Alexandrina | Fusté Boadella, Montserrat | Garin Escrivá, Noe | Koyanagi, Ai | Lara Pérez, Elvira | Moreno Bote, Rubén | Navarra Ordoño, Jordi | Ochoa Guerre, Susana | Olaya Guzmán, Beatriz | Rubio Abadal, Elena | San Molina, Luis | Usall Rodie, Judith.

COLLABORATORS: Iniesta Benedicto, Raquel | López Carrilero, Raquel | Roca Casasús, Mercedes.

Main lines of research

- Clinical, cognitive and psychosocial aspects of severe mental disorders.
- Epidemiology.
- Mental health interventions.
- Basic processes of perception, attention and behaviour.
- Molecular psychiatry.
- Mental disorders in childhood and adolescence.

Most relevant scientific articles

BRÉBION G, STEPHAN-OTTO C, HUERTA-RAMOS E, OCHOA S, USALL J, ABELLÁN-VEGA H ET AL. Visual encoding impairment in patients with schizophrenia: contribution of reduced working memory span, decreased processing speed, and affective symptoms. *Neuropsychology*. 2015;29(1):17-24.

HARO J.M., ALTAMURA C., CORRAL R., ELKIS H., EVANS J., MALLA A. ET AL. Understanding the impact of persistent symptoms in schizophrenia: Cross-sectional findings from the Pattern study. *Schizophrenia Research*. 2015;169(1-3):234-240.

Correction NAGHAVI M., WANG H., LOZANO R., DAVIS A., LIANG X., ZHOU M. ET AL. Global, regional, and national age-sex specific all-cause and cause-specific mortality for

240 causes of death, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*. 2015;385(9963):117-171.

MCGRATH J.J., SAHA S., AL-HAMZAWI A., ALONSO J., BROMET E.J., BRUFFAERTS R. ET AL. Psychotic experiences in the general population: A cross-national analysis based on 31 261 respondents from 18 countries. *JAMA Psychiatry*. 2015;72(7):697-705.

PINACHO R., SAIA G., MEANA J.J., GILL G., RAMOS B.. Transcription factor SP4 phosphorylation is altered in the postmortem cerebellum of bipolar disorder and schizophrenia subjects. *European Neuropsychopharmacology*. 2015;25(10):1650-1660.

Highlights

Completion of the ROAMER project. The project has produced a coordinated and comprehensive roadmap for mental health and wellbeing research in Europe. The project findings are incorporated into future research plans of the European Commission. (*Lancet Psychiatry* 2015; 2: 1036-1042).

RADAR project awarded in the IMI2 (Innovative Medicines Initiative) Call of the European Commission. The project will carry out remote monitoring of people with depression through wearable devices.

Project on the public health implications (comorbidities, risk of suicide) of subclinical psychosis in the general population (Dr. A. Koyanagi).

PIPEP Program (Early Intervention Program in First Psychotic Episodes): The main aims are the early detection and intervention in first psychotic episodes. It includes patients between 16 and 40 years who present a psychotic disorder or a high risk indicators of psychosis. The incidence and prevalence of these disorders will be evaluated as well as the reduction of the duration of untreated psychosis and other outcomes.

KIDSTIME Program: Multifamily treatment (of progenitors, sons and daughters) to increase the parental competences in persons with Severe Mental Disorder and to promote the resilience of the family members. A sample of the families (fathers, mothers, daughters and sons between 5 and 15 years) will be evaluated. The sample is separated into those families who can participate in the workshops (intervention group) of families that for time and / or labor reasons can not participate (control group). Both groups will be administered a battery of questionnaires and selected scales. At the end of the intervention a re-test will be conducted to the intervention and the control groups. The second evaluation of the control group will serve as pre-intervention evaluation in the following intervention group.

Institution: Fundación para la Investigación y Docencia Sant Joan de Déu

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Group 12

Programme: Psychosomatic, Anxiety and Impulse Control Disorders / Therapeutic Innovation

Lead Researcher: Leza Cerro, Juan Carlos



Group Members



STAFF MEMBERS: Martín Hernández, David

ASSOCIATED MEMBERS: Carrasco Perera, José Luis | Díaz Marsa, Marina | García Bueno, Borja | Macdowell Mata, Karina | Muñoz Madrigal, José Luis | Rodríguez Maus, Sandra | Sayd, Aline.

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.
- 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.

Most relevant scientific articles

LEZA J.C., BUENO B., BIOQUE M., ARANGO C., PARELLADA M., DO K. ET AL. Inflammation in schizophrenia: A question of balance. *Neuroscience and Biobehavioral Reviews*. 2015;55:612-626.

MARTÍNEZ-CENGOTITABENGOA M, MACDOWELL KS, ALBERICH S, DÍAZ FJ, GARCÍA-BUENO B, RODRÍGUEZ-JIMENEZ R ET AL. BDNF and NGF Signalling in Early Phases of Psychosis: Relationship With Inflammation and Response to Antipsychotics After 1 Year. *Schizophrenia bulletin*. 2015.

GARCÍA-BUENO B., BIOQUE M., MACDOWELL K.S., SANTABARBARA J., MARTÍNEZ-CENGOTITABENGOA M., MORENO C. ET AL. Pro-/antiinflammatory dysregulation in early psycho-

sis: Results from a 1-year follow-Up study. *International Journal of Neuropsychopharmacology*. 2015;18(2):1-10.

FERRES-COY A., GALOFRE M., PILAR-CUELLAR F., VIDAL R., PAZ V., RUIZ-BRONCHAL E. ET AL. Therapeutic antidepressant potential of a conjugated siRNA silencing the serotonin transporter after intranasal administration. *Molecular Psychiatry*. 2015.

SAYD A., ANTON M., ALEN F., CASO J.R., PAVON J., LEZA J.C. ET AL. Systemic administration of oleoylethanolamide protects from neuroinflammation and anhedonia induced by LPS in rats. *International Journal of Neuropsychopharmacology*. 2015;18(6):1-14.

Highlights

In 2015 our group published several articles on the inflammatory basis in the pathophysiology of mental diseases, focused on the search of biomarkers. Most of these articles were performed using samples from patients obtained from collaborations with several clinical groups, and are focused on the origin and consequences of immune response and inflammation in various diseases, especially on the role of innate immunity in psychosis and depression. The intramural project FlammPEP, leaded by the PI and coordinated with other 8 groups CIBERSAM published several papers this year and one patent has been presented on a new method to predict antipsychotic response in patients after a first psychotic episode. Also, in our preclinical studies (in vivo, ex vivo and in vitro) we shed some light on the way inflammatory signals enter brain structures and their main intracellular pathways. Moreover, the group obtained funds in competitive calls

from public and private institutions and foundations. We received invitations to write some expert reviews on the topic published in high impact journals. As an essential part of our goals, the academic/scientific training of pre- and postgraduate students has a special chapter. During 2015 one PhD Thesis has been completed (obtaining the highest score), on the mechanisms explaining the anti-inflammatory effects of antipsychotics. Our group has a very important participation in the Interuniversity Master on Initiation of research in mental health and other official Masters. Finally, it is important to mention that our group is part of different Research Consortia, such as the Research Institute Hospital 12 de Octubre and the University Institute of Neurochemistry (UCM). Several members have participated in meetings with patients and families. Finally, the group co-coordinated a new edition of the Laboratorio de Ideas for young researchers.

Group 15

Programme: Schizophrenia / Bipolar Disorder

Lead Researcher: Mckenna, Peter J.



Group Members



STAFF MEMBERS: Alonso Lana, Silvia | Canales Rodríguez, Erick Jorge | Moreno Alcázar, Ana | Salgado Pineda, Pilar.

ASSOCIATED MEMBERS: Amann, Benedikt | Gomar Soñes, Jesús Joaquín | Martín Subero, Marta | Monte Rubio, Gemma Cristina | Pomarol Clotet, Edith | Radua Castaño, Joaquín | Romaguera Piñol, Anna | Salvador Civil, Raymond | Sarro Maluquer, Salvador | Valiente Gómez, Alicia | Vicens Soler, Víctor

COLLABORATORS: Ortiz Gil, Jordi.

Main lines of research

The main research areas involve: a) the development and clinical application of multimodal neuroimaging techniques in major psychiatric illnesses such as schizophrenia and bipolar disorder (these neuroimaging techniques are combined with clinical and neuropsychological data in order to study their neuro-anatomical correlates) and b) the execution of clinical trials on new drugs and other treatment strategies.

- Neuroimaging of severe mental illnesses:
 - Multimodal imaging: Usage of new methods of image analysis on different pathologies. Design of new studies involving the development and implementation, in MRI, of new cognitive paradigms in patients and healthy subjects. This has led to several significant findings including the ab-

normality in the Default Mode Network observed in several mental disorders.

- Clinical applicability: New methods are applied and results checked in different clinical populations. The research team mainly works with populations of schizophrenic patients, bipolar patients, schizoaffective patients and first episodes. We currently have several ongoing projects on learning machine algorithms for diagnostic prediction in psychosis (mainly schizophrenia and bipolar disorder) which we hope to eventually lead to more personalized treatments.
- Development of new clinical methods and MRI methods from different modalities (brain connectivity, diffusion MRI (DTI and tractography) and structural MRI), including new meta-analytical

tools for these type of images. New statistical models for diffusion and functional connectivity are being developed. This also includes the generation of a tractographic atlas (atlas of white matter fiber tracts) based on healthy brains, but intended for future clinical applications.

- Development of new therapeutic approaches.

- Development and validation of scales and tests aimed at symptom evaluation.
- Studies on language, cognition and symptoms in psychiatric and neuropsychiatric pathologies (severe mental disorders, Huntington's disease, autism).

Most relevant scientific articles

GOMAR JJ, VALLS E, RADUA J, MARECA C, TRISTANY J, DEL OLMO F ET AL. A Multisite, Randomized Controlled Clinical Trial of Computerized Cognitive Remediation Therapy for Schizophrenia. *Schizophrenia bulletin*. 2015.

POMAROL-CLOTET E., ALONSO-LANA S., MORO N., SARRO S., BONNIN M.C., GOIKOLEA J.M. ET AL. Brain functional changes across the different phases of bipolar disorder. *British Journal of Psychiatry*. 2015;206(2):136-144.

LANDIN-ROMERO R, AMANN BL, SARRÓ S, GUERRERO-PE-DRAZA A, VICENS V, RODRÍGUEZ-CANO E ET AL. Midline Brain Abnormalities Across Psychotic and Mood Disorders. *Schizophrenia bulletin*. 2015.

FULLANA M.A., HARRISON B.J., SORIANO-MAS C., VERVLIT B., CARDONER N., AVILA-PARCET A. ET AL. Neural signatures of human fear conditioning: an updated and extended meta-analysis of fMRI studies. *Molecular Psychiatry*. 2015.

RADUA J., SCHMIDT A., BORGWARDT S., HEINZ A., SCHLAGENHAUF F., MCGUIRE P. ET AL. Ventral striatal activation during reward processing in psychosis a neurofunctional meta-analysis. *JAMA Psychiatry*. 2015;72(12):1243-1251.

Highlights

Our group has extensive experience in the field of psychosis, particularly with respect to neuroimaging techniques.

Among other things, an important finding in 2015 has been to show that patients with bipolar disorder exhibit different patterns of functional brain changes associated with the different phases of the disorder. This year we have also published a multicenter study showing that, contrary to previous findings, cognitive remediation therapy is not effective in patients with schizophrenia.

We are currently working on other innovative projects in therapeutics, such as the world's first trial of deep brain stimulation (DBS) in treatment-resistant schizophrenia, in collaboration with the group of Sant Pau. We are investigating the use of eye move-

ment desensitization and reprocessing therapy (EMDR) in bipolar disorder. We are also participating in clinical trials to find more effective treatments for major depression.

We also focus on the development of new neuroimaging techniques, including novel functional imaging paradigms, new methods for processing white matter images, and new meta-analytic methods for integrating the results of neuroimaging studies.

In parallel with this, we continue with an active programme of pre- and post-doctoral research training. This year three doctoral researchers linked to the group (Dr. Josep Salavert, Dr. Gemma Monté and Dr. Mercè Madre) have been awarded PhDs.

Institution: Fundació para la Investigacion y Docencia María Angustias Giménez (FIDMAG)

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Group 16

Programme: Schizophrenia / Therapeutic Innovation

Lead Researcher: Meana Martínez, José Javier



Group Members



STAFF MEMBERS: Corada Galarreta, Leire | Munarriz Cuezva, Eva.

ASSOCIATED MEMBERS: Ballesteros Rodríguez, Francisco Javier | Barrondo Lakarra, Sergio | Callado Hernández, Luis Felipe | Díez Alarcía, Rebeca | Gabilondo Urquijo, Ane Miren | Gutiérrez Fraile, Miguel | Horrillo Furrundarena, Igor | López de Jesús, Maider | Mollinedo Gajate, Irene | Ortega Calvo, Jorge Emilio | Rivero Calera, Guadalupe | Salles Alvira, Joan | Urigüen Echeverría, Leyre.

COLLABORATORS: Eguiluz Uruchurtu, Iñaki | Elizagarate Zabala, Edorta | Montaña Muro, Mario | Muguruza, Carolina | Palomo Lerchundi, Javier | Querejeta Ayerdi, Imanol | Segarra Echebarría, Rafael.

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

RIVERO G., GABILONDO A.M., GARCIA-SEVILLA J.A., LA HARPE R., MORENTIN B., MEANA J.J. Up-regulated 14-3-3 β and 14-3-3 ζ proteins in prefrontal cortex of subjects with schizophrenia: Effect of psychotropic treatment. *Schizophrenia Research*. 2015;161(2-3):446-451.

RUEDA JR, GUILLÉN V, BALLESTEROS J, TEJADA MI, SOLÀ I. L-acetylcarnitine for treating fragile X syndrome. *The Cochrane database of systematic reviews*. 2015;5:CD010012.

GILABERT-JUAN J., SAEZ A.R., LOPEZ-CAMPOS G., SEBASTIA-ORTEGA N., GONZALEZ-MARTINEZ R., COSTA J. ET AL. Semaphorin and plexin gene expression is altered in the prefrontal cortex of schizophrenia patients with and

without auditory hallucinations. *Psychiatry Research*. 2015;229(3):850-857.

PINACHO R., SAIA G., MEANA J.J., GILL G., RAMOS B. Transcription factor SP4 phosphorylation is altered in the postmortem cerebellum of bipolar disorder and schizophrenia subjects. *European Neuropsychopharmacology*. 2015;25(10):1650-1660.

KELLY B., MCMULLAN M., MUGURUZA C., ORTEGA J.E., MEANA J.J., CALLADO L.F. ET AL. α 2-adrenoceptor antagonists: Synthesis, pharmacological evaluation, and molecular modeling investigation of pyridinoguanidine, pyridino-2-aminoimidazoline and their derivatives. *Journal of Medicinal Chemistry*. 2015;58(2):963-977.

Highlights

- Cooperative R&D agreement between IPROTEOS S.L. and CIBERSAM.
- Technical advice to the Fundación Josefa Recio - Inst. Investigaciones Psiquiátricas.
- Incorporation of Olga Peñagarikano as Ramón y Cajal researcher.
- Project "Modulation of the oxytocin system in a mouse model of Autism Spectrum Disorder" supported by 2015 NARSAD Young Investigator Grant.

Group 17

Programme: Depression / Psychosomatic, Anxiety and Impulse Control Disorders

Lead Researcher: Menchón Magriña, José Manuel



Group Members



STAFF MEMBERS: Giménez Navarro, Mónica

ASSOCIATED MEMBERS: Alonso Ortega, María del Pino | Contreras Fernández, Fernando | Contreras Rodríguez, Oren | Crespo Blanco, José Manuel | Hernández Ribas, Rosa | López Solá, Clara | Real Barrero, Eva | Segalas Cosí, Jacinto | Soria Tomás, Virginia | Soriano Mas, Carles | Subirá Coromina, Marta | Urretavizcaya Sarachaga, Mikel | Vallejo Ruiloba, Julio.

Main lines of research

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

Most relevant scientific articles

ALONSO P., CUADRAS D., GABRIELS L., DENYS D., GOODMAN W., GREENBERG B.D. ET AL. Deep brain stimulation for obsessive-compulsive disorder: A meta-analysis of treatment outcome and predictors of response. PLoS ONE. 2015;10(7).

SUBIRA M., SATO J.R., ALONSO P., DO ROSARIO M.C., SEGALAS C., BATISTUZZO M.C. ET AL. Brain structural correlates of sensory phenomena in patients with obsessive-Compulsive disorder. Journal of Psychiatry and Neuroscience. 2015;40(4):232-240.

FULLANA M.A., HARRISON B.J., SORIANO-MAS C., VERVLIT B., CARDONER N., AVILA-PARCET A. ET AL. Neural signatures of

human fear conditioning: an updated and extended meta-analysis of fMRI studies. Molecular Psychiatry. 2015.

TARREGA S., CASTRO-CARRERAS L., FERNÁNDEZ-ARANDA F., GRANERO R., GINER-BARTOLOME C., AYMAMI N. ET AL. A serious videogame as an additional therapy tool for training emotional regulation and impulsivity control in severe gambling disorder. Frontiers in Psychology. 2015;6(NOV).

HARRISON B.J., FULLANA M.A., SORIANO-MAS C., VIA E., PUJOL J., MARTÍNEZ-ZALACAIN I. ET AL. A neural mediator of human anxiety sensitivity. Human Brain Mapping. 2015.

Highlights

Our research group has several research lines in development. In obsessive-compulsive disorder (OCD), we participate in several international consortium. Among them it is worth mentioning the International OCD Brain Imaging Consortium and the international consortium ENIGMA (Enhancing NeuroImaging Genetics through Meta-Analysis) in which our group participates in the OCD working group. On the other hand, our OCD group has finished an international trial on deep brain stimulation and has participated in the analysis and discussion of the data. A paper on these results is expected to be published along 2016.

Regarding the OCD spectrum, we have participated in the researches promoted by ICOCS (International College of Obsessive-Compulsive Spectrum Disorders) and by Obsessive-Compulsive Research Network (OCRN, which belongs to European College of Neuropsychopharmacology, ECNP). In this field, our group has participated in a series of several papers centered on compulsivity as a transdiagnostic domain. Further, in the context of studying compulsivity as a behavioral construct, we have been collaborating with other CIBER groups on studies of the OCD spectrum, 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 multicenter studies. On the other hand, in the field of unipolar depression, the group is in charge of the development of two work packages within an integrated project ('Epigenetic and environmental factors bracing cognitive impairment and late-onset depression in elderly and early stages of Alzheimer disease'). Further, regarding depression and physical therapies, the group holds biannually a training course on convulsive therapy and other physical therapies.

Group 18

Programme: Psychosomatic, Anxiety and Impulse Control Disorders / Therapeutic Innovation

Lead Researcher: Micó Segura, Juan Antonio



Group Members



STAFF MEMBERS: Llorca Torralba, Mertixell.

ASSOCIATED MEMBERS: Berrocó Domínguez, Esther | Bravo García, Lidia | Gibert Rahola, Juan | Pérez Caballero, Laura | Romero Grimaldi, Carmen | Torres Sánchez, Sonia.

COLLABORATORS: Gallego Gamo, Jesús.

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

MARTÍNEZ-CENGOTITABENGOA M, MACDOWELL KS, ALBERICH S, DÍAZ FJ, GARCÍA-BUENO B, RODRÍGUEZ-JIMENEZ R ET AL. BDNF and NGF Signalling in Early Phases of Psychosis: Relationship With Inflammation and Response to Antipsychotics After 1 Year. *Schizophrenia bulletin*. 2015.

JIMÉNEZ-SÁNCHEZ L, CASTAÑÉ A, PÉREZ-CABALLERO L, GRIFFOLL-ESCODA M, LÓPEZ-GIL X, CAMPA L ET AL. Activation of AMPA Receptors Mediates the Antidepressant Action of Deep Brain Stimulation of the Infralimbic Prefrontal Cortex. *Cerebral cortex* (New York, N.Y. : 1991). 2015.

BORGES G.P., MICO J.A., NETO F.L., BERROCOSO E.. Corticotropin-releasing factor mediates pain-induced anxiety through the ERK1/2 signaling cascade in locus coeruleus neurons. *International Journal of Neuropsychopharmacology*. 2015;18(8):1-6.

ROMERO-GRIMALDI C, BERROCOSO E, ALBA-DELGADO C, MADRIGAL JL, PÉREZ-NIEVAS BG, LEZA JC ET AL. Stress Increases the Negative Effects of Chronic Pain on Hippocampal Neurogenesis. *Anesthesia and analgesia*. 2015;121(4):1078-88.

DUENAS M., SALAZAR A., OJEDA B., FERNÁNDEZ-PALACIN F., MICO J.A., TORRES L.M. ET AL. A nationwide study of chronic pain prevalence in the general spanish population: Identifying clinical subgroups through cluster analysis. *Pain Medicine* (United States). 2015.

Highlights

Throughout 2015 the group has continued along the same lines of research that have previously been developed. There have been important advances in different pathologies that have been published in high impact journals, all of them in collaboration with other groups CIBERSAM or another international group. Specifically, in depression we have helped to clarify the molecular mechanisms involved in antidepressant treatment response of deep brain stimulation (DBS), involving the AMPA receptors. In schizophrenia, we have been able to identify risk / protective involved in first psychotic episodes, specifically related to BDNF and TrkB receptors. In the field of anxiety, we have identified the neurobiological causes underlying the occurrence of anxiety as a result of suffering chronic pain, with a direct involvement of the locus coeruleus and CRF signaling through ERK1 / 2. We have also been able to establish a de-

crease in neurogenesis in the hippocampus when chronic stress is present at a situation of experimental chronic pain, which can justify the presence of depression and cognitive disorders. Finally, a collaborative study nationwide, has been able to set the frequency of mental disorders associated with chronic pain in the Spanish population. In 2015, the group has registered two patents in collaboration CIBERSAM with the University of Seville and the University of Cádiz, specifically an in vitro method for prognosis and prediction of response to treatment with antipsychotics in first psychotic episodes and a process for obtaining the pharmaceutical composition of polymeric nanoparticles for the treatment of neuropathic pain caused by peripheral nerve compression.

Group 19

Programme: Schizophrenia / Psychosomatic, Anxiety and Impulse Control Disorders

Lead Researcher: Palomo Álvarez, Tomás



Group Members



STAFF MEMBERS: Dompablo Tobar, Mónica | Villar Bogalo, María del Pilar.

ASSOCIATED MEMBERS: Aguera Ortiz, Luis Fernando | Aragues Figuero, María | Caso Fernández, Javier Rubén | Hoenicka Blanco, Janet | Jiménez Arriero, Miguel Ángel | Jurado Barba, Rosa | Lobo Satue, Antonio | Molina Rodríguez, Vicente | Moreno Ortega, Marta | Rodríguez Jiménez, Roberto | Sanz Fuentenebro, Francisco Javier.

COLLABORATORS: Bagney Lifante, Alexandra | Guerra Martín Polanco, Noelia | Navío Acosta, M. Mercedes.

Main lines of research

- Schizophrenia. First psychotic episodes.
- Bipolar disorder.
- Addictive disorders.
- Psychosomatic disorders.
- Personality disorders.
- Depression.
- Dementia.
- Molecular and genetic basis, neurocognition, neurophysiology, neuroinflammation and neuroimaging in psychiatric disorders.

Most relevant scientific articles

WU YT, FRATIGLIONI L, MATTHEWS FE, LOBO A, BRETELIER MM, SKOOG I ET AL. Dementia in western Europe: epidemiological evidence and implications for policy making. *The Lancet. Neurology*. 2015.

FERRES-COY A., GALOFRE M., PILAR-CUELLAR F., VIDAL R., PAZ V., RUIZ-BRONCHAL E. ET AL. Therapeutic antidepressant potential of a conjugated siRNA silencing the serotonin transporter after intranasal administration. *Molecular Psychiatry*. 2015.

ISMAIL Z, SMITH EE, GEDA Y, SULTZER D, BRODATY H, SMITH G ET AL. Neuropsychiatric symptoms as early manifestations of emergent dementia: Provisional diagnostic criteria for mild behavioral impairment. *Alzheimer's & dementia: the journal of the Alzheimer's Association*. 2015.

MARTÍNEZ-CENGOTITABENGOA M, MACDOWELL KS, ALBERICH S, DÍAZ FJ, GARCÍA-BUENO B, RODRÍGUEZ-JIMENEZ R ET AL. BDNF and NGF Signalling in Early Phases of Psychosis: Relationship With Inflammation and Response to Antipsychotics After 1 Year. *Schizophrenia bulletin*. 2015.

PINA-CAMACHO L, DEL REY-MEJÍAS Á, JANSSEN J, BIOQUE M, GONZÁLEZ-PINTO A, ARANGO C ET AL. Age at First Episode Modulates Diagnosis-Related Structural Brain Abnormalities in Psychosis. *Schizophrenia bulletin*. 2015.

Highlights

Group G19 develops its scientific activity mainly working on molecular and genetic bases, neurocognition, neurophysiology, neuroinflammation and neuroimaging in psychiatric disorders.

It is important to remark that in 2015 the following projects were granted: 'Exploration of the alterations on the cerebral connectivity for a new typification of schizophrenia' (PI: Vicente Molina) and 'Inflammatory alterations in mental diseases: the role of Nrf2 and inflammasome pathways' (PI: Javier R. Caso).

The Group has also continued with its national and international researches: 'Optimization of Treatment and Management of Schizophrenia in Europe' (OPTiMiSE); 'Environment and genes in Schizophrenia' – Research groups from Madrid Regional Research Council; 'Functional connectivity in inhibitory process involved in alcohol consumption relapse'; 'The role of micro-biota on the origin and consequences of inflammation in depression. Translational research' and 'Characterization of psychophysiological endophenotypes in children of alcoholic parents', amongst others.

Research lines in neurocognition, molecular genetics and neuroinflammation have achieved interesting results. Several PhD Theses have been done and the Group continues with its academic activities coordinating the 'Interuniversity Master Initiation in Research in Mental Health'.

Finally, Dr. Lobo joined our group, G19, incorporating new lines of research within the Dementias area, standing out his project ZARADEMP V: 'Dementia and depression in the elderly community: case-control study on incident cases and the association with 'non-cognitive' psychopathology and comorbidity'.

Group 20

Programme: Depression / Therapeutic Innovation

Lead Researcher: Pazos Carro, Ángel Armando



Group Members



STAFF MEMBERS: Amigo Riu, Josep | Berrueco Saiz, Rubén | Pilar Cuéllar, María Fuencisla

ASSOCIATED MEMBERS: Castro Fernández, Elena | Díaz Martínez, Álvaro Marcelino | Garro Martínez, Emilio | Linge Méndez, Raquel | Marrón Souto, Eva | Valdizán Ruiz, Elsa María | Vidal Casado, Rebeca

COLLABORATORS: Vargas, Verónica.

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

RAPADO-CASTRO M., PAZOS A., FANANAS L., BERNARDO M., AYUSO-MATEOS J.L., LEZA J.C. ET AL. Building up careers in translational neuroscience and mental health research: Education and training in the Centre for Biomedical Research in Mental Health. *Revista de Psiquiatria y Salud Mental*. 2015;8(2):65-74.

ERDOZAIN A.M., RUBIO M., VALDIZAN E.M., PAZOS A., JAVIER MEANA J., FERNÁNDEZ-RUIZ J. ET AL. The endocannabinoid system is altered in the post-mortem prefrontal cortex of alcoholic subjects. *Addiction Biology*. 2015;20(4):773-783.

FERRES-COY A., GALOFRE M., PILAR-CUELLAR F., VIDAL R., PAZ V., RUIZ-BRONCHAL E. ET AL. Therapeutic antidepressant potential of a conjugated siRNA silencing the serotonin transporter after intranasal administration. *Molecular Psychiatry*. 2015.

HERRERO A., PINTO A., COLON-BOLEA P., CASAR B., JONES M., AGUDO-IBANEZ L. ET AL. Small Molecule Inhibition of ERK Dimerization Prevents Tumorigenesis by RAS-ERK Pathway Oncogenes. *Cancer Cell*. 2015;28(2):170-182.

CURIEL-OLMO S., GARCÍA-CASTAÑO A., VIDAL R., PISONERO H., VARELA I., LEÓN-CASTILLO A ET AL. Individualized strategies to target specific mechanisms of disease in malignant melanoma patients displaying unique mutational signatures. *Oncotarget*. 2015.

Highlights

Our group has continued the research on the neuroplasticity mechanisms underlying the pathogenesis of major depression (Wnt/ β -catenin and mTOR), as well as the identification of new potential therapeutic targets for the treatment of depression (5-HT₄ receptor and the endocannabinoid system). As result of the latter goal, a doctoral thesis entitled "Potential of cannabidiol for rapid antidepressant therapy: behavioral, neurochemical, molecular and cellular evidences. Involvement of serotonergic and glutamatergic systems", has been presented by Dr. Raquel Linge. We have also published the related article "Cannabidiol induces rapid-acting antidepressant-like effects and enhances cortical 5-HT/glutamate neurotransmission: role of 5-HT_{1A} receptors", in *Neuropharmacology* (first decile), and a second article has been submitted and is already under review in the same journal.

Regarding academic training, our group continues coordinating the "Máster Interuniversitario de Iniciación a la Investigación en Salud Mental". Additionally, we are currently supervising two doctoral theses.

We have also participated in a collaboration agreement with the pharmaceutical company Servier, evaluating potential antidepressant drugs in behavioral and neurochemical paradigms.

Group 21

Programme: Depression / Psychosomatic, Anxiety and Impulse Control Disorders

Lead Researcher: Pérez Solá, Víctor



Group Members



STAFF MEMBERS: Allende Leal, Saiko | Grasa Bello, Eva M | Justicia Díaz, Azucena | Pujol Nuez, Jesús.

ASSOCIATED MEMBERS: Alonso Solís, Ana | Álvarez Martínez, Enrique | Antonijoan Arbos, Rosa María | Arranz Calderón, María Jesús | Bergé Baquero, Daniel | Bulbena Vilarrasa, Antonio | Clos Batet, Susana | Córcoles Martínez, David | Corripio Collado, Iluminada | de Diego Adeliño, Francisco Javier | Durán-Sindreu Terol, Santiago | Elices Armand Ugon, Matilde | Feliu Soler, Albert | Fullana Rivas, Miquel Àngel | Giménez Badia, Sandra | Martín Blanco, Ana | Oller Canet, Sílvia | Pascual Mateos, Juan Carlos | Pérez Blanco, Josefina | Pérez de los Cobos Peris, José | Pérez Egea, Rosario | Portella Moll, María Jesús | Puigdemont Campos, Dolors | Ramos Ferraz, Liliana | Riba Serrano, Jordi | Sauras Quetcuti, Rosa Blanca | Serra Blasco, Maria | Soler Ribaudi, Joaquín | Tiana Sastre, Thais | Trujols Albet, Joan | Valle Cano, Marta.

COLLABORATORS: Ballester Verneda, M Rosa | Gich Saladich, Ignacio José | Romero Lafuente, Sergio.

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 neuroimaging; treatment resistance biological and genetic biomarkers; identification and evaluation of new therapeutic targets and programs; pharmacogenetics; ICT application and new technologies in the prevention and treatment of depression.
- Psychotic disorders: efficacy and effectiveness of antipsychotic drugs; first episodes of psychosis; genotype-phenotype and environment interaction; neuroimaging; pharmacogenetics; ICT and Apps in m-health for treatment resistant schizophrenia; Deep Brain Stimulation in Treatment Resistant Schizophrenia.
- Personality disorders: mixed treatment in patients with Borderline Personality Disorder (BPD), validation of diagnostic instruments; genetic-environment studies; structural and functional neuroimaging studies on mindfulness effects.

- Mental health therapeutics: efficacy and resistance to treatment; validation of diagnostic and assessment scales; systematic reviews; neuropsychology; neurophysiology; neuroimaging.

New research lines:

- Adjuvant use of Ayahuasca in the treatment of Borderline Personality Disorder; biological and genetic studies of inflammatory processes in major depression; third generation therapies for the treatment of schizophrenia (metacognition).

Most relevant scientific articles

PUIGDEMONT D., PORTELLA M.J., PÉREZ-EGEA R., MOLET J., GIRONELL A., DE DIEGO-ADELINO J. ET AL. A randomized double-blind crossover trial of deep brain stimulation of the subcallosal cingulate gyrus in patients with treatment-resistant depression: A pilot study of relapse prevention. *Journal of Psychiatry and Neuroscience*. 2015;40(4):224-231.

FULLANA M.A., HARRISON B.J., SORIANO-MAS C., VERVLIT B., CARDONER N., AVILA-PARCET A. ET AL. Neural signatures of human fear conditioning: an updated and extended meta-analysis of fMRI studies. *Molecular Psychiatry*. 2015.

RIBA J., VALLE M., SAMPEDRO F., RODRÍGUEZ-PUJADAS A., MARTÍNEZ-HORTA S., KULISEVSKY J. ET AL. Telling true from

false: Cannabis users show increased susceptibility to false memories. *Molecular Psychiatry*. 2015;20(6):772-777.

LEON-CABALLERO J., PACCHIAROTTI I., MURRU A., VALENTI M., COLOM F., BENACH B. ET AL. Bipolar disorder and antibodies against the N-methyl-D-aspartate receptor: A gate to the involvement of autoimmunity in the pathophysiology of bipolar illness. *Neuroscience and Biobehavioral Reviews*. 2015;55:403-412.

CONTRERAS-RODRÍGUEZ O., PUJOL J., BATALLA I., HARRISON B.J., SORIANO-MAS C., DEUS J. ET AL. Functional connectivity bias in the prefrontal cortex of psychopaths. *Biological Psychiatry*. 2015;78(9):647-655.

Highlights

- First randomized clinical trial published of DBS for treatment-resistant major depression. The results suggest that ECP is effective.
- Epigenetic and neuroimaging study in patients with borderline personality disorder. The results showed that childhood traumas affect methylation of certain genes related to the disorder.
- Clinical trial on the effects of mindfulness for the treatment of borderline personality disorder. Mindfulness decreases borderline characteristic symptoms and impulsivity compared to interpersonal effectiveness skills training.
- Collaborative European project for the implementation of ICT in the prevention and treatment of schizophrenia.
- Development of a new technique for the temporal determination of cortisol in hair, as a biomarker of stress and depression. The results are part of a doctoral thesis.

Group 22

Programme: Schizophrenia / Psychosomatic, Anxiety and Impulse Control Disorders

Lead Researcher: Sáiz Ruiz, Jerónimo



Group Members



STAFF MEMBERS: Almeida Nunes, Rosa M | Anaya Suárez, Celia | Grillo Durán, Beatriz.

ASSOCIATED MEMBERS: Artes Rodríguez, Antonio | Baca García, Enrique | Blasco Fontecilla, Hilario | Ibáñez Cuadrado, Ángela | Lahera Forteza, Guillermo | Llerena Ruiz, Adrián | López Castromán, Jorge | Montes Rodríguez, José Manuel | Pérez Rodríguez, Mercedes.

Main lines of research

- Impulse control disorders and impulsive-compulsive spectrum disorders.
- Genetics and pharmacogenetics of mental disorders.
- Epigenetics of mental disorders.
- First psychotic episodes, risk factors in their development and predictors of relapse.
- Affective disorders, bipolar disorder.

Most relevant scientific articles

BLASCO-FONTECILLA H., BACA-GARCÍA E., COURTET P., GARCÍA NIETO R., DE LEON J.. Horror vacui: Emptiness might distinguish between major suicide repeaters and nonmajor suicide repeaters: A pilot study. *Psychotherapy and Psychosomatics*. 2015;84(2):117-119.

LAHERA G., HERRERA S., REINARES M., BENITO A., RULLAS M., GONZÁLEZ-CASES J. ET AL. Hostile attributions in bipolar disorder and schizophrenia contribute to poor social functioning. *Acta Psychiatrica Scandinavica*. 2015;131(6):472-482.

MURRU A, HIDALGO D, BERNARDO M, BOBES J, SAIZ-RUIZ J, ÁLAMO C ET AL. Antipsychotic switching in schizoaffective

disorder: A systematic review. *The world journal of biological psychiatry : the official journal of the World Federation of Societies of Biological Psychiatry*. 2015;:1-19.

PENAS-LLEDO E., GUILLAUME S., DELGADO A., NARANJO M.E.G., JAUSSENT I., LLERENA A. ET AL. ABCB1 gene polymorphisms and violent suicide attempt among survivors. *Journal of Psychiatric Research*. 2015;61:52-56.

CUESTA M.J., SÁNCHEZ-TORRES A.M., CABRERA B., BIOQUE M., MERCHAN-NARANJO J., CORRIPIO I. ET AL. Premorbid adjustment and clinical correlates of cognitive impairment in first-episode psychosis: The PEPsCog Study. *Schizophrenia Research*. 2015;164(1-3):65-73.

Highlights

The research activity of CIBERSAM Group 22 in 2015 has been focused on the ongoing investigation lines that we maintain. Among them include:

- Active participation in the AGES-CM, PEPS and 2EPS projects, all of them related to the genetic-environment interaction, and follow-up of patients with first psychotic episodes, which have given rise to publications and have enabled us to participate on the Cohort Project.
- Several studies related to suicidal behavior, the initiatives of international collaboration, such as WORECA Project (World for Suicide Research Consortium) for the collection of data in America, Africa and Europe, as well as publications related to genetic markers, risk prediction and new models for understanding the problem.
- In the field of schizophrenia, we continued with the study of factors associated to cognitive impairment and their possible therapeutic approaches.
- We have not forgotten the clinical issues and their therapeutic approach, with articles and clinical trials focused to these issues that need robust data for translation into practice.

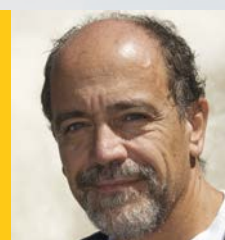
- Within the O.C.D. Program, we have got an ISCI-II Grant for the Project: "Genetic and epigenetic mechanisms in the refractory obsessive-compulsive disorder: development and validation of a cell model by reprogramming". Also, as an activity of the Working Group of the Spanish Society of Psychiatry, we are participating in the development of a clinical guideline on drug treatment of this disease.
- We participated in two CIBERSAM Intramural projects, one dealing with stressful and epigenetic factors and the risk of developing psychopathology in adolescence and the other with the social cognition evaluation.

We have also carried out other actions such as organizing a "First Meeting between Researchers in Mental Health, Patient and Relatives" held successfully with participation of lead researchers from different CIBERSAM groups..

Group 23

Programme: Therapeutic Innovation / Schizophrenia

Lead Researcher: Sanjuán Arias, Julio



Group Members



STAFF MEMBERS: García Martí, Gracián | Gilabert Juan, Javier | Llácer Iborra, Blanca.

ASSOCIATED MEMBERS: Aguilar García Iturrospe, Eduardo Jesús | Carot Sierra, José Miguel | De la Iglesia Vaya, María | Gadea Doménech, Marien | González Piqueras, José Carlos | Herrero Sebastián, Neus | Ivorra Martínez, José Luis | Leal Cercos, Carmen | Moltó Ruiz, María Dolores | Nacher Roselló, Juan Salvador | Olucha Bordonau, Francisco | Rivero Martín, Olga | Tolosa Montero, Amparo.

COLLABORATORS: Brotons Girona, Olga | Escartí Fabra, M. José | Jover Martínez, Manuel | Lorente Rovira, Esther.

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 multi-center 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 psychosocial intervention in severe mental disorders.

Most relevant scientific articles

PINA-CAMACHO L, DEL REY-MEJÍAS Á, JANSSEN J, BIOQUE M, GONZÁLEZ-PINTO A, ARANGO C ET AL. Age at First Episode Modulates Diagnosis-Related Structural Brain Abnormalities in Psychosis. *Schizophrenia bulletin*. 2015.

SÁNCHEZ-MORA C., RAMOS-QUIROGA J.A., BOSCH R., CORRALES M., GARCÍA-MARTÍNEZ I., NOGUEIRA M. ET AL. Case-control genome-wide association study of persistent attention-deficit hyperactivity disorder identifies FBXO33 as a novel susceptibility gene for the disorder. *Neuropsychopharmacology*. 2015;40(4):915-926.

SÁNCHEZ-PÉREZ A.M., ARNAL-VICENTE I., SANTOS F.N., PEREIRA C.W., ELMLILI N., SANJUAN J. ET AL. Septal projections to nucleus incertus in the rat: Bidirectional pathways for modulation of hippocampal function. *Journal of Comparative Neurology*. 2015;523(4):565-588.

CUESTA M.J., SÁNCHEZ-TORRES A.M., CABRERA B., BIOQUE M., MERCHAN-NARANJO J., CORRIPIO I. ET AL. Premorbid adjustment and clinical correlates of cognitive impairment in first-episode psychosis: The PEPsCog Study. *Schizophrenia Research*. 2015;164(1-3):65-73.

GUTIÉRREZ-ZOTES A., LABAD J., MARTIN-SANTOS R., GARCÍA-ESTEVE L., GELABERT E., JOVER M. ET AL. Coping strategies and postpartum depressive symptoms: A structural equation modelling approach. *European Psychiatry*. 2015;30(6):701-708.

Highlights

In collaboration with the Polytechnic University of Valencia we have launched an application for the evaluation and monitoring of the first psychotic episodes. Such application will provide direct information on the clinical status, treatment, side effects and allow the identification of symptoms and prevention of psychotic relapse. This application appears directly linked to the electronic medical record.

Although the application of this device is restricted now to Hospital Clínico (area 5), the intention in the near future is to extend it to all centers of Valencia including Primary Care.

The group has completed the Prometheus Project as group of research excellence Valencia and we have submitted a proposal for the new call.

The group has submitted for publication the results of the multicenter collaborative project led by Dr. Aguilar in which shows the changes in the fMRI after cognitive therapy in patients with persistent psychotic hallucinations.

The Group of Professor J. Nacher has begun collaborations to different projects in animal models of schizophrenia with the groups JC Leza, Mico JA and F. Artigas.

Group 24

Programme: Bipolar Disorder / Mental Disorders of the Child and Adolescent

Lead Researcher: Tabarés-Seisdedos, Rafael



Group Members



STAFF MEMBERS: Amezcua García, Cristina | Correa Ghisays, Patricia.

ASSOCIATED MEMBERS: Balanza Martínez, Vicent | Catalá López, Ferrán | Fuentes Dura, Inmaculada | Geijo Barrientos, Emilio | Girón | Giménez, Manuel | Gómez Beneyto, Manuel | Martínez Pérez, Salvador | Munáriz Ferrandis, Mikel | Salazar Fraile, José | Selva Vera, Gabriel.

Main lines of research

- Cognitive endophenotypes and biomarkers in schizophrenia, bipolar Patients and Their relatives of the 1st degree.
- Global Burden of Disease studies.
- Systematic reviews and meta-analysis network.
- Multimorbidity in Patients With complex diseases: such as CNS disorders, cancer or metabolic diseases.
- Neurogenetics and Cell Therapy (stem cells).
- Nutritional Psychiatry.

Most relevant scientific articles

VOS T., BARBER R.M., BELL B., BERTOZZI-VILLA A., BIRYUKOV S., BOLLIGER I. ET AL. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*. 2015;386(9995):743-800.

GBD 2013 RISK FACTORS COLLABORATORS, FOROUZANFAR MH, ALEXANDER L, ANDERSON HR, BACHMAN VF, BIRYUKOV S ET AL. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* (London, England). 2015.

SARRIS J, LOGAN AC, AKBARALY TN, PAUL AMMINGER G, BALANZÁ-MARTÍNEZ V, FREEMAN MP ET AL. International Soci-

ety for Nutritional Psychiatry Research consensus position statement: nutritional medicine in modern psychiatry. *World psychiatry : official journal of the World Psychiatric Association (WPA)*. 2015;14(3):370-1.

GARCÍA-LÓPEZ R., POMBERO A., DOMÍNGUEZ E., GEJO-BARRIENTOS E., MARTÍNEZ S.. Developmental alterations of the septohippocampal cholinergic projection in a lissencephalic mouse model. *Experimental Neurology*. 2015;271:215-227.

MEDEL-HERRERO A., AMATE J.M., SAZ-PARKINSON Z., GÓMEZ-BENEYTO M.. Changing trends in hospitalization rates associated with psychosis: Spain, 1980–2009. *Social Psychiatry and Psychiatric Epidemiology*. 2015;50(12):1843-1855.

Highlights

As members of the Global Burden of Disease network we have participated in the publication of the Global Burden of Disease study 2013 in *The Lancet* (2015 Nov 28;386(10009):2145-91). Among the most relevant findings of this study is the epidemiologic transition, on a global level, from infectious diseases to chronic non-communicable diseases during the period 1990-2013. An excellent example is the increase in the burden of disease (measured in DALYs and YLDs) due to mental disorders such as depression, alcohol dependence and schizophrenia, and neurological diseases such as dementia.

In 2015, we have edited a Research Topic in *Frontiers* entitled "Direct and Inverse comorbidities between complex disorders" (<http://journal.frontiersin.org/researchtopic/2036/direct-and-inverse-comorbidities-between-complex-disorders>) with the aim of helping to understand unexpected associations between apparently different diseases/illnesses. We have also published 7 original articles, with diverse perspectives ranging from epidemiology to bioinformatics, about diseases such as malaria, bipolar disorder, dementia (e.g. Alzheimer's), Down's syndrome, glioblastoma and lung cancer.

Finally, as members of the Cognitive Decline Group of the European Innovation Partnership for Active and Healthy Ageing (EIPAH), we are playing an active role in defining a clinically useful position regarding Mild Cognitive Decline (doi: 10.1016/j.maturitas.2015.10.008). In addition, as founding members of the International Society for Nutritional Psychiatry Research, we are participating in the establishment of a consensus about nutritional medicine in modern psychiatry (*World Psychiatry*. 2015 Oct; 14(3): 370–371; *Lancet Psychiatry*. 2015 Mar;2(3):271-4. doi: 10.1016/S2215-0366(14)00051-0.)

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Website: <http://ideaspsychiatry.org/>

Group 25

Programme: Bipolar Disorder / Therapeutic Innovation

Lead Researcher: Vieta Pascual, Eduard



Group Members



STAFF MEMBERS: Bonnin Roig, Caterina del Mar | Hidalgo Mazzei, Diego Alberto | Jiménez Martínez, Ester | Murru, Andrea | Pacchiarotti, Isabella | Sánchez Moreno, José.

ASSOCIATED MEMBERS: Benabarre Hernández, Antonio | Blanch Andreu, Jordi | Colom Victoriano, Francesc | De Dios Perrino, Consuelo | Gasto Ferrer, Cristobal | Goikolea Alberdi, José Manuel | Grande I Fullana, Iria | Martín Santos Laffont, Rocío | Martínez Aran, Anabel | Navarro Odriozola, Víctor | Navines de la Cruz, Ricard | Torrent Font, Carla | Undurruga Fourcade, Juan Pablo | Valentí Ribas, Marc.

COLLABORATORS: Comes Forastero, Mercè.

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

GRANDE I, BERK M, BIRMAHER B, VIETA E. Bipolar disorder. *Lancet* (London, England). 2015.

LEON-CABALLERO J., PACCHIAROTTI I., MURRU A., VALENTI M., COLOM F., BENACH B. ET AL. Bipolar disorder and antibodies against the N-methyl-d-aspartate receptor: A gate to the involvement of autoimmunity in the pathophysiology of bipolar illness. *Neuroscience and Biobehavioral Reviews*. 2015;55:403-412.

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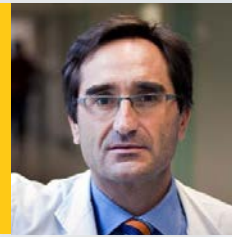
Highlights

- Development of clinical guidelines for working with relatives of patients with bipolar disorder.
- Demonstration of long-term efficacy of functional rehabilitation for bipolar disorder.
- Show predictive value of cognitive reserve in bipolar disorder.
- Project Monitoring sign and symptoms of psychotic or manic first-episode patients with a smart-phone application.
- Project to study whether trehalose can be useful as additional treatment in depression.

Group 26

Programme: Schizophrenia / Therapeutic Innovation

Lead Researcher: Crespo Facorro, Benedicto



Group Members



STAFF MEMBERS: De la Fuente González, Noemí | Roiz Santiáñez, Roberto M. | Setién Suero, M^a Esther.

ASSOCIATED MEMBERS: Ayesa Arriola, Rosa | Gaite Pindado, Luis | Gómez del Barrio, José Andrés | Herrán Gómez, José Andrés | Herrera Castanedo, Sara | Mata Pastor, Ignacio | Ortiz García de la Foz, Víctor | Pelayo Terán, José M^a | Pérez Iglesias, Rocío | Rodríguez Sánchez, José Manuel | Suárez Pinilla, Paula | Vázquez Barquero, José Luis | Vázquez Bourgon, Javier.

COLLABORATORS: Tordesillas Gutiérrez, Diana.

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.
- Physical health in severe mental disorders.

Most relevant scientific articles

SAMARA MT, LEUCHT C, LEEFLANG MM, ANGHELESCU IG, CHUNG YC, CRESPO-FACORRO B ET AL. Early Improvement As a Predictor of Later Response to Antipsychotics in Schizophrenia: A Diagnostic Test Review. *The American journal of psychiatry*. 2015;172(7):617-29.

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ics Consortium et al. LD Score regression distinguishes confounding from polygenicity in genome-wide association studies. *Nature genetics*. 2015;47(3):291-5.

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Highlights

Our research group has continued the progress of several research projects that were initiated in the past two years on non-affective psychosis, neuroimaging, genomic, pharmacogenomics,... And we also have got funding to carry out new projects:

- Exp.: PIE15/00079. Title: Personalized medicine in HCV infection: understanding and predicting hepatic and systemic responses in the era of the new antiviral Drugs. Agency: MINECO. Instituto de Salud Carlos III. "AES de Proyectos Integrados de Excelencia 2014" call. (PI: J. Crespo);
- Exp.: SAF2015-71526-REDT. Title: Brain development and early stressful conditions in mental health: the mediating role of epigenetic mechanisms and neuroimaging correlates. (PI: L. Fañanas). Call: Acciones de Dinamización de "Redes de Excelencia" from MINECO Agency;
- Exp.: PIE14/00031. Title: Understanding Obesity (Ob), Metabolic Syndrome (MetS), Type 2 Diabetes (T2DM) and Fatty Liver Disease (FL): a multidisciplinary approach. Agency: MINECO. Instituto de Salud Carlos III. "AES de Proyectos Integrados de Excelencia 2014" call. (PI: J.M. Mato).

It is of note that our group published during 2015 six articles in scientific journals ranked in the first decile in JCR (Web of Science) with an special mention to an article published in *Nature* describing common genetic variants influence human subcortical brain structures.

As part of our major interest in building up solid research and scientific collaborations with international group, we keep up our active involvement in ENIGMA, ENPACTSZ, PEIC, PGC and also we have established a new and productive collaboration with the Brain Center Rudolf Magnus (BCRM) at the University Medical Center (UMC), Utrecht (The Netherlands), with Prof. Neeltje van Haren and Prof. Dr. René Kahn. Exp.: JC2015-00351. Title: The better understanding of the pathophysiology of neurocognitive deficit in psychotic disorders using neuro-imaging.

We have also applied for a international patent to the OEPM on genomic variations and treatment response "Método de monitorización de tratamiento antipsicótico" (PCT/ES201/5070608). Inventors: Prof. Jesús Vicente SAINZ MAZA and Prof. Benedicto Crespo Facorro.

Linked Research Groups

RESEARCH PROGRAMMES: MENTAL DISORDERS OF THE CHILD AND ADOLESCENT; AND PSYCHOSOMATIC, ANXIETY AND IMPULSE CONTROL DISORDERS.

- **Miguel Casas Brugué** (Fundación Hospital Universitari Vall d'Hebron - Institut de Recerca, Barcelona)

Group Members: Oscar Andi3n Pérez | Rosa María Bosch Muns3 | María Dolores Braquehais Conesa | Francisco Collazos Sánchez | Marc Ferrer Vinardell | Nuria Gómez Barros | Carlos Jacas Escarcelles | Pilar Lusilla Palacios | Gemma Nieva Rifa | José Antonio Ramos Quiroga | Marta Ribases Haro | Carlos Roncero Alonso | Cristina Sánchez Mora | Sergi Valero Ventura.

RESEARCH PROGRAMMES: BIPOLAR DISORDER AND SCHIZOPHRENIA

- **Elizabet Vilella Cuadrada** (Fundación Institut d'Investigació Sanitària Pere Virgili, Tarragona)

Group Members: | Nerea Abasolo Zábalo | Francisco Aguilera Inés | Yolanda Alonso Pérez | María José Cortés Ruíz | Joan de Pablo | José Gabriel Franco Vázquez | Ana Milena Gaviria Gómez | Alfonso Gutiérrez Zotes | Fernando López Seco | Rafael Martínez Leal | Lourdes Martorell Bonet | Adela Masara Marín | Laura Ortega Sanz | Cristina Sáez | Montserrat Solé Moix | Joaquín Valero Oyarzabal.

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