

The logo for Fundación Centro Investigación Enfermedades Neurológicas (cièn) is displayed in a stylized, blue, lowercase font. The letters 'i' and 'e' have two dots above them, and the 'n' has a distinctive shape with a vertical stroke on its right side.

Fundación Centro Investigación
Enfermedades **Neurológicas**

2011

Annual Report

CIEN Foundation
Research Center for
Neurological Diseases Foundation

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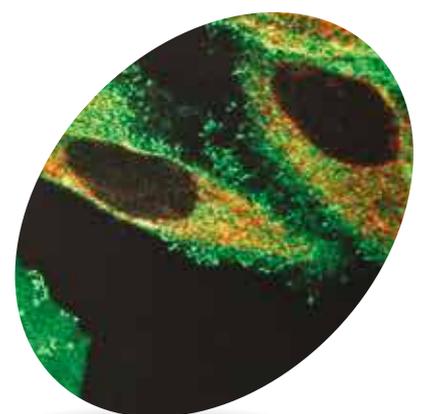
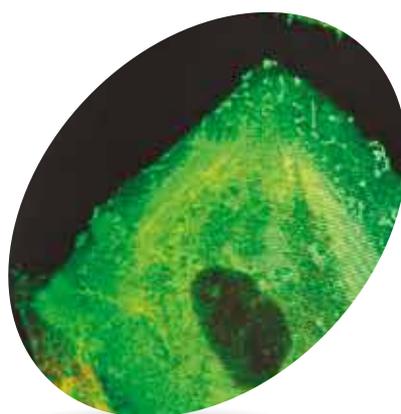
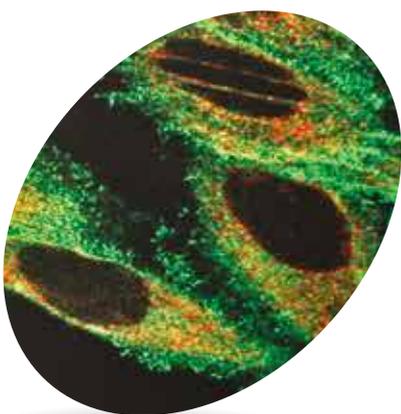


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Overview

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1.1 Who we are



A foundation from the public sector

The Research Center for Neurological Diseases Foundation is a non-profit foundation from the public sector within the scope and competence of the State, depending on the Ministry of Science and Innovation through the Carlos III Institute of Health.

It was established by resolution of the Council of Ministers on December 27, 2002 in order to support, promote and coordinate research into neurological diseases, with special emphasis on neurodegenerative diseases, joining and coordinating efforts of Spanish leading research groups.

Working closely with the Queen Sophia Foundation

The CIEN Foundation represents the success of the "public-private" management model. Since its foundation, it works closely with the Queen Sophia Foundation coordinating and managing the research carried out in the Alzheimer Center of the Queen Sophia Foundation articulated through the UIPA (Alzheimer Project Research Unit).



CIEN Foundation headquarters have been located in the offices of the Alzheimer Center of the Queen Sophia Foundation since April 2007, according to an agreement signed with this Foundation, dated on January 18, 2006. Under this agreement, the Queen Sophia Foundation donated the complex built in Vallecas for the development of the Alzheimer's Project, a social and healthcare approach aimed at facing the consequences of Alzheimer's Disease on patients and their families.



Experts in global management of research into neurodegenerative diseases

Among the CIEN Foundation tasks, several actions are taken to facilitate the impact of scientific advances on clinical practice and, consequently, on patients' welfare. These actions include promoting the implementation of coordinated research projects on neurological diseases; participating in calls from national and

international funding agencies; and developing education programs through specific actions such as seminars, training programs for fellows, doctoral theses and any other action that may contribute to training.

In addition to these actions and UIPA management, the CIEN Foundation is also in charge of managing the CIBERNED (Center for Networked Biomedical Research on Neurodegenerative Diseases), although the activities of the CIEN Foundation regarding CIBERNED are not the subject of this report.



1. OVERVIEW

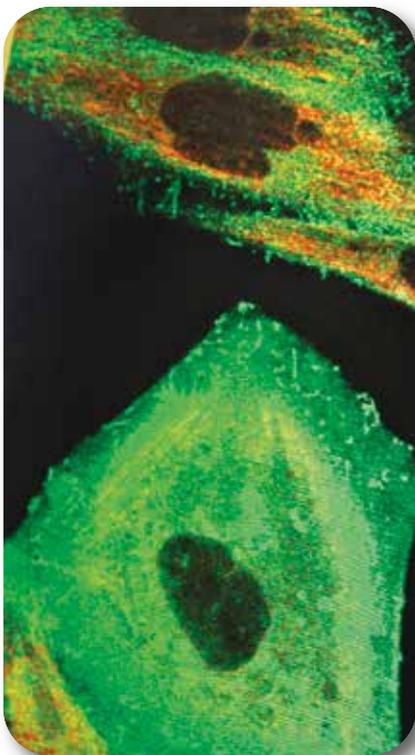
An innovative, integrated vision of the fight against AD

The CIEN Foundation shares an innovative approach to the fight against Alzheimer's Disease in which research is one of the mainstays. Such integrated model, which aims to face the disease from different angles, materialized through the Alzheimer's Project with the building of the Alzheimer Center of the Queen Sophia Foundation where the following four key areas come together:



1. A live-in residence for 156 Alzheimer's patients.
2. A day-care outpatient center for 40 Alzheimer's patients.
3. An Alzheimer's research center: the so-called Alzheimer's Disease Research Unit (UIPA), managed by the CIEN Foundation.
4. A training center for healthcare staff, relatives and volunteers.

UIPA management has been entrusted to the CIEN Foundation and the work related to healthcare and training, to the Council of Family and Social Affairs of the Community of Madrid. This model has constantly tried to bring wills together and combine the interests of all the sectors involved: (Central, Regional and Local) Government and the Civil Society.



Center of Reference in Alzheimer's Disease Research in Spain. Integrated into the International Network of Centers of Excellence in Neurodegenerative Disease Research

Currently, the CIEN Foundation is positioned as a reference institution in research on Alzheimer's disease and related neurodegenerative dementias. In 2011 the Research Unit of the Alzheimer Center of the Queen Sophia Foundation and CIBERNED, both managed by the CIEN Foundation and ISCIII, were designated as Centers of Excellence in neurodegenerative disease research by the European Union. They are the only two Spanish institutions with this qualification participating in the Joint Programming for Neurodegenerative Diseases (JPND), an European initiative launched to join forces and boost research on these diseases. This means being integrated into the International Network of Centers of Excellence in Neurodegenerative Disease Research (CoEN). Both entities, equipped with the latest technology, will make their excellent facilities available to the European program. In addition, CIBERNED brings its critical mass of research: more than 500 researchers.



1.2 The CIEN Foundation in 2011

Key figures

- ▶ The budget devoted to research and managed by the CIEN Foundation increased by 18% up to nearly €4 million.
- ▶ 31% of the Foundation budget comes from the General State Budget through the ISCIII.
- ▶ Private funding for research projects increased through agreements with sponsors, representing 20% of revenues compared to 15% in 2010.
- ▶ The continued financial commitment of the Queen Sophia has allowed contributions exceeding €2.1 million, which will be executed over the next four years.

Scientific activity

- ▶ Publications in scientific journals: 44.
19% increase compared to 2010.
- ▶ Book Publications: 14.
180% increase compared to 2010.
- ▶ Research projects: 43.
23% increase compared to 2010.
- ▶ Participation in conferences: 108.
104% Increase compared to 2010.
- ▶ Participation in courses: 85.
67% increase compared to 2010.



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Highlighted events

- ▶ The CIEN Foundation has been entrusted with the administrative and economic management of three new initiatives: the ISCIII European Project Office, the Center of Reference for Control of Endemic Diseases in Equatorial Guinea Project and the National School of Health-ISCIII International Cooperation Fellowships for postgraduate studies.
- ▶ The CIEN Foundation and the CIBERNED are integrated into the International Network of Centers of Excellence in Neurodegenerative Disease Research (CoEN), being the only two Spanish institutions to take part in the Joint Programming for Neurodegenerative Diseases (JPND).
- ▶ Pablo Martínez Martín, Scientific Director of the UIPA, represented Spain at the Scientific Research Agenda Healthcare Workshop, held in London in March 2011, from the Joint Programming in Neurodegenerative Diseases of the European Commission.
- ▶ The number of research projects resulting from external funding and the research activity conducted through internal projects from the different departments has increased remarkably compared to 2010.
- ▶ The implementation of the Vallecas Project will mean a major economic, scientific boost for the present and future of the CIEN Foundation.
- ▶ The total number of brain tissue donors to BT-CIEN increased by 35% and reached 547 on December 31, 2011.
- ▶ The BT-CIEN received 99 brain donations in 2011, representing an increase in the activity of 55% compared to 2010.
- ▶ Over 5,700 studies on Magnetic Resonance Imaging have been carried out in the UIPA Neuroimaging Unit.
- ▶ The UIPA Neuroimaging Unit has conducted 24 research projects and 2 clinical trials.



1.3 Letter from the Managing Director of the CIEN Foundation

Dear benefactors, contributors and friends of the CIEN Foundation.

As Managing Director of the Research Center for Neurological Disease Foundation (CIEN Foundation), an institution in charge of managing and coordinating the Alzheimer's Project Research Unit (UIPA) promoted by the Queen Sophia Foundation, I am addressing you to assess our activity over the year 2011. It is my duty to begin this letter underlining that the CIEN Foundation has significantly increased its



research activity and performance has been highly satisfactory.

Among the initiatives, the definitive launch of the "Vallecas Project" deserves a special mention; around 1,200 volunteers will get involved in the project. This work is addressed from an integrated perspective by developing a social awareness and fundraising campaign: the "Christmas Tree of Memories" ("Árbol de Navidad de los Recuerdos"). This project has been implemented in collaboration with the Queen Sophia Foundation and the Caja Madrid Social Project as hundreds of citizens have contributed with their "Christmas memories". For the recruitment of volunteers, associations and senior centers within the field of our activity have been involved in the research project which, in our opinion, is an exemplary model of public-private participation and social significance.

In addition, we have kept encouraging cohesion among groups of researchers in the field of neurodegenerative diseases to promote excellence in research on these pathologies. Joint work and combined efforts between the CIEN Foundation and the CIBERNED have allowed both institutions to be incorporated into the International Network of Centers of Excellence in Neurodegenerative Disease Research (CoEN). With this incorporation, our leadership and research excellence stand out while, in the mid term, it will result in opening new ways of funding research projects.

In this respect, 2011 has been characterized by the optimization of economic resources and the search for new sponsors and benefactors. Overall managed funds increased by 18% with a budget of €4 million in 2011. The funding



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allocated within the General State Budget, received as official grants from the Ministry of Science and Innovation through the Carlos III Institute, has remained at similar levels to those from previous years, but our competences in economic and administrative management have increased. Specifically, three new initiatives show the confidence, transparency and effectiveness of our management model: we have taken on the duties as Carlos III Institute of Health European Project Office , we lead the Center of Reference for the Control of Endemic Diseases in Equatorial Guinea Project and, finally, we coordinate the National School of Health-ISCIII International Cooperation Fellowships for postgraduate studies.

These new areas of activity enhance our international scope, top priority that we expect to keep actively promoting. The development and participation in several training programs also show such internationalization. Among others, the M+VISION Program is highlighted, a training program on biomedical imaging between the Massachusetts Institute of Technology (MIT) and the Community of Madrid.

In budgetary terms, I must emphasize the continued commitment of the Queen Sophia Foundation, whose contribution is critical to our research activity, as well as the increase in other resources from contributions, donations and endowments, which in 2011 have represented around 20% of our annual budget. In addition to the important social significance achieved by the "Vallecas Project", the Tissue Bank BT-CIEN has also been highly relevant to strengthen and encourage relations with patients and family associations. We have fostered our relations with media, with the dual purpose of contributing to disseminate

scientific knowledge and raise public awareness about the relevance of research.

I would like to express my most sincere gratitude to the Queen Sophia Foundation and to all institutions, partner companies, associations and ordinary citizens, whose commitment and involvement are still of great significance, not to mention the daily teamwork carried out by all researchers, administrative and support staff as well as volunteers at the CIEN Foundation. The success of our institution is the result of their work and we will continue supporting their training and promoting grants and fellowships in prestigious international centers.

María Ángeles Pérez Muñoz
Managing Director of the CIEN Foundation



1.4 Letter from the Scientific Director of the UIPA

Dear benefactors, collaborators and friends of the CIEN Foundation.

As Scientific Director of the Alzheimer's Project Research Unit (UIPA), managed by the CIEN Foundation and promoted by the Queen Sophia Foundation, I am addressing you, once again, to evaluate our activity during 2011. It has certainly been a difficult year in which the economic crisis has called into question the future of research and researchers in Spain. However, in the UIPA we have carried on with

our research activities, optimizing resources and ensuring, as far as possible, the implementation of initiatives. We have consolidated ongoing projects and launched new ones, some of them pioneers in our country. We have also set up structures for our research staff and boosted our international influence and spirit of leadership. In this sense, until the end of 2011, our activity has resulted in 43 ongoing research projects and a significant increase in scientific productivity: we have published 44 articles in scientific journals and 14 book chapters; we have also participated in conferences (108 papers and communications) and 85 courses (as organizers or invited lecturers).

Our constant effort has been acknowledged by the European Union with the designation of our Foundation, together with the CIBERNED, as "Center of Excellence" of the European Network in Neurodegenerative Disease Research (CoEN) in 2011. Such designation enables us to be part of the Joint Programming for Neurodegenerative Diseases and be integrated into the CoEN together with leading national and international research groups. In May 2011, this participation materialized in the first call for projects from the JPND (Research) with the granting of a project for the optimization of biomarkers and the harmonization of their use in research and subsequent application in hospitals and health centers, an initiative that involves the participation of several Spanish researchers.

Among our milestones, at research level the expansion and consolidation of the "Vallecas Project" must be highlighted. After the pilot study conducted in 2010 with the help of 200 volunteers, in 2011 the project was launched with the purpose of including 1,200 volunteers thanks to the support of the Queen Sophia



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Foundation, AFALContigo National Association and Caja Madrid Social Project. Currently, it is one of the most ambitious studies about dementia in our country and aims to identify individuals at risk of developing Alzheimer's disease prior to disease onset.

Regarding the projects already developed and completed in the UIPA, let me point out the presentation in 2011 of the research results from the first DEMCAM study, carried out in our Department of Neuroimaging. This project, aimed at determining more efficiently which individuals with cognitive mild impairment may develop some sort of dementia, including AD, has received funding from the Queen Sophia Foundation, GE Healthcare and the EULEN Foundation. This contribution proves our sponsors' confidence in the CIEN Foundation research teams. This innovative study, based on the combination of the 3-Tesla Magnetic Resonance Imaging and artificial intelligence, also reflects our commitment to be a link between research and society.

Besides these projects, I am honored to confirm the positive activity carried out by our Tissue Bank: BT-CIEN. One year after being inaugurated, the total number of brain tissue donors has increased up to 547 on December 31, 2011, a figure 15% higher than last year. Likewise, the activity of collection and preservation of brain tissue and other biological samples for use in research, as well as the important work on social awareness and involvement, make it a reference bank in Spain. This is also corroborated by the increased institutional participation and collaboration with other similar centers and tissue banks.

Undoubtedly, these are some of the most significant events that have marked the year

2011, although you will find more detailed information about each of the 4 departments that make up the UIPA in the current report.

I would not like to conclude these lines without acknowledging the support of our sponsors and institutions that rely on us, enabling us to offer our researchers the tools to carry out their work. I would also like to thank each and every one of the professionals working at the CIEN Foundation, without whom we could not meet the goals we have set: to gain further insight into neurodegenerative diseases and make these advances offer alternatives for diagnosis, new therapies, improvements in patient care and in the life quality of those patients suffering from any neurodegenerative disease causing dementia.

Dr. Pablo Martínez Martín
Scientific Director of the UIPA



1.5 Organizational Chart

CIEN Foundation Board of Trustees:

The Board of Trustees is responsible for the government and representation of the CIEN Foundation as well as for the fulfillment of the Foundation objectives, administration and management of its capital assets. Board members represent all sectors involved in neurological diseases research: public institutions related to the field of health, research, social and industrial policy, technology, business and education.

Chartered as a collegiate body, the Board of Trustees is composed of the following members:

CIEN FOUNDATION BOARD OF TRUSTEES		
<i>The members of the CIEN Foundation Board of Trustees on December 31, 2011 are the following:</i>		
Position	Title	Name
Honorary Chair	Chief of the MICINN	Cristina Garmendia Mendizábal
Chair	Secretary of State for Research	Felipe Pétriz Calvo
Foundation Advisors	Research Secretary's Advisors	Tomás Fraile Santos Agustín Larrañaga Elorriaga
Vice Chair	Director of the Carlos III Institute of Health	José Jerónimo Navas Palacios
<i>Ex officio</i> member	General Manager of Research and Management for the I+D National Plan	Montserrat Torné i Escasany
<i>Ex officio</i> member	Secretary General of Health from the Ministry of Health	Alfonso Jiménez Palacios 1*
<i>Ex officio</i> member	Head of Social and Industrial Policy from the Economic Office of the Prime Minister	Xosé Antón García Díaz
<i>Ex officio</i> member	General Manager of the Quality Agency from the National Health System, Ministry of Health	Carmen Moya García
Representing <i>Ex officio</i> member	Chair of the CSIC State Agency	Rafael Rodrigo Montero
<i>Ex officio</i> member	Deputy Director of Evaluation and Research Promotion, ISCIII	Joaquín Arenas Barbero
Elected member, Andalusia	General Manager of Research, Technology and Enterprise	María Sol Calzado García
Elected member, Community of Valencia	General Manager of Planning, Evaluation and Health Research from the Conselleria Sanidad, Generalitat Valenciana	Pilar Viedma Gil de Vergara
Elected member, Canary Islands	General Manager of Welfare Programs from the Canary Health Service	Hilda Sánchez Janáriz 2*



1. OVERVIEW

CIEN FOUNDATION BOARD OF TRUSTEES		
Position	Title	Name
Secretary	Deputy Director of Research into Cell Therapy and Regenerative Medicine, ISCIII	Javier Arias Díaz
Legal Advisor	State Attorney. Ministry of Education, Social Policy and Sport	Pablo Hernández Lahoz Ortíz
Secretary Support	Deputy Director of Research into Cell Therapy and Regenerative Medicine, ISCIII	Jesús González Ayuso José Luis Chavarría del Valle
Managing Director	Managing Director from the Research Center for Neurological Disease Foundation	Maria Ángeles Pérez Muñoz

⊙ Changes produced in 2011

1* In November 2011, replacing José Martínez Olmos

2* In November 2011, replacing Juana María Reyes Melián

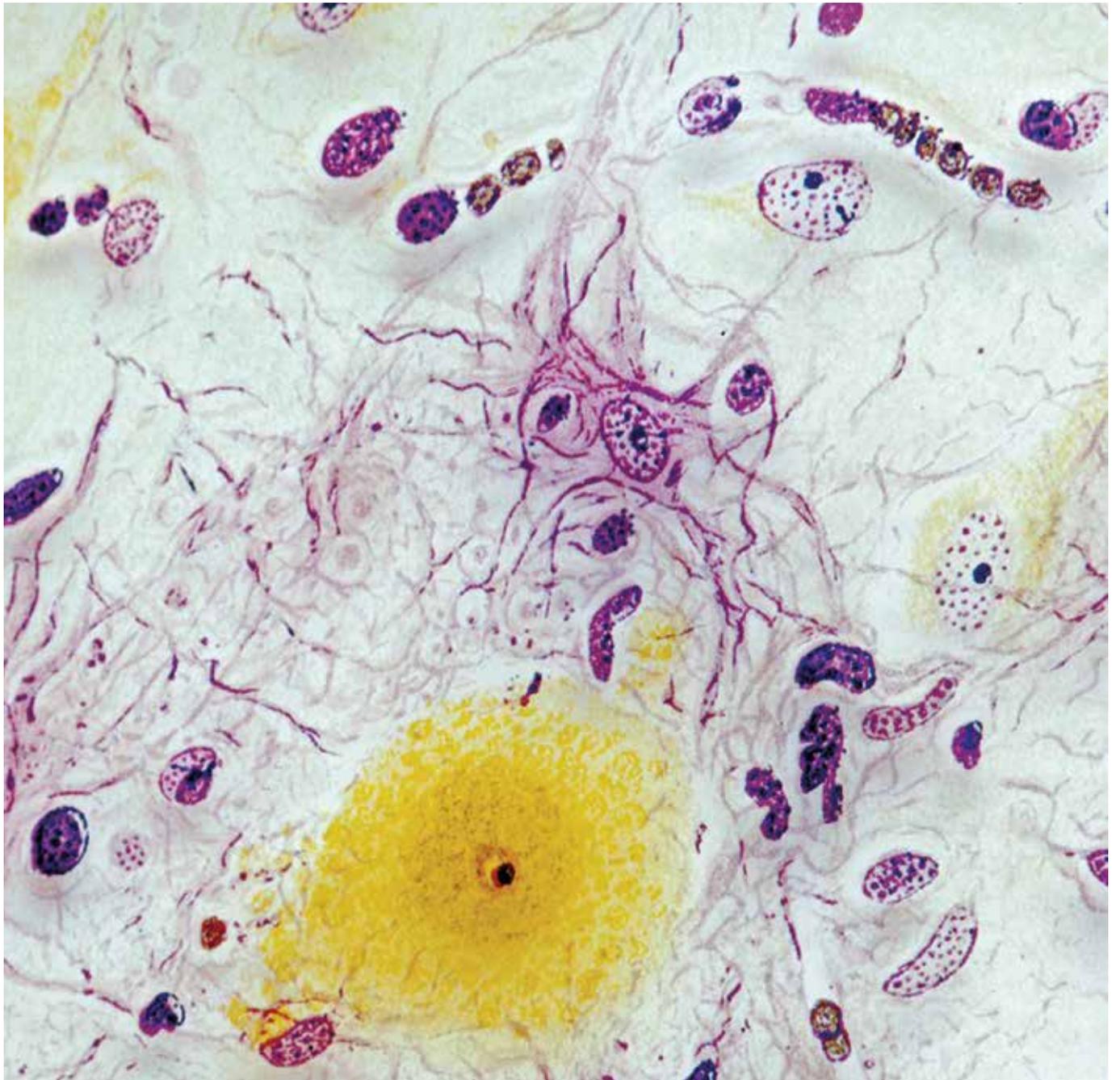
Steering Committee:

The Steering Committee is the body responsible for the supervision, planning and daily execution of activities in the CIEN Foundation. It consists of a Chair, two members and one member secretary representing the three public institutions that make up the CIEN Foundation: the Carlos III Institute of Health, the Queen Sophia Foundation, the Scientific Director of the Alzheimer's Project Research Unit (UIPA, for its acronym in Spanish) and the Managing Director of the CIEN Foundation.

This Committee is composed by the following members:

STEERING COMMITTEE OF THE CIEN FOUNDATION		
<i>The members of the CIEN Foundation Steering Committee 31, 2011 are the following:</i>		
Position	Title	Name
Chair	Director of the Carlos III Institute of Health	José Jerónimo Navas Palacios
Member	Secretary of the Queen Sophia Foundation	Arturo Coello Villanueva
Member	Scientific Director of the Alzheimer's Project Research Unit (AIPU)	Pablo Martínez Martín
Member - Secretary	Managing Director of the CIEN Foundation	Maria Ángeles Pérez Muñoz





1. OVERVIEW

Scientific Committee

Its work involves proposing research projects, advising researchers and research groups as well as project monitoring.

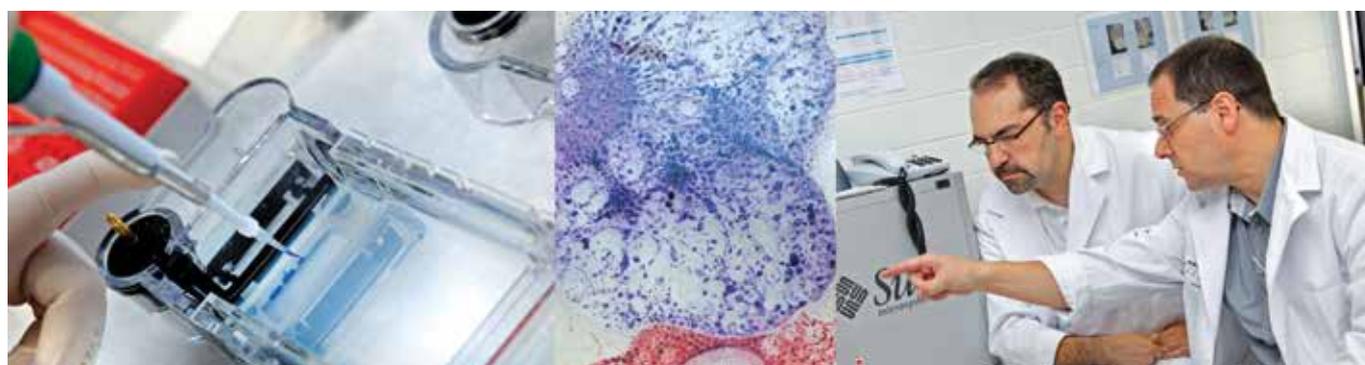
SCIENTIFIC COMMITTEE OF THE CIEN FOUNDATION		
<i>The members of the CIEN Foundation Scientific Committee on December 31, 2011 are the following:</i>		
Position	Title	Name
Chair	Director of Carlos III Institute of Health	José Jerónimo Navas Palacios
Member	Scientific Director of the UIPA - CIEN Foundation	Pablo Martínez Martín
Member	Representing the CIEN Foundation	Jesús Ávila de Grado
Member	Representing researchers from the UIPA - CIEN Foundation	Miguel Calero Lara
Member	Representing the ISCIII	Jesús de Pedro Cuesta
Secretary	Managing Director of the CIEN Foundation	M ^a Ángeles Pérez Muñoz

Ethics Committee

Since June 2010 the research activity of the CIEN Foundation, both for clinical projects and for the Tissue Bank activity, is supervised by the ISCIII Ethics Committee Research for and Animal Welfare.

The Carlos III Institute of Health Ethics Committee for Research and Animal Welfare is a collegiate body as described in Article 12 of the July 3, 1412007 Law about Biomedical Research and in Articles 22, 23 and 24 of the October 10, 1201/2005 Royal Decree about the protection of the animals used for experimental and other scientific purposes.

Regarding the competences described in the 14/2007 Law on Biomedical Research, the Committee provides service to the Carlos III Institute of Health centers and units of, foundations promoted by the Institute itself and joint or associated centers recognized by the Carlos III Institute of Health.



1.6 The CIEN Foundation in our society



A priority for the CIEN Foundation is to convey the scope of our ongoing investigations on neurodegenerative diseases, especially AD, to citizens and society. In this sense, activities are focused on promoting social involvement, including citizen participation in specific research programs as volunteers, and stimulating brain tissue donation to BT-CIEN. Furthermore, the implementation of forums and informative, non-specialized symposia are key points to bring research closer and enabling patients and relatives' needs to be known.

Some of the most significant initiatives in 2011 are the following:

“Alzheimer International 2011, Alzheimer’s Research Year”

This initiative, promoted by the Queen Sophia Foundation and the Pasqual Maragall Foundation, has counted with the participation of the CIEN Foundation. The activities carried out to celebrate the Alzheimer’s Research Year culminated in Madrid on September 22-23 at the Global Alzheimer’s Research Summit, a scientific meeting where Spanish and international researchers shared information about new research lines and recent advances in Alzheimer’s Disease.

“Árbol de Navidad de los Recuerdos” (Christmas Tree of Memories)

This initiative has been launched by the Queen Sophia Foundation, CIEN Foundation and Caja Madrid to promote cooperation in Alzheimer’s research among citizens. Specifically, from December 12, 2011 to January 6, 2012, Madrid citizens could leave their "best Christmas memory" on the tree located at the Queen Sophia Foundation Alzheimer’s Center. For each memory, Caja Madrid Social Project destined €1 to the "Vallecas Project". Moreover, Twitter users could donate €1 to the project by writing their favourite memory related to Christmas on #recuerdosolidario. The thousands of messages received were hung on the tree, which was inaugurated by the journalist and presenter, Irma Soriano.

Presence on social networks

During 2011, the CIEN Foundation has promoted its presence on social networks with the objective of boosting scientific knowledge and the scope of the ongoing research activities as well as building new bridges among researchers and society.



1. OVERVIEW

1.7 Vision

During 2011 and subsequent years, the UIPA-CIEN Foundation will continue boosting its recognized, consolidated research activities that place it as a center of reference in Spain.

Likewise, the international projection of its activity is one of the main objectives in the mid-term both with regards to its participation in international research projects as well as the implementation of its own initiatives or those entrusted by the ISCIII outside our borders. In this sense, its integration into the CoEN international network and the three new actions being coordinated (the ISCIII European Project Office, the Center of Reference for Endemic Disease Control Project in Equatorial Guinea and the National School of Health-ISCIII International Cooperation Fellowships for postgraduate studies) lay the foundation for its internationalization.

However, from a forward-looking approach, the CIEN Foundation remains focused on 3 key areas: management, training and social awareness. The three areas are directed at promoting responsible research that contributes to innovation and improvements in the life quality of patients and their families.

A sustainable management:

- Wherever funding is shared by The State and private institutions.
- Advocating optimization of both human and material resources for research.

Training as the basis for excellence:

- Through the implementation of specific training initiatives in and outside Spain.
- Through collaboration agreements, fellowships and other training programs with other international research centers and/or pharmaceutical and biotechnology companies.

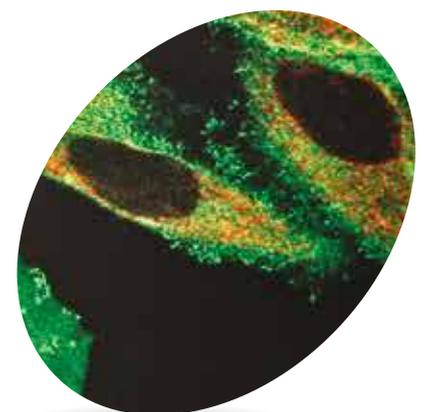
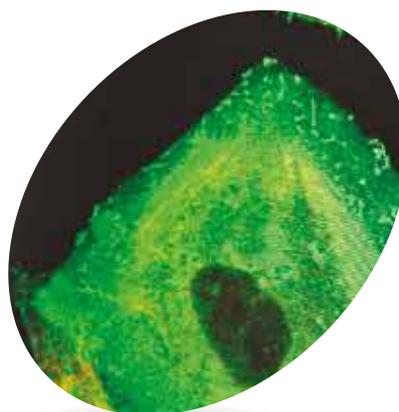
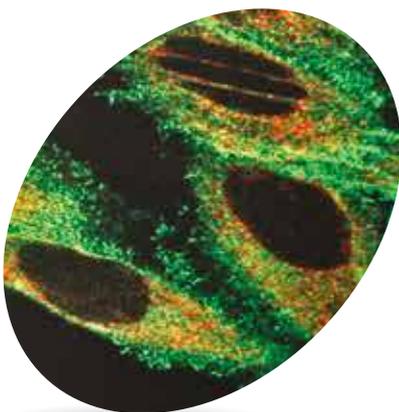
Information and social awareness:

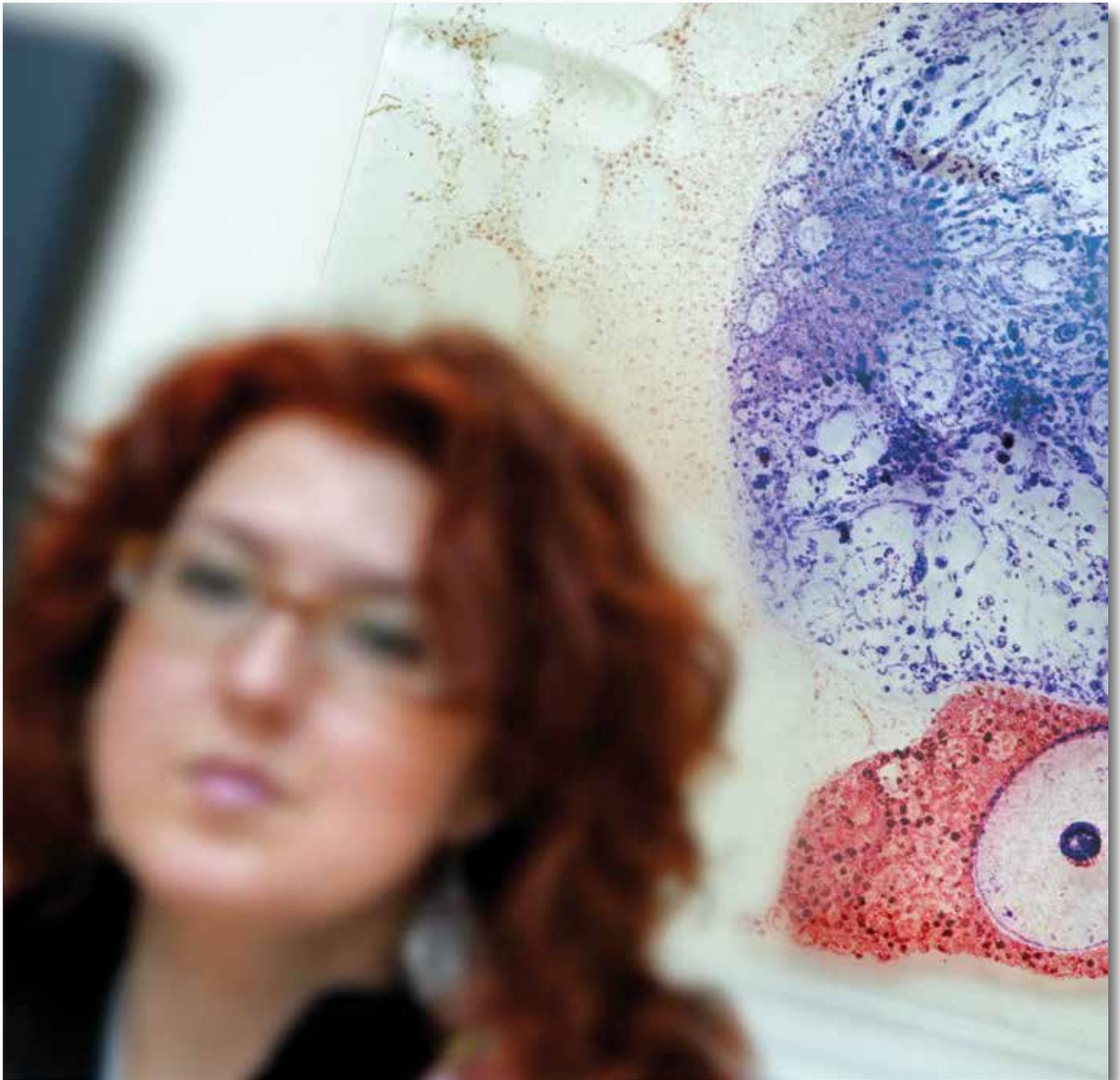
- Key point to convey society and citizens the value of research on neurodegenerative diseases in general and AD in particular.
- Helping to raise awareness of patients and families' needs and promoting their participation whenever required.



Management *Re*port

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- 2.2 Management of financial and economic resources
- 2.3 Management of Human Resources
 - 2.3.1. Training Program 2011
 - 2.3.2. Prevention of occupational hazards
- 2.4 Research projects, fellowships and grants
 - 2.4.1. Research projects
 - 2.4.2. Fellowships and grants
- 2.5 Quality Policy





2. MANAGEMENT REPORT

In 2011 the budget managed by the CIEN Foundation increased by 18% mainly due to the consolidation of a successful policy of raising private funds which, together with the maintenance of public resources allocated within the General State Budget, ensure the viability of ongoing projects, the implementation of new initiatives and the continuity of researchers.

The CIEN Foundation has pursued a policy of austerity and careful control of expenditure to optimize the management of funds, which exceeded 4 million euros.

During 2011, part of our management has focused on internationalization, which has materialized with the allocation of new competences, such as acting as the ISCIII European Projects Office, as Center of Reference for the Control of Endemic Diseases in Equatorial Guinea and as coordinator of the National School of Health-ISCIII International Cooperation Fellowships for postgraduate studies, among others.

2.1 General management

During 2011, the CIEN Foundation has continued promoting research to consolidate its leadership as a reference model in Spain. In this sense, in terms of management, revenue optimization and expense rationalization have remained being key points to guarantee the continuity of ongoing research projects, initiating new ones, and ensure long-term permanence of researchers. This commitment to human capital, which includes volunteers as well as administrative and support staff, has taken shape with the increase in the number of seminars and training programs at international level. In particular, we must highlight the implementation of the M+VISION Program, a program of biomedical imaging from the Massachusetts Institute of Technology (MIT) and the Community of Madrid currently undertaken by various CIEN Foundation professionals, whose collaboration will continue in 2012.

Thus, internationalization has been another pillar on which CIEN Foundation management has revolved around. In the long run this will

translate into greater external visibility as a consequence of a trustworthy, transparent, effective proven management model. The scope of this model has been expanded to new economic and administrative competences.

In 2011, the projects managed by the CIEN Foundation are the following:

- The Center for Networked Biomedical Research in Neurodegenerative Diseases (CIBERNED).
- The ISCIII European Project Office (OPE).
- The Center of Reference for the Control of Endemic Diseases in Equatorial Guinea (CRCE).
- The Project for Strengthening the Health System and Prevention to fight against infectious diseases prevalent in the Amhara Region, Ethiopia Project (Amhara-Eth Project).
- Coordination of the National School Health-ISCIII International Cooperation Fellowships for postgraduate studies.



Consolidated management has enabled the designation of the CIEN Foundation and CIBERNED as Centers of Excellence by the European Union

This designation has allowed both institutions to become part of the Joint Programming for Neurodegenerative Diseases and be integrated into the International Network of Centers of

Excellence in Neurodegenerative Disease Research (CoEN), which, in the mid-term, will result in opening new ways of funding research projects. In May 2011 this participation materialized in the first call for projects from the JPND (Research) with the acquisition of a project for the optimization of biomarkers and harmonization of their use in health centers and hospitals, an initiative with a Spanish contribution



2. MANAGEMENT REPORT

of one million euros, which is expected to fund up to 8 three-years research projects.

The CIEN Foundation approaches research projects from a global perspective, involving researchers, volunteers and society in general

In 2011, the implementation of global projects has been especially relevant since researchers,

volunteers, media and society in general have joined forces to reach one single goal. Our first initiative with social projection is the outstanding "Vallecas Project", socially backed by the launch of the "Christmas Tree of Memories" campaign. This Christmas event with highly successful participation had the cooperation of the Queen Sophia Foundation and the Caja Madrid Social Project.

MISSION AND ROLES OF THE CIEN FOUNDATION

Our mission is clear: becoming a center of national and international reference for research on Alzheimer's disease

The aim of the CIEN Foundation-UIPA is to become a center of national and international reference in research on Alzheimer's disease and related dementias, as well as support qualified researchers and facilitate the impact of scientific advances on the health system and, therefore, on patients welfare.

To achieve these goals, the CIEN Foundation:

- Favors the implementation of coordinated research projects in neurological diseases.
- Participates in calls promoted by national and international funding agencies.
- Develops training programs through specific actions: seminars, training programs for fellows, doctoral theses and any other action that may contribute to training.



2.2 Management of economic and financial resources

In 2011, the rough estimate managed by the CIEN Foundation was 4 million euros, representing an 18% increase compared to 2010. As the Foundation depends on the Ministry of Science and Innovation, 31% of the budget comes from the ISCIII official grant. Thus, the CIEN Foundation budget allocated for 2011 within the General State Budget has amounted to 825,280 euros, distributed as current (€ 655,940) and capital (€ 169,340) expenses. Therefore, it remains at similar levels to those of previous years. These resources have a clear objective of promoting research activities

In 2011 the CIEN Foundation has been responsible for the administrative and economic management of three new initiatives:

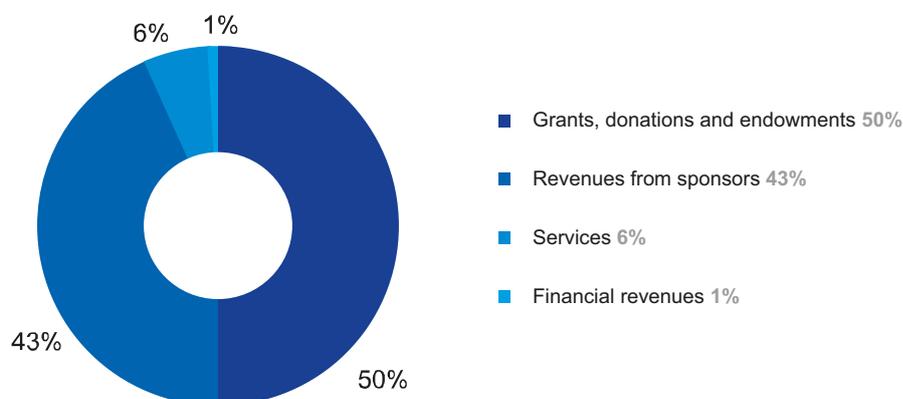
- The Carlos III Institute of Health European Project Office , with a budget of € 514,981 under agreement, to be added to those projects EU-funded brought together by this Office.
- The project as Center of Reference for the Control of Endemic Diseases in Equatorial Guinea, with a budget for 2011 of € 370,584 under agreement.
- The National School of Health-ISCIII International Cooperation Fellowships for postgraduate studies, with a budget for 2011 of € 143,360.

In budgetary terms, the continued commitment of the Queen Sophia Foundation, providing over 17% of the total resources, deserves special mention. On the part of the CIEN Foundation, the measures taken in order to increase the resources available for

CIEN Foundation revenues since 2006

	2006	2007	2008	2009	2010	2011
Grants, donations and endowments	719.754,00	1.659.612,00	1.698.242,00	2.123.270,00	2.521.998,28	2.006.682,76
Revenues from sponsors	5.099,00	21.301,00	460.666,00	0,00	501.104,00	1.682.917,06
Services	1.904,00	0,00	70.017,00	98.997,00	187.989,48	227.997,55
Financial revenues	35.396,00	65.217,00	88.734,00	31.638,00	17.754,01	38.625,53
	762.153,00	1.746.130,00	2.317.659,00	2.253.905,00	3.228.845,77	3.956.222,90

Revenue distribution in 2011



2. MANAGEMENT REPORT

research through private funding have enabled the generation of 20% of the annual budget, which has come from sponsors and benefactors.

As far as expenditure is concerned, the main budgetary items include staff costs, operating costs and depreciations. Expenditure restraint measures taken throughout the year 2011 have been aimed at maintaining the quality level of our management while restraining costs. The number of research projects funded by external sources, as well as the research activity developed internally through projects assigned to each department, has increased compared to the previous year. Emphasis should be placed on the implementation of the "Vallecas Project", which has meant a very

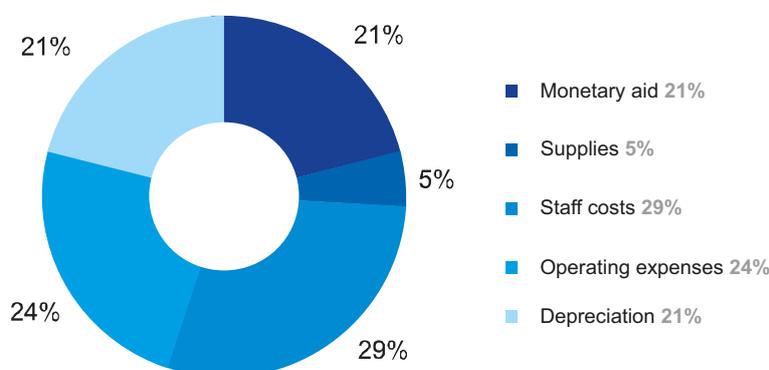
important economic, scientific driver for the present and future of the CIEN Foundation. Consequently, staff costs have increased due to the implementation of new projects and the assumption of management responsibilities on the ISCIII European Project Office and the Control of Endemic Diseases in Equatorial Guinea, projects requiring temporary recruitments to meet the requirements for competitive, efficient and high-quality activity. Overall expenditure on this item has increased by 55% approximately compared to 2010.

In addition, expenses on other items (supplies and other operating expenses) also grew around 40% driven by increased assignation of duties, although staff costs underwent a larger increase.

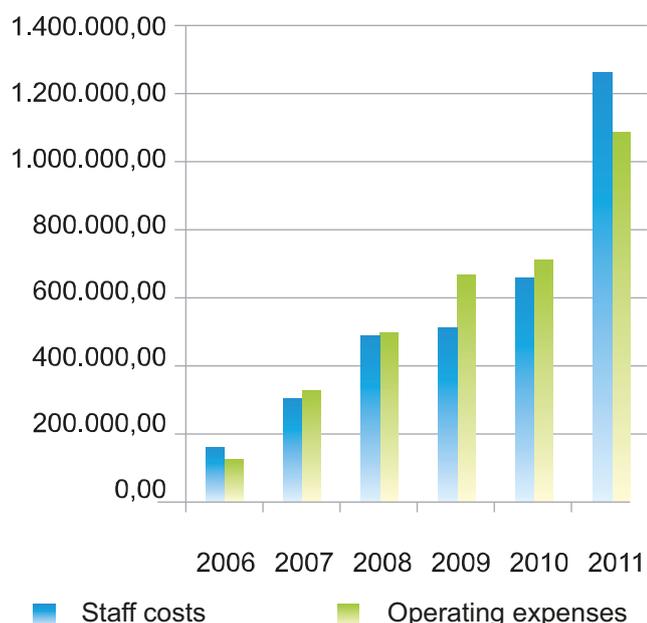
CIEN Foundation Expenditure since 2006

	2006	2007	2008	2009	2010	2011
Monetary aid	0,00	0,00	460.666,00	420.333,00	703.265,00	897.702,48
Supplies	1.513,00	48.791,00	48.941,00	72.429,00	287.807,78	197.266,07
Staff costs	122.707,00	269.513,00	450.060,00	477.593,00	624.457,01	1.224.706,74
Operating expenses	94.705,00	290.227,00	465.492,00	632.877,00	679.152,50	1.046.318,84
Depreciation	17.754,00	893.951,00	911.046,00	932.921,00	934.163,48	909.576,49
	236.679,00	1.502.482,00	2.336.205,00	2.536.153,00	3.228.845,77	4.275.570,62

Expense distribution in 2011



**Evolution of staff and operating expenses
2006-2011**



2.3 Management of Human Resources

One of the aims of the CIEN Foundation is to generate valuable knowledge for society and contribute, in an effective way, to their development and welfare through the results and progress derived from our research and projects. However, the true distinguishing feature and success builder is provided by the professionals that make up our organization.

We are well aware that the CIEN Foundation staff constitutes our most important resource. So, through the selection process for our job offers, we intend to bring together a highly qualified team, whose levels of technical and ethical competences meet the qualitative parameters supported by the CIEN Foundation

at all times. We guarantee our professionals a solid job future and long-term commitment. In 2011 staff costs increased, if compared to 2010, as a result of the Foundation's commitment to recruit and retain the best research talent.

In this sense, the good development of research projects depends on key elements such as personal effectiveness, leadership and management skills. In the Department of Human Resources we work on integrated talent management, focusing efforts on offering qualified support to the most valuable professionals. For us it is essential to create value for the employee by rewarding performance and getting involved in the constant development of all our professionals.

Therefore, as for its policy of human resources, the CIEN Foundation pursues the following priority goals:

Talent management

- Recruiting and retaining talent. The leadership of our researchers is key to our talent management strategy, and that is the reason why professional and personal growth is supported and encouraged through the development of Personal Development Plan.

Equality Plans

- Implementing policies to improve working conditions for women on equal terms as men, facilitating access to employment, training and promotion, equal wages, reconciliation of personal and working life, and improvements in occupational health and safety.



2. MANAGEMENT REPORT

Work-Life Reconciliation

- Continuing the occupational and family reconciliation policy for all the groups within the organization.

Diversity Management

- Discarding any discriminatory practice in the incorporation of candidates.

Occupational Health and Safety

- Improving health and safety conditions in the course of our activity and projecting the image of a Foundation committed to the prevention of occupational hazards.

According to the policy pursued from the beginning of its activities, the CIEN Foundation internal and external selection processes are aimed at achieving highly qualified staff, whose levels of technical and behavioral competences meet the job profiles required.

As in previous years, the professionals who have joined the CIEN Foundation during 2011 have done so under employment or collaboration agreements with organizations and institutions, related to both research and teaching. These joining efforts and resources translate into a large number of highly qualified professionals with a minimum staff cost, resulting in effective, sustainable management.

All the positions offered by the CIEN Foundation have been filled through open competition and have been published on the CIEN Foundation, ISCIII and CIBERNED websites of, abiding by the principle of free competition and objective assessment of the applicants' merits.

CIEN Foundation Staff

During 2011, the CIEN Foundation has counted on a total of 75 professionals, including 28 hired from competitive grants, 4 fellows, 9 volunteers who have collaborated selflessly with the CIEN Foundation, 1 in-training Resident Medical Intern (MIR for its acronym in Spanish) and 33 professionals who developed activity thanks to collaboration agreements.

To ensure that the skills of our professionals and of our medical, research and management staff meet the requirements of the activity, the CIEN Foundation is divided into the following departments:

- Department of Management and Administration
- Multidisciplinary Support Unit (UMA for its acronym in Spanish)
- Department of Neuropathology
- Department of Neuroimaging
- Department of Laboratory



MANAGEMENT

- 1 Managing Director
- 1 UIPA Scientific Director

MEDICAL AND RESEARCH PERSONNEL BY DEPARTMENT

- 1 Neuropathologist
- 4 Pathological Anatomy Technicians
- 3 Neuroimaging Technicians
- 2 Training Fellows (teaching agreement I.E.S.)
- 2 Neuroradiologists (DIM Foundation collaboration agreement)
- 3 Physicists (URJC collaboration agreements)
- 11 Engineers (URJC collaboration agreements)
- 1 PhD in Mathematics (URJC collaboration agreements)
- 3 Neuropsychologists (Research Projects)
- 1 Biologist (CIBERNED)
- 2 Laboratory Technicians (industry collaboration agreement)
- 2 Fellows (URJC collaboration agreements)
- 2 Psychiatrists
- 5 Neurologists
- 1 Sociologist
- 5 Psychologist
- 1 M.I.R.
- 1 D.U.E. (Research Projects)

MANAGEMENT AND ADMINISTRATION

- 1 Attorney
- 1 Managing Director Secretary
- 1 Administrative Officer
- 6 Administrative Assistants
- 2 Graduates (CIBERNED)
- 3 Administrative Assistants (CIBERNED)

OTHER STAFF

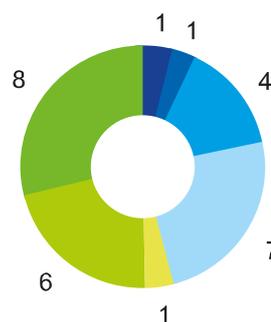
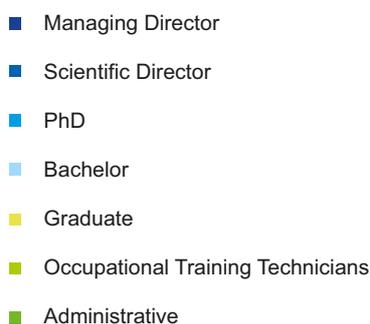
- 9 Volunteers

Total staff employed by the CIEN Foundation from Grants and Projects: 28



2. MANAGEMENT REPORT

Staff distribution by category



2.3.1 Training Program 2011

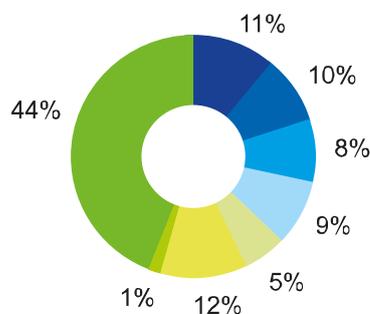
The CIEN Foundation has set up the Training Program 2011, key to meet the requirements of competitiveness, efficiency and quality as well as the employees' aspirations for professional and personal development. In this way, our intention is to provide our employees the necessary competences for searching, analyzing and systematizing knowledge, including techniques, methods and protocols specific of the research activity.

In 2011, the CIEN Foundation increased the number of plenary talks and training activities specifically aimed at its professionals

For the CIEN Foundation the training of professionals working on health research is key to the development of their full potential, regardless of category, level or professional expertise.

In addition, staff distribution is planned every year so that those professionals ready to be promoted can

Distribution of the staff and collaborators of the CIEN Foundation



be identified. This process is governed by equality criteria by means of which applicants are assessed in terms of ability and merits regardless of their condition.

Regarding the development of our professionals' skills, the ultimate goal of the training is to achieve improved processes of our research projects bearing in mind training needs, relevance, assessment or impact. Effective training on the development of

skills to meet the job requirements is a process of continuous improvement and advance.

The professionals in charge of the training courses are renowned in their area of expertise. In 2011 the following courses were taught:

- 16 training courses on Neuroimaging.
- 1 workshop on imaging lab.
- 6 training seminars on various topics.



2. MANAGEMENT REPORT

- Supervision of 2 doctoral theses.
- 7 continuing training courses at AMU.
- 2 multidisciplinary training courses at the Alzheimer Center of the Queen Sophia Foundation.
- 2 seminars on clinical cases in Neuropathology.
- 2 continuing education courses of the Alzheimer's Project Research Unit.
- 2 continuing education courses on Laboratory.
- 1 Resident Medical Intern.

2.3.2 Prevention of occupational hazards

Under the principles set out in the Policy of Occupational Health and Safety of the CIEN Foundation, which promotes respect for occupational health and safety in the course of our activity, the organization's commitment is expressed in the following terms:

- To comply with applicable current regulations on occupational health and safety within the European, national, regional and local regulatory framework.
- To advance continuous improvements in our behavior towards health and safety at work.
- To ensure the employees' protection regarding health and safety.
- To promote both internal and external training and communication.

An annual schedule of activities has been arranged to be undertaken by the Prevention Service. Among them, it is important to point out the risk assessment of the different groups' positions, the specific assessment of pregnant employees, the planning of preventive actions and the implementation of emergency measures and risk sheets by position.

As in previous years, specific courses on prevention of occupational hazards have been specifically aimed at the different positions within the Foundation: lab staff, research staff, administrative officers, health and management staff.

As for occupational health monitoring, a total of 21 medical examinations have been carried out. Health screenings have included a work history with detailed description of the job, duration of service, identification of risks in the analysis of working conditions and the adoption of preventive measures, anamnesis data, clinical exploration, biological control and complementary studies monitored and chosen according to inherent risks in work performance.

Additionally, information is provided to new staff, related to occupational hazards related to the position, adoption of preventive measures, performance standards in case of emergency and first aids.

Finally, we would like to underline that, once again, the CIEN Foundation has met the objectives in terms of occupational safety: no accidents within the workday.

2.4 Research projects, fellowships and grants

The research projects, fellowships and grants managed by the CIEN Foundation aim to support and promote research and study on Alzheimer's and related diseases, enhance researchers' mobility by facilitating some part of their training in renowned research centers, and promote clinical research as well as research into health outcomes and translational research.



2.4.1 Research projects

During 2011 the CIEN Foundation has continued conducting the research projects promoted since 2008. These research projects are primarily focused on the characterization of the pathology, early diagnosis and clinical and psychosociological aspects in Alzheimer's and related diseases, as well as on finding new pharmacological targets.

Major projects funded in 2011:

- 11 research projects funded by the CIEN Foundation in 2011 belonging to the third and second annual payments from the call for projects 2008 and 2009. Funding: €561,000
- 43 ongoing research projects in collaboration with external institutions at national and international level.

In addition, in late 2010 the CIEN Foundation, in collaboration with the Queen Sophia Foundation, implemented an ambitious research project called "Vallecas Project", which aims at the early detection of Alzheimer's disease. With an expected 5-year duration, the project results will report a set of clinical, biochemical and neuroimaging data. Such data will enable assessment on whether any of the parameters analyzed could be a reliable marker in the development of Alzheimer's disease, essential for the development of future treatments. This study is carried out on volunteers aware of the problems of the disease with an altruistic spirit and in full collaboration with the research.

2.4.2 Fellowships and grants

During 2011 the CIEN Foundation, in collaboration with government agencies, the Queen Sophia

Foundation, the Mapfre Foundation and the National School of Health, has awarded the following fellowships and grants:

- The CIEN Foundation, in collaboration with the Carlos III Institute of Health and the National School of Health, the National University of Distance Education (UNED for its acronym in Spanish) and the University of Alcalá, has offered a fellowship for the 2nd edition of the Master Course "Direction and Management of R&D in Health Sciences".
- The Queen Sophia Foundation and the Mapfre Foundation have offered a fellowship to hire a specialist in neurology for the CIEN Foundation. This fellowship, apart from being an excellent career opportunity for young neurologists, also offers a special setting for research on Alzheimer's disease and related pathologies.
- The ISCIII National School of Health has entrusted the CIEN Foundation the management of fellowships for postgraduate studies specializing in "International Public Health" and "Health Promotion".

2.5 Quality Policy

In 2011, satisfaction questionnaires conducted by each department maintain the successful results from previous years, being rated at levels between good and excellent. The Foundation has actually initiated the establishment of a System of Quality Management in the Tissue Bank Management.

The CIEN Foundation works under the System of Quality Management according to ISO 9001:2008, certified by TÜV Rheinland, with the goal of ensuring



2. MANAGEMENT REPORT

and optimizing the management area of the Foundation.

Quality Objectives are annually set in order to achieve continuous improvements and higher levels

of customer satisfaction (for researchers and staff from various departments of the UIPA). Thus, the implementation of the System of Quality Management of the CIEN Foundation ensures optimal performance in the purchase of materials



and services, in staff hiring and management as well as in documentation filing. This system has been developed with a focus on process-based management. To achieve improvements, the basic processes of the organization have undergone continuous analysis so as to be able to meet customers' requirements, comply with applicable current regulations and optimize its resources.

The Quality Policy of the CIEN Foundation seeks to ensure and optimize processes related to:

- External and internal customer orientation.
- Leadership
- Staff involvement
- Process-based approach
- Continuous improvements

The tools used to carry out the review of the System of Quality Management are the following:

- Reports of internal and external audits.
- Evaluation of suppliers.
- Complaints, suggestions and information to customers.
- Results of Studies on Customer Satisfaction.
- Evaluation of corrective, preventive actions.
- Indicators of the quality of the processes.
- Quality objectives.
- Internal or external changes affecting the Quality System.

The CIEN Foundation, aware of the influence of human resources on the development of the System of Quality Management, has taken special care to improve the selection process, training and role adaptation of our professionals, including motivation

and competence to perform their work. Our performance has been focused on:

- Analyzing the activities to be carried out and establishing personal requirements.
- Selecting the most suitable professionals within the organization to perform each activity.
- Identifying training needs required to effectively cover all the activities.
- Providing necessary, adequate training to meet specific needs, evaluating the effectiveness of the actions and establishing appropriate records.
- Making our staff aware of the importance of achieving objectives.



2. MANAGEMENT REPORT

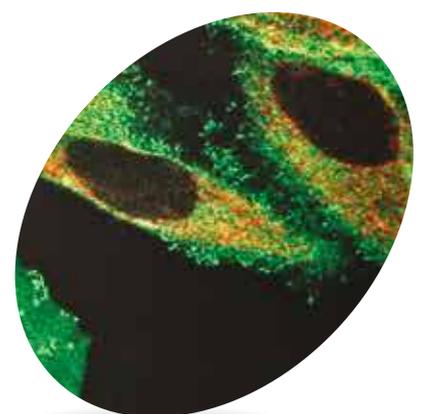
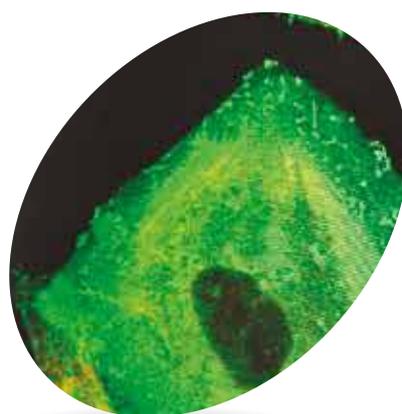
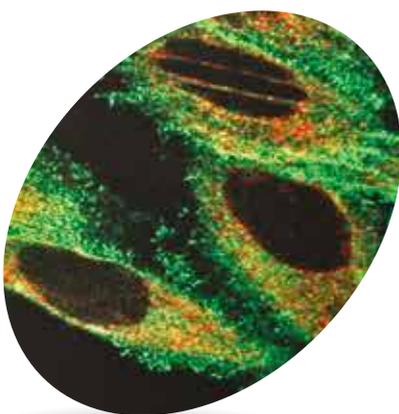


CIEF Foundation's Administration Team



Scientific activity of the *e* UIPA

- 3.1 Overview
- 3.2 Evolution of the research
by departmental areas
 - 3.2.1 UMA (Multidisciplinary Support Unit)
 - 3.2.2 Department of Neuropathology
 - 3.2.3 Department of Neuroimaging
 - 3.2.4 Department of Laboratory





3. SCIENTIFIC ACTIVITY OF THE UIPA

The CIEN Foundation manages the Alzheimer's Project Research Unit (UIPA), which is developed under the Alzheimer's Project sponsored by the Queen Sophia Foundation and focuses on research into Alzheimer's disease and related disorders. It is located in the Queen Sophia Foundation Alzheimer Center (Vallecas, Madrid), nearby the Area of Geriatric Care of the Center, which is managed by the Autonomous Community of Madrid through its Department of Family and Social Affairs. It assists to 156 patients admitted in residential regime and other 40 over the Day Center. This close proximity between the area of care and the UIPA reflects the intention of the promoter (Queen Sophia Foundation) to bring the research closer to the patient.

3.1. Overview

CIEN Foundation - UIPA Research Areas

The research conducted at the UIPA is primarily focused on Alzheimer's disease and other dementias, but also provides a complementary approach to other neurodegenerative diseases. The research program priorities are set by the Scientific Committee of the UIPA. The research priorities established until the year 2012 are the following:

1. Early diagnosis of AD - MRI, Biomarkers.
2. Neuropathology of AD.
3. Molecular and cellular biology of AD - β -amyloid peptide, tau.
4. Aging and risk factors for AD.
5. Methodology and management of biobanks.
6. Resource allocation and quality of care of patients with AD.

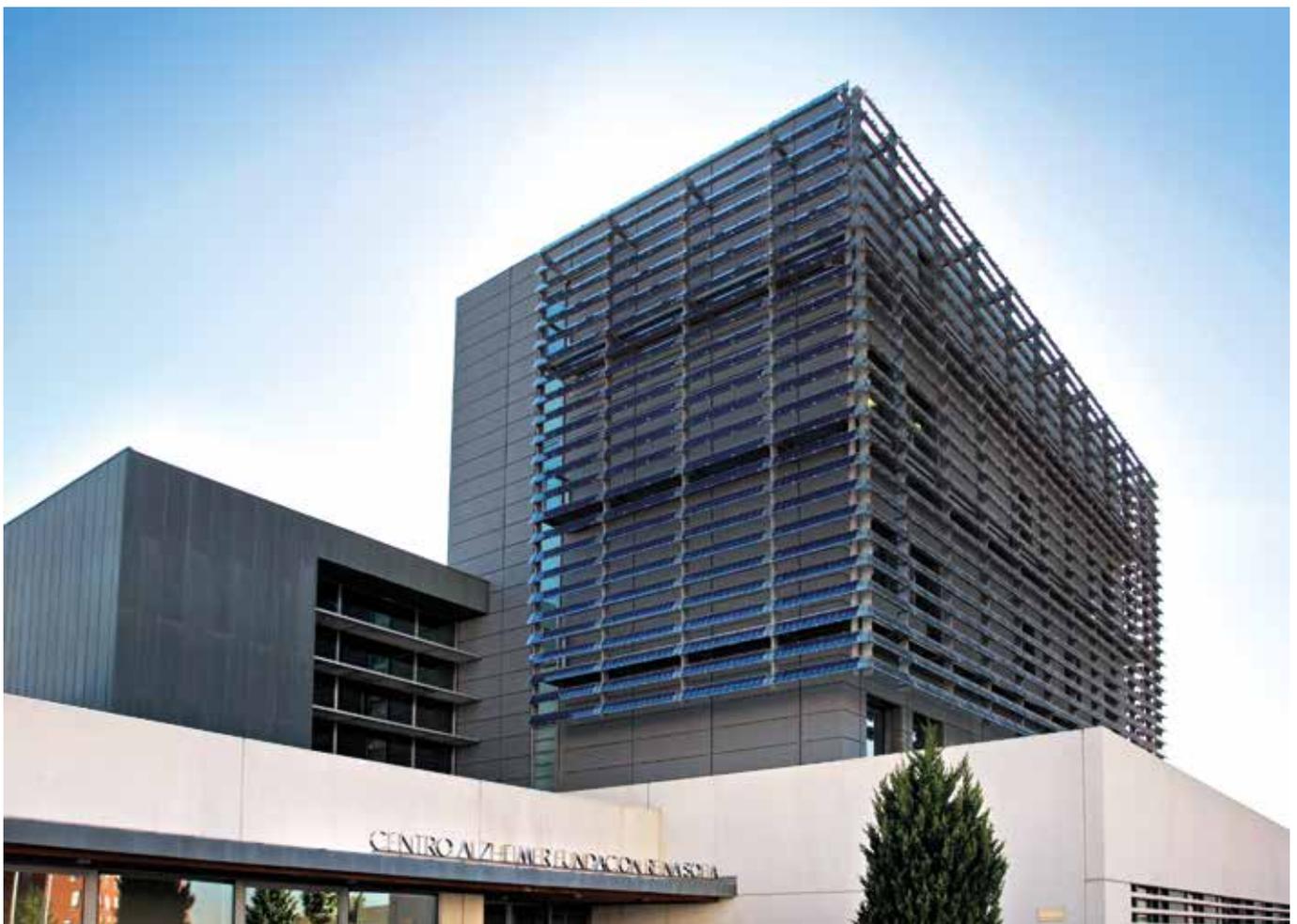
Main indicators of the research activity carried out:

- 43 research projects with partial or full involvement of UIPA.
- Enlargement of the Vallecas Project, which involves the entire UIPA, to assess up to 1,200 subjects.
- Completion and presentation of DEMCAM project results for the determination by 3Tesla MRI and Artificial Intelligence, which individuals are cognitively healthy and who could suffer mild cognitive impairment or some form of dementia, such as AD.
- Publication of 44 articles and 14 book chapters.
- 108 participations in Conferences and Symposia.
- Participation in Courses: 85 lectures.
- Participation in the International Year of Alzheimer's Disease 2011.
- Award: the Tissue Bank CIEN Foundation (BT-CIEN) was recognized as "Best Idea" in the category of Health by the magazine *Actualidad Económica*.



The UIPA is structured around four departments:

- Multidisciplinary Support Unit (UMA): composed by members of the UIPA itself (specialists in neurology, psychiatry and sociology) and members of the Healthcare Area (specialists in geriatrics, psychology, physical and occupational therapy).
- Department of Neuroimaging: Equipped with a 3T MRI scanner for advanced research.
- Department of Neuropathology for diagnosis and preservation of brains, along with other biological samples properly classified, constitute a biobank for research purposes: BT-CIEN.
- Department of Laboratory, with capacity to process and store biological samples as well as to perform in-house research.



3. SCIENTIFIC ACTIVITY OF THE UIPA

3.2. Evolution of the activity by departmental areas

3.2.1 UMA (Multidisciplinary Support Unit)

Among the priorities of the UMA is the advancement of knowledge on neurodegenerative diseases, particularly Alzheimer's disease from a primarily clinical perspective. Furthermore, it reviews the syndromic and etiological diagnosis of patients that, either in a residence scheme (live units) or day care (Day Center), attend the Queen Sophia Foundation Alzheimer Center (CAFRS) and regularly monitors their progress.

The UMA, thanks to all these efforts, builds on the knowledge of clinical progression of dementia and stands as a link between basic and clinical as well as social science fields related to Health.

In 2011 the UMA has continued its research activity as a research department devoted to capture and provide data, with the vocation of translating them to investigators from CAFRS and other institutions. Its multidisciplinary assessments allow CIEN Foundation professionals to achieve a series of data that, employed in future research, will assist in the research on neurodegenerative diseases. These data, obtained after signing an informed consent, are also available to other institutions dedicated research on neurodegenerative disorders with which collaboration agreements exist. Thus, UMA constitutes itself as a reference research institution in the sector.

These assessments, based on a rigorous protocol and subject to an appropriate time control, allows to establish relationships between areas of brain damage, degree of impairment, functional impact and relationship with other evaluation methods and causal disease markers. Reviews

every six months, allow for sustained and continuous monitoring of each patient by checking his/her neurological status as well as their mental, affective and functional behavior.

Thus, the work of investigators at the UMA can be summarized in two key aspects:

- To add value to the routine care of patients institutionalized in CAFRS. Furthermore, this direct and regular contact with the patients offers alternatives to advance in new research lines.
- To obtain clinical data of great utility for the other Departments of the CIEN Foundation and other institutions.

Results in 2011

In 2011, UMA staff has conducted 258 semiannual evaluations on 135 patients with informed consent. In addition, baseline evaluations were performed on 30 new patients admitted in the Center.

The CAFRS has 156 available positions in an internship scheme (living units) and other extra 40 in the Day Center. In 2011, 30 (14 interns and 16 in the Day Center) new consents were obtained for patient participation in multidisciplinary semiannual program evaluations carried out by the UMA. The UMA personnel conducted 258 of these semiannual evaluations in 2011, including protocolized contributions of geriatrics, neurology, psychiatry, neuropsychology, sociology of health, physical and occupational therapy.

In addition, most of the consents extend to donation of blood samples for research (taking



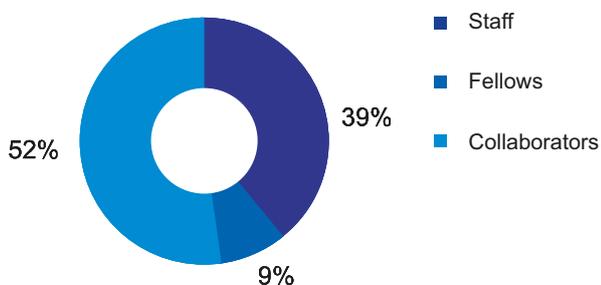
advantage of sample drawing for routine analysis) and to perform Magnetic Resonance Imaging (MRI). Finally, a very high proportion of consents (70% of the last 14 obtained) is also accompanied by postmortem brain donation for research purposes.

This systematic program of activities enables the CIEN Foundation researchers to incorporate data from CAFRS-admitted patients to a computerized database complemented with databases from other laboratory areas, such as neuroimaging and neuropathology, facilitating research on dementia underlying diseases, especially due to neurodegeneration, which constitutes the main research focus of the CIEN Foundation.

Other activities

Besides the systematic evaluation of CAFRS patients, 270 assessments were conducted within the framework of specific research projects and the UIPA Continuing Education Program continued ahead, now in its fourth year of progress.

UMA personnel by type of contract



2011 Research projects

The UMA continues to conduct various research projects, among which the "Vallecas Project" stands out for its size and scope, taking on the efforts of most CIEN Foundation and UMA personnel.

Vallecas Project: early detection of Alzheimer's disease

In June 2010, the UIPA-CIEN Foundation and the Queen Sophia Foundation launched the pilot phase of the Vallecas Project. This project, with a time frame of five years, focuses its research on the analysis of human brain activity before the onset of Alzheimer's disease. It is aimed at providing a range of clinical, biological and neuroimaging markers that could help identify reliable disease progression makers.

The Vallecas Project received additional co-financing from the National Alzheimer's Association, AFALContigo, for the pilot phase. At this stage, 200 volunteers aged between 70 and 85 years and normal mental function were studied. The main objectives of this pilot phase were response calibration, calculate the proportion of volunteers valid among all who intended to participate, protocol and test acceptance, calculate completion times or estimate fluency itinerary, among others.

In 2011, the Caja Madrid Social Project joined in and the main study was launched during the month of October. It is intended to assess up to 1,200 people with the characteristics expressed in the pilot phase. This sample size should allow meaningful data on the pre-dementia stage in at least 75 individuals (adverse scenario).



3. SCIENTIFIC ACTIVITY OF THE UIPA

105 volunteers had already been enrolled in the study by late 2011.

Participants are included in the study once they have signed the Informed Consent (IC) and will be evaluated once a year for five years, through a protocol covering socio-sanitary issues, anamnesis, medical and neuropsychological examinations, brain MRI (with no contrast) and blood testing. From all this, researchers will get information about:

- Sociodemographic and clinical data. Age, family history, education, occupation, vascular risk factors, neurological and psychiatric history.
- General clinical and neurological examination.
- Motor function examination. Walking scale and timed tests.
- Neuropsychological examination by "screening" tests (MMST and FAQ), cognitive complaints questionnaire, learning test,



visuospatial skills, key numbers test, test category, etc.

- ① Cranial Neuroimaging, including volumetrics, spectroscopy, diffusion tensor, FLAIR, T2 and T2*, 3D SPGR.
- ② Blood biomarkers. Determinations of predisposing genetic risk factors (APOE, SORL1, and CTS3 PRNP) and β -amyloid peptide will be made.

Other ongoing projects

1. Quality of life in institutionalized persons with dementia: evaluation, characteristics and associated factors. Funding Agency: CIEN Foundation. Principal Investigator: Dr. M.J. Bettencourt Pereira-Forjaz. Period: 3 years (2009-2012).
2. Task Force of The Movement Disorders Society – Quality of life measures for Parkinson's disease. Funding Agency: The Movement Disorder Society. Principal Investigator: Dr. P. Martínez Martín. Period: 2010-2011).
3. Parkinson's disease Common Data elements - Scales metrics and statistics. Funding Agency: National Institute of Neurological Disorders and Stroke (NINDS), USA. Principal Investigator: Dr. Jordan Elm. Member: Dr. P. Martínez Martín. Period: 2009-2011).
4. Robot Therapy in Dementia. Funding Agency: Fondo de Investigación Sanitaria (FIS), Carlos III Institute of Health. Principal Investigator: Dr. P. Martínez Martín. Period: 2010-2013.
5. Non-Motor Symptoms Longitudinal International Study. Funding Agency: International Collaboration and UK NHS Portfolio – UK National Health System. Principal Investigators: Prof. K. Ray Chaudhuri and Dr. P. Martínez Martín. Period: 2010-2015).
6. Robot Therapy in Dementia. Funding Agency: IMSERSO, Ministry of Health, Social Affairs and Equality. Principal Investigator: Dr. P. Martínez Martín. period: 2011-2012.

7. Assessing and diagnosing anxiety in patients with Parkinson's disease. Funding Agency: Michael J. Fox Foundation, USA. Principal Investigator: Dr. P. Martínez Martín. Period: 2011-2013.
8. 12936A Phase III multicenter trial with the 5-HT₆ antagonist Lu AE58054 in mild and moderate Alzheimer's disease. Funding Agency: Lundbeck. Principal Investigator: Dr. J. Olazarán Rodríguez. Period: 2010-2012).
9. Identification of blood markers for multiparameter diagnosis of Alzheimer's disease. (BCR-ALZ-2011). Funding Agency: Biocross, S.L. Principal Investigator: Dr. J. Olazarán Rodríguez. Period: 2011-2012).

Future projects

Diagnostic Orientation Unit - focused on providing corroboration or second opinion to diagnosed individuals with suspected cognitive impairment or dementia in early stages, referred by institutions with collaboration agreement for this purpose. Aims to provide a service of social and health interest, providing in-depth evaluations, high quality Neuroimaging (RM3T) and diagnosis by the Unit multidisciplinary expert team. On the other hand, it also aims to facilitate the recruitment of volunteers for future research programs.

Training

During 2011 UMA staff, in collaboration with other UIPA departmental areas within the continuing education program designed by the CIEN Foundation, have actively participated by giving lectures on 13 training courses and 7 seminars.

Courses

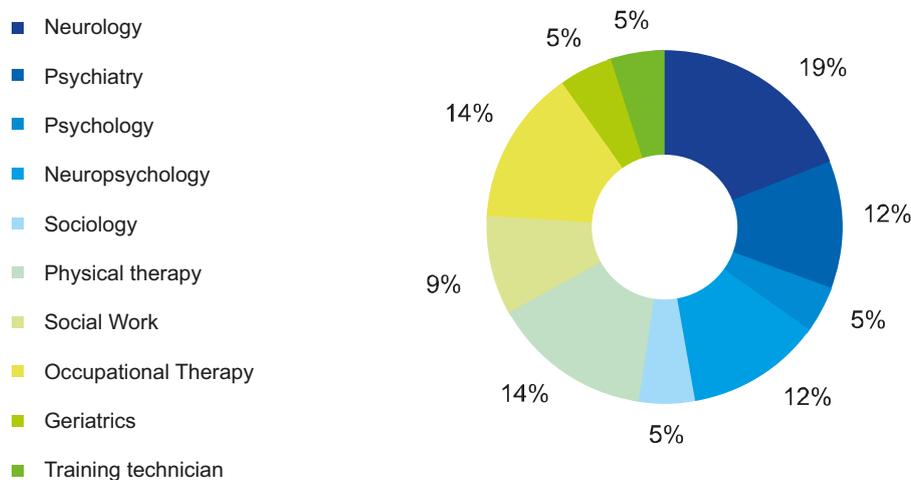
1. II Course on Multidisciplinary training in Neurodegenerative Dementias. Organized by: Dr. P. Martínez Martín and Prof. H. Peraíta.



3. SCIENTIFIC ACTIVITY OF THE UIPA

- Institution: UIPA, CIEN Foundation, Queen Sophia Foundation – Department of Basic I and CEEN Grupo, UNED. Queen Sophia Foundation Alzheimer Center, Madrid, September, 2011. *[in spanish]*
2. Epidemiology and clinical course of Alzheimer's disease. Professor: P. Martínez Martín. Course title: Master on Neurobiology of Aging Brain and Nervous System Diseases. Institution, place and date: Cajal Institute-CSIC, Madrid, March, 2011. *[in spanish]*
 3. Clinical scales in movement disorders. Professor: P. Martínez Martín. Course title: Master on Movement Disorders. NeuroCampus, University of Murcia (<http://fc.viguera.com/mtm2011/>). *[in spanish]*
 4. Recommendations for application of the MDSUPDRS. Professor: P. Martínez Martín. Teaching Course, 15th Congress of the Movement Disorder Society. Toronto, Canada, 2011.
 5. Concept and classification of dementias. Professor: P. Martínez Martín. Course title: II Course on Multidisciplinary training in Neurodegenerative Dementias. Queen Sophia Foundation Alzheimer Center, Madrid, September, 2011. *[in spanish]*
 6. Presentation of clinical cases. Professor: J.L. Dobato Ayuso. Course title: Master on Neurobiology of Aging Brain and Nervous System Diseases. Cajal Institute-CSIC, Madrid, March, 2011. *[in spanish]*
 7. Design and development of clinical trials for approval of treatments for Alzheimer's disease. Profesor: J. Olazarán Rodríguez. Course title: Master on Neurobiology of Aging Brain and Nervous System Diseases. Cajal Institute-CSIC, Madrid, March, 2011. *[in spanish]*
 8. Non-pharmacological therapies for behavioral and psychological symptoms. Professor: J. Olazarán Rodríguez. Course Title: II International Conference "Use of restraints in elderly dependents." Department of Social Affairs,

UMA personnel by specialty





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- Family, Youth and Sports of the Government of Navarra, Pamplona, March, 2011. *[in spanish]*
9. Nonpharmacological treatments: Are cognitive stimulation programs clinically effective? Professor: J. Olazarán Rodríguez. Course Title: II Conference Alzheimer Málaga. Andalusian Institute of Neuroscience and Behavior, Málaga, Mayo, 2011. *[in spanish]*
 10. Pharmacologic and nonpharmacologic treatment of dementia. Professor: J. Olazarán Rodríguez. Course Title: II Course on Multidisciplinary training in Neurodegenerative Dementias. Queen Sophia Foundation Alzheimer Center, Madrid, September, 2011. *[in spanish]*
 11. Are cognitive stimulation programs effective? Professor: J. Olazarán Rodríguez. Course Title: World Alzheimer Day. Neurodem Association, Almería, September, 2011. *[in spanish]*
 12. Current treatment of dementia: application of the treatment according to the patient profile and participation of the neurologist. Professor: J. Olazarán Rodríguez. Course Title: Update Day in the Treatment of Dementia (4th edition). Lain Entralgo Agency, Madrid, October, 2011. *[in spanish]*
 13. Review of the effectiveness of non-pharmacological therapies. Professor: J. Olazarán Rodríguez. Course Title: University Extension Course on "Training in neuropsychological assessment and psychostimulation in people with Alzheimer's disease and other dementias". Department of Basic Psychology, UNED, Madrid, November, 2011. *[in spanish]*
 2. Apathy in dementia: an update. Concept and theoretical models. Measuring instruments. The new APADEM scale. Cruz Orduña I, Ramos García I y Agüera Ortiz L, UIPA, CAFRS, CIEN Foundation. Madrid, March 16, 2011. *[in spanish]*
 3. Parkinsonism and dementia: a clinicopathologic case. Gil Moreno MJ, Neurology Service, Hospital of Getafe, Valentí M, UIPA, CAFRS, CIEN Foundation and Rábano A, BT-CIEN, CAFRS, CIEN Foundation. Madrid, April 7, 2011. *[in spanish]*
 4. Detection of mild cognitive impairment: neuropsychological markers and methods of analysis. Peraíta H. and C. Díaz, Department of Basic Psychology. UNED. Madrid, May 25, 2011. *[in spanish]*
 5. Diagnostic criteria for Alzheimer's: report of two cases. Valentí M, UIPA, CAFRS, CIEN Foundation, Olazarán J, UIPA - CAFRS - CIEN Foundation and Rábano A, BT-CIEN, CAFRS, CIEN Foundation. Madrid, July 12, 2011. *[in spanish]*
 6. Clinicopathologic correlations in CAFRS tissue donors: cognitive profiles and language pathology. Hernández M, Master in Neuroscience, UAM-CSIC and Rábano A, BT-CIEN, CAFRS, CIEN Foundation. Madrid, October 26, 2011. *[in spanish]*
 7. Cognitive reserve: How can we measure it? What Neuropathology teaches us? López de Silanes C, UIPA, CAFRS, CIEN Foundation and Rábano A, BT-CIEN, CAFRS, CIEN Foundation. Madrid, December 21, 2011. *[in spanish]*

Continuing Education Program

1. Early biomarkers in Alzheimer's disease. Olazarán J., UIPA, CAFRS, CIEN Foundation, and M. Calero, National Microbiology Center (Carlos III Health Institute), UIPA, CIEN Foundation and CIBERNED. Madrid, February 24, 2011. *[in spanish]*

Participation in editorial boards

The UMA professionals have participated during 2011 in Editorial Boards or as reviewers of numerous scientific journals:



1. L. Agüera Ortiz. Director of Psychogeriatrics Magazine. Editorial board member and reviewer For the following journals: Proceedings Psychiatry Spanish, Spanish Journal of Psychiatry and Mental Health, Alzheimer - Realities and research in dementia Aging & Mental Health.
2. J.L. Dobato Ayuso. Reviewer of journals Neurology and Journal of Neurology.
3. B. León Salas. Reviewer of the following journals: Journal of Neurology, American Journal of Public Health, Psychiatry Research and International Journal of Geriatric Psychiatry.
4. P. Martín Martínez. Member of the Editorial Board of Movement Disorders, Parkinson's Disease, Basal Ganglia.
5. P. Martín Martínez. Reviewer of over a dozen national and international journals in the fields of Neurology and Neuroscience.
6. J. Olazarán Rodríguez. Reviewer for International Research Grant Council of Hong Kong (RGC International Referee) and the Cochrane Dementia and Cognitive Improvement Group. External Advisor for the Federal Health Care Knowledge Centre of Belgium and the University of Cádiz Publications Service.
7. J. Olazarán Rodríguez. Reviewer of the following journals: British Medical Journal, The Journal of Nutrition, Health and Aging, Neuropsychological Rehabilitation, Non Pharmacological Therapies in Dementia, Journal of Neural Transmission, Psychiatry Research, The Journal of Clinical Psychiatry and Neurology.

Team

The translational approach is applied in all research projects that are developed in this UIPA Unit. This means that all the results of such investigations lead to new diagnostic and therapeutic approaches in improved care and increased quality of life for patients.

In 2011 the UMA consisted of 23 professionals, led by Dr. Pablo Martínez and coordinated by Dr. José Luis Dobato and Javier Olazarán. Dr. Pablo Martínez is also a member of the CIEN Foundation Scientific since June 2010 and was the Spanish representative in the Scientific Healthcare Research Agenda Workshop of the Joint Programming in Neurodegenerative Diseases, organized by the European Commission and held in London on March 2011.

The group of professionals that constitutes the UMA have been selected for their multidisciplinary profile and high qualifications demonstrated in the UMA research areas.

Staff

- Pablo Martínez Martín, MD, PhD (Neurology specialty) - UIPA Scientific Director.
- Jose Luis Dobato Ayuso, MD, PhD (Neurology specialty)- UMA Coordinator until mid- 2011.
- Luis Agüera Ortiz, MD, PhD (Dr. Medicina, especialidad Psiquiatría).
- Beatriz León Salas, Sociologist (Demography and Sociology of Health specialty).
- Javier Olazarán Rodríguez, MD, PhD (Neurology specialty)- UMA Coordinator from mid- 2011.
- Jorge López Alvarez, MD (Psychiatry specialty).
- Isabel Ramos García, MD (Psychiatry specialty).
- Meritxell Valentí Soler, MD (Neurology specialty).
- Belén Frades Payo, Psychologist (Neuropsychology specialty).



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Fellows

- Isabel Cruz Orduña, Psychologist (Neuropsychology specialty).

Collaborators

Physical therapy

- Laura González Hervías
- Nadia Méndez Robles
- Emma Osa Ruíz

Social Work

- Cristina Martín Carmona
- Gema Melcón Borrego

Occupational Therapy

- Ana Montero Sánchez
- Elena Ortega Rojo
- Sara Sáiz Bailador

Geriatrics

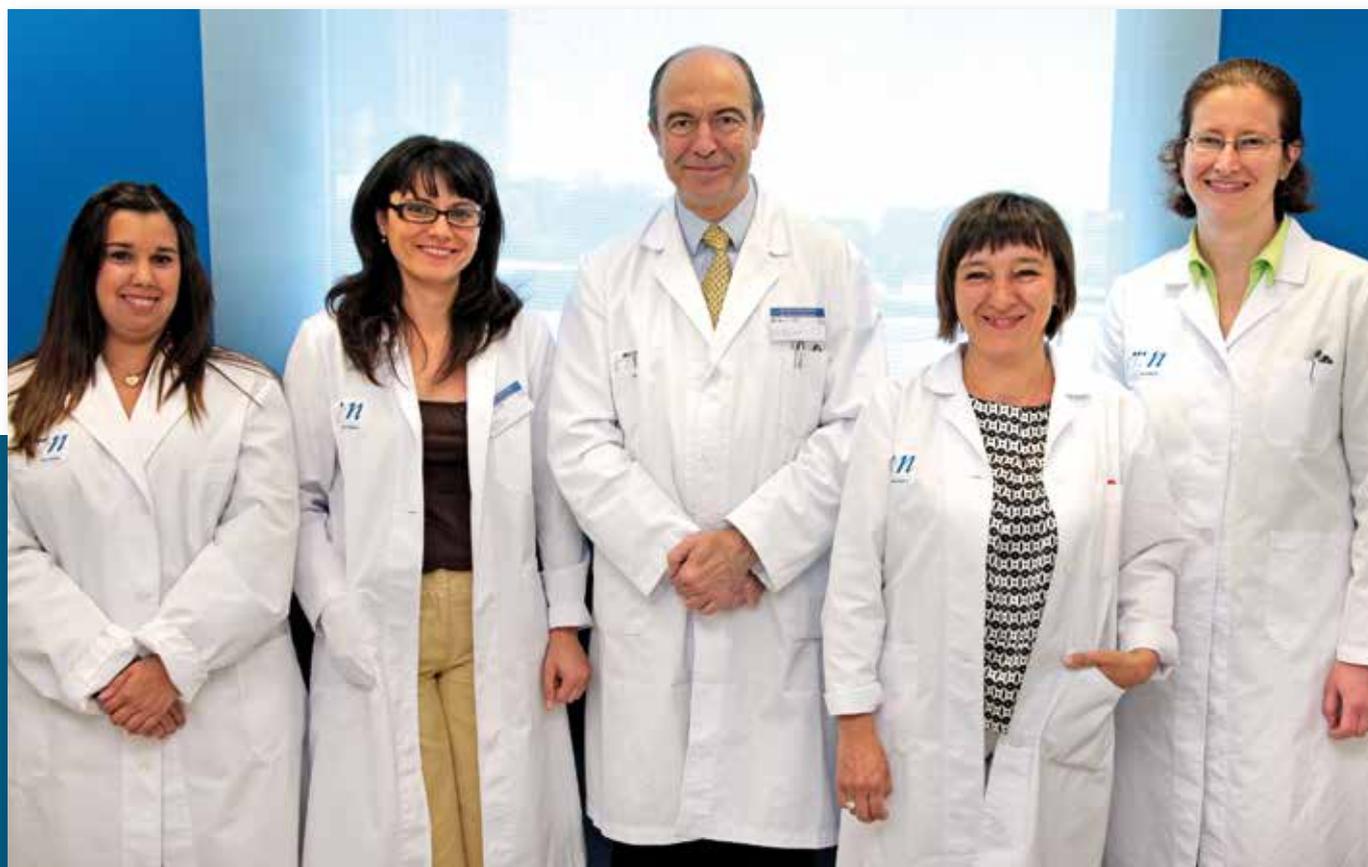
- Belén González Lahera

Psychology

- M^a Cristina Valle de Juan

Training Technician

- Víctor Isidro
- Cynthia Pérez Muñano



UMA Team



3.2.2 Department of Neuropathology

The Area of Neuropathology of the CIEN Foundation is dedicated primarily to establish a definitive neuropathological diagnosis by postmortem studies. Since 2009 manages and coordinates the BT-CIEN (Tissue Bank - CIEN Foundation), which integrates the activity previously conducted by the Tissue Bank for Neurological Research in Madrid (BTIN) and the existing biobank at the Queen Sophia Foundation Alzheimer Center.

The BT-CIEN aims to promote the study of neurological diseases such as Alzheimer's, Parkinson's, Huntington's and Amyotrophic Lateral Sclerosis, through the availability of human brain tissue for research. To do this it preserves cerebral tissue samples and other neurological samples in long-term optimal conditions. Research conducted with the tissues from this publicly-owned biobank, are the basis for developing new drugs and therapeutic strategies in the future, as well as for detecting potential biomarkers that will help in early diagnosis of different pathologies.



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Depending on the origin of the samples, the BT-CIEN has two sample transfer programs:

- An internal program, intended for residents of the Queen Sophia Foundation Alzheimer Center, where the UIPA - CIEN Foundation is located.
- An external program, which represents the continuation of the activities conducted by the Tissue Bank for Neurological Research (BTIN) that was integrated with the UIPA biobank in late 2009 and marked the establishment of the BT-CIEN.

Services provided by the Department of Neuropathology

- Performing neuropathological autopsies on brain tissue donors.
- Management of a neurological samples biobank. Transfer of samples.
- Diagnostic Consultation of neuropathological cases.
- Performing neurohistological techniques on neurological samples from human and experimental origin.
- Collaboration with research projects from other centers.

Ongoing research areas

The Department of Neuropathology has participated in recent years in many research projects and collaborative research networks, focused on pathogenic mechanisms and biomarkers of various neurodegenerative diseases (Alzheimer, Parkinson, ALS, tauopathies, etc). Among these projects, the collaboration with Biocross S.L. and participation in the DENDRIA consortium (CENIT program), led by the company Noscira can be highlighted. Besides these collaborations, the department keeps the following research areas ongoing:

- Study of neuropathological and molecular phenotypes in Alzheimer's disease, prion diseases and related dementias.
- Regional patterns of involvement in Alzheimer's disease.
- Phenotypic classification of tauopathies.
- Neurodegenerative pathology associated with very old age ("oldest-old").

Establishment of a nation-wide network of biobanks

Dr. Alberto Rábano is the Director of the UIPA - CIEN Foundation Department of Neuropathology and head of BT-CIEN. Since the beginning of its activity, the BT-CIEN has actively participated in the creation and development of new tissue banks in different Autonomous Communities.

Last year, the BT-CIEN was invited to participate as an observer member of the Network of ISCIII Hospital Biobanks. Also in 2011, the Autonomous Community of Madrid approved the draft constitution of the Neurodeglab research network in neurodegenerative disorders, of which the BT-CIEN is part of.

The BT-CIEN actively collaborates with other brain banks:

- ▶ Brain Bank of the Region of Murcia (BCRM).
- ▶ Biobank of the Alcorcon University Hospital Foundation.
- ▶ Neurological Tissue Bank of the Castilla y León Institute of Neurosciences.
- ▶ Biobank Córdoba University Queen Sophia Hospital.

Results in 2011

The activity of 2011 has been marked by growth, with an 55% increase compared to 2010. The social awareness work carried out has resulted in an increase in the number of donations of about 37%



between the internal and external programs the of BT-CIEN, and almost 44% in the number of active donors.

The BT-CIEN was awarded as one of the 100 Best Ideas of the Year by the magazine Actualidad Económica in the category of Health. These awards, granted by the oldest economic magazine in Spain, recognized the commitment to innovation of business entities awarded each year.

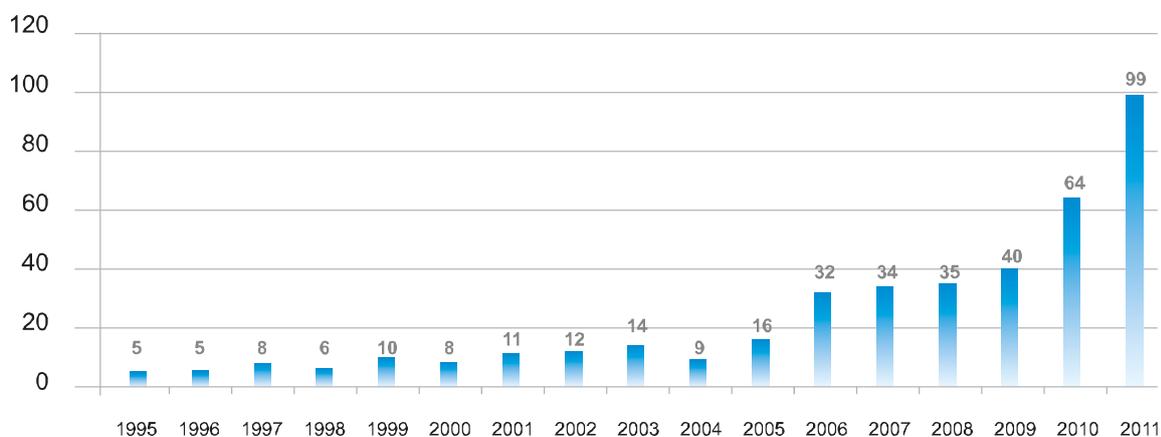
Donations

The CIEN Foundation has several lines of communication open to resolve queries regarding donations and tissue extractions from a deceased donor. One of them is a phone number available 24 hours, 365 days a year, and another one is through the website <http://bt.fundacioncien.es> for people interested in becoming donors and researchers requesting tissue samples for research projects. It is noteworthy that the CIEN Foundation

has the technology and resources required for achieving a postmortem interval of 5.5 hours, which is critical for obtaining high quality neurological samples.

- The BT-CIEN has accumulated in 2011 a total of 183 registered cases. These cases come from donations with premortem informed consent, since the Spanish legislation only authorizes the use of brain tissue for research when it comes from donations.
- The number of registrations has increased by 55% in 2011 compared to 2010, going from 64 to 99 cases.
- The BT-CIEN external program has produced 49 of these extractions.
- There are 41 cases coming from banks and hospitals consultations, primarily from the Brain Bank of the Region of Murcia.
- The nine remaining cases come from the UIPA and Queen Sophia Alzheimer Center.

Annual distribution of tissue donations 1995-2011



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Donor Registry

The BT-CIEN has 547 active donors registered, 71 of which have registered during 2011. During this year, the bank has experienced a significant increase in requests for information about brain donation due to the communication actions carried out. The social awareness campaign has been conducted consistently over time, maintaining regular contact with the media, patient and hospital medical centers. The goal has been to report on the existence of the donation program and promote the interests of citizens.

- The BT-CIEN receives a high volume of inquiries from people interested in becoming donors. In these cases, the biobank redirect potential donors living in autonomous regions with their own brain bank, such as Catalonia, Navarra, Galicia and Murcia, to the nearest bank.
- Bank staff maintains regular contact with potential donors registered in their files, both those included in the external program as well as those who are part of the Queen Sophia Alzheimer Center Foundation. Such continuous monitoring allows updating of data from those registered in the BT-CIEN and renewal of Informed Consent.

Transfer of samples

Spanish and foreign researchers regularly request supply of free brain tissue samples from the BT-CIEN. These requests are handled through the BT-CIEN website complying with the Biomedical Research Act (Act 14/2007 of July 3). A Scientific Committee, overseen by the Carlos III (ISCIII) Institute of Health Research and Animal Welfare Ethics Committee is responsible for evaluating each application.

BT-CIEN Scientific Committee

- Meritxell Valentí, secretary (UIPA).
- Estrella Gómez Tortosa, Jiménez Díaz Foundation.
- José Lucas, Center for Molecular Biology "Severo Ochoa", CSIC.
- José Ramón Naranjo, National Center of Biotechnology, CSIC.
- José Luis Dobato, UIPA.
- Javier Olazarán, UIPA.

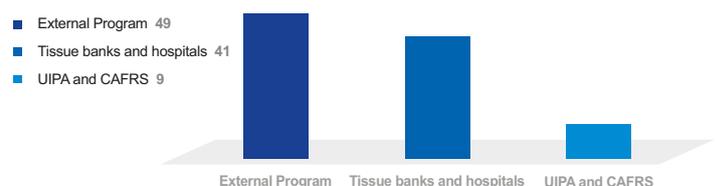
Thus, 12 sets of brain tissue samples were transferred during 2011 to various research centers in Madrid, Murcia, Catalonia and Valencia.

Research projects

The research being conducted on brain tissue enables the advancement of our understanding of diseases like Alzheimer's, while in-live diagnosis of neurological disease is merely probabilistic. The research with human tissue is therefore essential to extend the search for biomarkers that help us to define Alzheimer's disease in its early stages or the potential connection with other neuro-degenerative diseases involving accelerated disease progression.

The Department of Neuropathology participates in numerous research projects and collaborative research networks, focused on pathogenic mechanisms and different biomarkers of

Origin of extractions



neurodegenerative diseases such as Alzheimer's, Parkinson's, amyotrophic lateral sclerosis, tauopathies ... In addition, we continue our collaboration with Biocross S.L. and our participation in the DENDRIA consortium (CENIT program) for the development of new drugs for nervous system disorders.

Ongoing projects

- Characterization of tau protein polymers in Alzheimer's disease: a comparison with those found in other tauopathies. Characterization of gene expression in the human entorhinal cortex. Funding Agency: CIEN Foundation. Period: 2009-2010, extended in 2011. Principal Investigator: Alberto Rábano (CIEN Foundation). *[in spanish]*
- Synaptic Restoration: a new strategy for Alzheimer's disease. Funding Agency: CIEN Foundation - Queen Sophia Foundation. Period: 2009-2011. Principal Investigator: Alberto Farrús Gamero (CSIC). *[in spanish]*
- Cortical Microcircuits and Alzheimer's disease. Funding Agency: CIEN Foundation - Queen Sophia Foundation. Period: 2009-2011. Principal Investigator: Javier de Felipe Oroquieta (CSIC). *[in spanish]*
- DENDRIA, innovative solutions to accelerate the identification and development of drugs for nervous system pathologies. Funding Agency: CENIT Project. Period: 2010-2014. Principal Investigator: Miguel Medina (Noscira). *[in spanish]*
- Functional analysis of the interaction DREAM/DYRK1A in murine models of Alzheimer's disease and Down syndrome. Funding Agency: CIEN Foundation - Queen Sophia Foundation. Period: 2010-2011. Principal Investigator: José Ramón Naranjo (CSIC). *[in spanish]*

Training: courses and seminars

- A. Rábano. "Clinicopathological case report". Continued education Program. Alzheimer Project Research Unit. Madrid, April 2011. *[in spanish]*
- A. Rábano. "Clinicopathological case report". Neuroclub ordinary meeting. Medical School, University of Murcia. Murcia, June 2011. *[in spanish]*
- A. Rábano. "The brain bank activity in Madrid and Castilla-La Mancha: what are we doing and what could we do?". "Forum Co-De", Cognition and Dementia Group Meeting of the Madrid Neurology Association. Madrid, June 2011. *[in spanish]*
- A. Rábano. "Neuropathology and Brain Bank", UIPA. FCT & ISCIII - Joint Workshop Neurodegenerative Diseases Networks & Biobanks. Lisbon, June 2011.
- A. Rábano. "General concepts of human transmissible spongiform encephalopathies". A. Rábano. "Review of cases of human Transmissible Spongiform Encephalopathies described in Spain". Course on Transmissible Spongiform Encephalopathies. Organized by the Veterinary School, University of Zaragoza. Zaragoza, May 2011. *[in spanish]*
- A. Rábano. "Immunosuppressed patient with hemiplegia". Clinicopathological session, Closing of the academic year. Department of Medicine, Medical School, University of Salamanca. Salamanca, June 2011. *[in spanish]*
- A. Rábano. "Laminar and modular distribution of Alzheimer-type pathology in the cortex". "Alzheimer's disease: challenges from biomedical technology." Summer School, Technical University of Madrid. La Granja, Segovia, June 2011. *[in spanish]*



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- A. Rábano. "Neurological tissue donation: findings and knowledge of risk factors in relatives of Alzheimer patients". Invited lecture, Association of Alzheimer Patients Relatives of. Salamanca, June 2011. *[in spanish]*
- A. Rábano . "Brain banks or hospital biobanks?". Research Seminars, Medical School, University of the Basque Country. Bilbao, June 2011. *[in spanish]*
- M. Calero and A. Rábano. "Molecular pathology of prion diseases: a new paradigm for neurodegenerative diseases?". Seminars of the Department of Cellular, Molecular and Developmental Neurobiology. Cajal Institute-CSIC. Madrid, September 2011. *[in spanish]*
- A. Rábano. "Neuropathology of neurodegenerative dementias". II Course on multidisciplinary training in neurodegenerative dementias. Organized by the UIPA and UNED. Madrid, September, 2011. *[in spanish]*



- A Rábano. "Pathologist viewpoint of the Alzheimer's disease preclinical phase". XVI Continuing Education Course of the Asturian Neurological Society. "Presymptomatic stages of neurodegenerative diseases." Organized by the Neurological Society. Oviedo, October, 2011. *[in spanish]*
- A. Rábano. "Brain Bank: benefits and usefulness in neurological research." X Neuroscience Research Institute La Paz (IdiPaz) Forum. Madrid, October, 2011. *[in spanish]*
- A. Rábano. "Tissue Banks". XIV Informative week. Alzheimer Patients Relatives Association of San Rafael Córdoba, October, 2011. *[in spanish]*
- A Rábano. "How is normal neuropathological aging?". "Does normal (neurological) aging exists?" Course organized by the SEN Neurogeriatrics Study Group Barcelona, November, 2011. *[in spanish]*
- A. Rábano. "Hippocampal sclerosis". Neuroclub ordinary meeting. Medical School, University of Murcia. Murcia, June, 2011. *[in spanish]*
- A. Rábano and M. Hernández. "Clinicopathologic correlations in CAFRS tissue donors: cognitive profiles and language pathology". Continued Education Program, Alzheimer project Reserach Unit. Madrid, October, 2011. *[in spanish]*
- A. Rábano. "Brain banks in Castilla-Leon". Conference organized by the Multiple Sclerosis Association of Valladolid. Valladolid, October, 2011. *[in spanish]*
- A. Rábano. "General concepts on human transmissible spongiform encephalopathies. Review of cases of human Transmissible Spongiform Encephalopathies described in Spain". Course on Transmissible Spongiform Encephalopathies. Organized by the Veterinary School, University of Zaragoza. Zaragoza, November 2011. *[in spanish]*
- A. Rábano. "Brain banks. Molecular pathology of prion diseases. A new paradigm for neurodegenerative diseases? Máster "Molecular basis of neurodegeneration". MedicalSchool, Autonomous University of Madrid. Madrid, November, 2011. *[in spanish]*
- A. Rábano. "Common features of neurodegenerative diseases". Master of Neurodegenerative Diseases. Medical School, University of Murcia. Murcia, November 2011. *[in spanish]*
- A. Rábano. "Theoretical-practical seminar on brain banks". Master of Biochemistry, Molecular Biology and Biomedicine, Complutense University of Madrid. Madrid, November, 2011. *[in spanish]*

Other activities of interest

- "The brain tissue donation for research: Madrid, 2011 ", by Alberto Rábano. Article published in Madrid Parkinson nº 37. 1st Quarter, 2011. *[in spanish]*
- "Einstein's brain", presentation by Alberto Rábano in Amazings Bilbao 2011, National Congress of Scientific Dissemination. Bilbao, October, 2011. *[in spanish]*
- "Brain donation to biomedical research". Disseminating conference at Coffee on Thursdays, organized by AFAL. November, 2011. *[in spanish]*
- Alberto Rábano has been appointed to the Scientific Committee of the II National Congress on Prions. Madrid, December, 2011. *[in spanish]*



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Team

The BT-CIEN team consists of four professionals that make up the CIEN Foundation Department of Neuropathology. The team is led by Alberto Rábano, neuropathologist, a full time neuropathology technician and two part-time technicians. They all provide support to this department by also taking care of maintaining an around the clock active warning system to allow for tissue extractions, 24 hours a day, 365 days a year.

The professionals who are part of the team are:

- Alberto Rábano Gutiérrez, MD. Neuropathologist and Head of Department.
- Elena Gómez Blázquez. Full-time Neuropathology Technician.
- Ana Belén Rebolledo Povez. Part-time Neuropathology Technician.
- Luis Javier Martín Lentijo. Part-time Neuropathology Technician.



Neuropathology Team



3.2.3 Department of Neuroimaging

The CIEN Foundation - UIPA Department of Neuroimaging is managed by the DIM Foundation (Foundation for the Development of Advanced Medical Imaging), which is part of the Center for Biomedical Technology (CTB) established by the Technical University of Madrid (UPM), and encompasses multiple laboratories related to biomedical technology. To conduct its research has the most advanced equipment: a 1.5 Tesla (T) Magnetic Resonance Imaging (MRI), a 3T MRI, a 64-detector CT scanner, a SPECT and a PET chamber. Because of this equipment, the Department participates in projects like IDEA (Project for the Development of Imaging Technology in MCI and AD) through the DIM Foundation, and has initiated collaboration with prestigious centers such as LONI (Laboratory of Neuroimaging, UCLA, USA) and MNI (Montreal Neurological Institute, Canada).

The Department of Neuroimaging, formed by highly qualified professionals, mid-term objective is the development of brain imaging, with particular interest in AD, and therefore is concerned with:

- The promotion and development of research projects in the field of neurodegenerative diseases with special interest in AD and related dementias.
- The acquisition and post-processing of MR images for the development of research projects.
- Spreading knowledge of neuroimaging techniques related to neurodegenerative disorders.
- The training of professionals in the field of obtaining, post-processing or interpretation of advanced neuroimaging.

This group of experts in-house serves UIPA both by studying CAFRS Day Center patients as well as by supporting the development of research projects from other departments. Furthermore, it participates in other external research projects in two of the most relevant clinical trials related to the development of vaccines against amyloid deposition, receiving patients from Madrid most relevant Dementia Units.

Regarding the contributions generated by the technological equipment used in this Unit, the following can be highlighted:

- Development of an MRI-compatible olfactory activation system, an olfactometer for which a patent in collaboration with Rey Juan Carlos the University has been filed.
- Development of a 3-Tesla MRI-compatible EEG system that allows monitoring functional studies and getting multimodal information during the performance of functional Magnetic Resonance Imaging (fMRI).
- Development of own MRI sequences for obtaining magnetic susceptibility images that will be useful to detect micro-hemorrhages in patients with cognitive impairment, as well as maps of iron deposits that can detect early changes in Alzheimer's disease and Parkinson's disease.

At the same time, our effort to develop new tools that promote technical and technological improvement of the Unit remains ongoing, such as:

- An automated system (Alz-Tools) capable of handling MRI data and send them to a measurement system that allows for an automated results report that will be available to investigators through a database.
- An analysis expert system using artificial intelligence techniques (DIGNA) that allows for obtaining online the risk percentage of



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developing Alzheimer's disease over the Internet. This Department has been a pioneer in presenting a program that employs over 50 variables across four different markers simultaneously obtained using 3T MRI: volumetry, DTI, ASL and spectroscopy. The results were presented at the European Congress in Vienna on March 2011.

Major Achievements

Among the major achievements of 2011 is worth mentioning the participation in 26 research projects and two clinical trials, besides the launching of the normal aging project, "Vallecas Project", with all that entails: elaboration of a protocol for image acquisition, analysis and

validation of the different acquisition techniques in post-processing laboratory.

Regarding its work in supporting other UIPA research projects, the Department of Neuroimaging has provided preliminary results of samples of 257 subjects (UIPA, Dr. Dobato), and 86 subjects (UIPA, Dr. Olazarán). Likewise, the evaluation and follow-up process of the CAFRS residents has continued successfully.

It is also noteworthy the quantification of perfusion with different Arterial Spin Labeling techniques, as well as the incorporation to the team of Adrián Martín, a computer engineer and mathematician, fellow of the University Rey Juan Carlos of Madrid.



Other relevant results

The DEMCAM project concluded in 2011 with relevant results. It was found that 3T MRI obtains better data than conventional MRI: structural studies confirm that markers of atrophy are the most efficient to assess neurodegeneration and 3T MRI produces better functional studies and spectroscopy. In addition, all groups studied have been classified correctly and it was found that the combination of multiple markers significantly increases image sensitivity and specificity.

Volumetric studies conducted on patients admitted to the CAFRS have provided significant results, despite being patients with advanced Alzheimer's disease with its associated complications. Moreover, results obtained in

another Volumetry study carried out on subjects with Mild Cognitive Impairment was awarded as the best paper at the International Congress on Controversies in Neurology held in Prague. For the purposes of number of visits, in 2011 this figure reached 1022 visits and the number of studies amounted to a total of 5738.

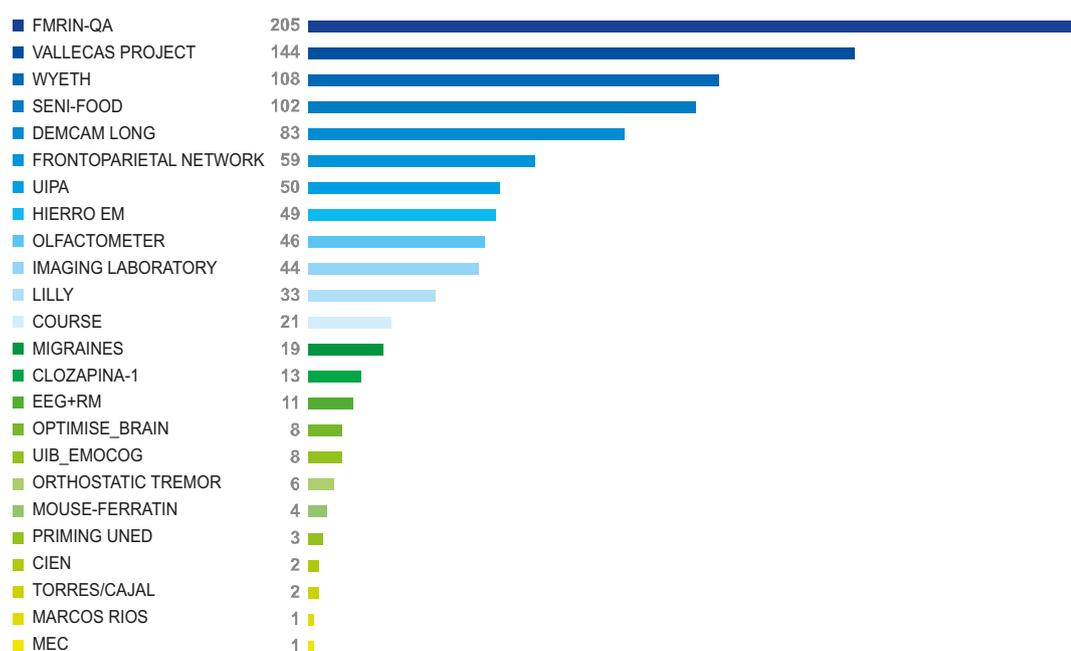
Research projects

In 2011 the Department of Neuroimaging participated in 26 research projects, a 24% increase over 2010, 6 of which have been already completed and 20 are still ongoing.

Projects completed in 2011 include the following:

1. "Multidisciplinary parametric study of working memory deficits in normal aging". Education

Number of subjects submitted to MRI in 2011



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Ministry R&D Project. Ref: SEJ2006-07560/PSIC.
Principal Investigator: F. Maestu Unturbe.

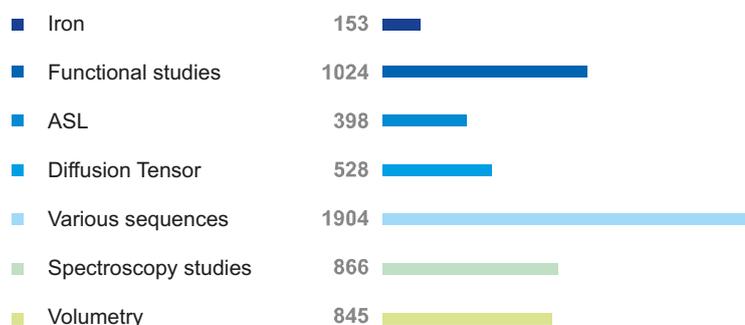
Advanced Alzheimer. Volumetric Analysis".
Principal Investigator: J.L. Dobato.

2. "Quantification by magnetic resonance spectroscopy of the relationship glutamate/glutamine in the occipital cortex as migraine pathogen determinant". Principal Investigator: J. González de la Aleja.
3. "Brain neuroplasticity in occipital areas in blind subjects after repetitive tactile stimulation". Principal Investigator: T. Ortiz Alonso, UCM Medical Psychology Professor.
4. "Longitudinal study of iron deposition in deep gray matter by MRI, brain atrophy and clinical progression in patients with relapsing remitting and secondary progressive multiple sclerosis". Principal Investigator: Cristina Guijarro Castro, neurologist and Ana Ramos, neurologist. 12 de Octubre University Hospital, Madrid.
5. "Early detection of mild cognitive impairment".SEJ-2007-063325. UNED. Principal Investigator: H. Peraita.
6. UIPA. "Longitudinal study of patients admitted to the residence of the FRS. Monitoring of

Projects that have continued running for 2011 are:

1. Project: "High Field Neuroimaging Study for detection of the pathways involved in the genesis of tremor in different pathogenic model of neurodegenerative diseases" Principal Investigator: Dr Alvaro Sánchez Ferro. 12 de Octubre University Hospital, Madrid. 2011-2012.
2. Project: "Study of the efficacy of different active ingredients in dairy on the cognitive health in the elderly" Principal Investigator: Gregorio Varela Moreiras. 2011-2012.
3. Project: "Multicenter observational longitudinal study in the Madrid region. Analysis of factors predicting development of dementia in people with mild cognitive impairment". CIEN Foundation fellowship. Principal Investigator: A. Frank. 2009-2012.
4. MRI studies with brain preparations, together with the Unit of Pathology. J. Alvarez- Linera y A. Rábano.

Classification of studies conducted in 2011



5. Project: "Dopamine - dopaminergic modulation for incorporating rules in populations with psychotic episode or risk for developing bipolar disorder or schizophrenia." Principal Investigator: Margarita García Amador. Gregorio Marañón Hospital Foundation for Biomedical Research.
 6. Project: "Optimise". Principal Investigator: R. Kahn. University Medical Center Utrecht. 2011-2013.
 7. Wyeth clinical trial (Multicenter, European) "Phase 3, multicenter, randomized, double-blind, placebo-controlled, parallel group study on the efficacy and safety of Bapineuzumab (AAB-001, ELN115727) in subjects with mild to moderate Alzheimer's disease carrying apolipoprotein Eε". Protocol code: Wyeth 3133K1-3000-3001-WW y extension protocol 33133K1-3302& 3133K1-3003.
 8. Lilly clinical trial (Multicenter, European) "Effect of passive immunization on the evolution of Alzheimer's disease: LY2062430 versus placebo." Eli Lilly H8A-MC-LZAN.
 9. Project: "Clozapine in first-episode schizophrenia as possible preventive treatment of brain and clinical impairment" Protocol code: CLOZAPINA-1, No EudraCT: 2006-00200-34. Development of nanomagnetic markers for early diagnosis and progression analysis of Alzheimer's disease by Magnetic Resonance Imaging. Biomedical Technology Center (CTB)/ETSIT-GBT. Principal Investigator: Dr. Francisco Javier Sanz Fuentenebro. 2010-2013.
 10. "Anatomical, functional and effective connectivity for the early diagnosis of Alzheimer's disease: contribution of the diffusion tensor in a multidisciplinary approach" (PSI2009-14415- C03-03). Principal Investigator: M. Ríos. 2010-2012.
 11. "Brain dynamics of cognitive and affective processing in fibromyalgia patients." University of Balearic Islands. Principal Investigator: P. Montoya. 2011-2013.
 12. "Compensation factors of cognitive ageing: The role of computer technology and physical activity - A behavioral and neuroimaging study of successful ageing". Principal Investigator: S. Ballesteros. 2011-2013.
 13. Vallecas Project: Early Detection of Alzheimer's disease. FIS2009 Research Projects. Principal Investigator: J.L. Dobato Ayuso. 2011-2015.
 14. Frontoparietal network and change in cognitive performance. Funding Agency: Ministry of Science and Innovation. Participating institutions: UAM, UCM, CIEN Foundation, LONI-UCLA, UCI, MNI. Principal Investigator: R. Colom Maranon. Number of researchers participating: 11 (Alvarez-Linera J., Quiroga A., Escorial S., Burgaleta M., Martinez K., Chun Shih P., Privado J., Karama S., Haier R., Thompson P., Colom R.). 2010-2013.
- Also, the Laboratory of Neuroimaging is conducting the following funded research projects:
1. "Arterial Spin Labelling Initiative in Dementia (AID)". Funding Agency: EU-COST Action. Ref: BMBS COST Action BM1103. Project Leader: Juan Antonio Hernández Tamames (Member of the Management Committee). Period: 01/07/2012 - 31/12/2016.



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2. "Neuroimaging Biomarkers in Neurodegenerative Diseases". Funding Agency: Ministry of Science and Innovation within the Fundamental Research National Program, R&D National Plan with reference TEC2009-14587-C03-02. Period: 2008-2011.
3. "Neuroimaging Biomarkers: Neurobim"
Participant Institutions: URJC Department of Electronic Technology and Department of Applied Mathematics of the University of Zaragoza. Principal Investigator: Juan Antonio Hernández Tamames. Number of researchers participating: 10. Period: January 2010 - December 2012.
4. "Advanced Monitoring System with Biometric Processing in Mobility and Intelligent Risk Prevention in population with chronic illness: Conectsalud". Funding Agency: 2011 Avanza Program from the Ministry of Industry, Tourism and Trade (MITYC). Ref: TSI-020100-2011-277. Principal Investigator: Susana Borromeo. Amount granted: 23.925€. Period: 2011 hasta: 2013.
5. "Olfactory pathology studies by functional magnetic resonance (fMRI)". Funding Agency: Community de Madrid. Ref: CCG10-URJC/SAL-5402. Principal Investigator: Susana Borromeo. Amount granted: 30.000€. Period: 1/01/2011 - 31/12/2011.
6. "Complex networks in biological systems" (URJC-CM-2010-CET-5006). Funding Agency: Rey Juan Carlos University and Community de Madrid. Principal Investigator: Juan Antonio Almendral Sánchez. Amount granted: 30.000€. Participants: 4. Period: 01/01/2011 - 31/12/2011.

Collaboration agreements

In 2011 the Department of Neuroimaging has signed or renewed collaboration agreements with national and international universities and research centers, among which are the following:

- Department of Intelligence and Personality, UAM Faculty of Psychology.
- Department of Electronics and Communications Engineering. University of Zaragoza.





- Electronic, Biomedical and Medical Imaging Technology Group, Rey Juan Carlos University, Madrid.
- Bioengineering and Telemedicine Group, Technical University of Madrid.
- Biological Psychology and Health Group, Autonomous University of Madrid.
- Chair of anatomy, Complutense University of Madrid.
- Knowledge Engineering Institute, Autonomous University of Madrid.

Additionally, the area of Neuroimaging has agreements with:

- LONI (Laboratory of Neuro Imaging, UCLA, USA).
- MNI (Montreal Neurological Institute, Canada).
- CTB. Development of technologies for the study of dementias.
- UCM Department of Human Anatomy: 3D Brain Atlas.
- UAM Department of Morphology / CSIC: animal models.
- UAM Department of Psychology. Brain Morphometry.
- URJ Department of Medical Imaging: image post-processing.
- Maudsley Hospital: ASL.
- Alberto Sols Institute: In vitro Spectroscopy.
- Ruber Internacional Hospital: PEC-CT, TAC 64 d.
- Doce de Octubre de Madrid Hospital: Radiology Service - training of residents.
- AFAL: volunteering for research and applications.
- GE: research support.
- Spanish Association of Technicians in Radiology: collaboration in training courses for technicians and dissemination.



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Future projects

Progress in the areas of research, training, streamlining and available resources are seen as key to the growth of this department in the future.

Regarding advancement in the area of research it is worth highlighting the increase in the number of publications, as well as the increasing number of collaborative research projects and partnerships with relevant institutions generated nationally and internationally.

Among the research projects to be developed in the near future are the following:

- Support to research projects from other UIPA units.
- Project with the Cajal Institute on transgenic mice.
- Project on PET-ASL correlations in Alzheimer's disease.
- New clinical trials. Research projects in clinical hospital settings.
- Collaboration with General Electric to develop specific techniques for protocols in dementia studies.
- Continued collaboration with the M+VISION program between MIT and CAM.

In terms of training, the Neuroimaging Unit proposes the following goals:

- New edition of the "Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy for technicians".
- New edition of the course "Theoretical and Practical Course in neuroimaging with MRI"
- New course on "Medical Imaging Analysis and Post-processing" for engineers, physicists and / or computer engineers.

- Continue with training in functional imaging for neuropsychologists from the laboratory and collaborators in the various projects.
- In addition, a platform to perform on-line courses it is being set up that will provide comprehensive training material to all researchers who wish so.

Finally, it is noteworthy the consolidation and growth of a working group that contributes to development in the UIPA of a Centre of Excellence that meets the requirements to participate in the Joint European Programming that will begin in 2012, which will make possible to position Spanish research on Alzheimer's disease in the European scientific frontline.

With regards to the optimization and improvement of processes as well as technical and technological resources, the future challenges are the following:

- Consolidation of a permanent storage system, as well as the database and results of each study.
- Development and improvement of MRI procedures in brain preparations, in collaboration with the Unit of Pathology.
- Setting up a supercomputing cluster system for analysis and post-processing of medical images.
- R & D in mathematical modeling for problem-solving and post-processing medical image acquisition.
- Further development of the Olfactory Stimulation Team, as well as the procedure and protocol for functional studies.
- Development of new sequences of image acquisition for MRI equipment. EPIC environment.
- Automating post-processing tasks such as segmentation, functional studies, etc.



- Creating an in-house template or cerebral model of elderly subjects for use in post-processing.
- Creating a software for measurements of T2 maps.
- Completing the ongoing doctoral thesis of the following lab members:

- Miguel Angel Laguna, "Open Source Web-PACS for multicenter clinical trials". Supervisors: Juan Antonio Hernández-Tamames and Norberto Malpica.
- Ana Beatriz Solana Sánchez. "Methodology for simultaneous recording of electroencephalography and functional Magnetic Resonance Imaging and application of the technique in patients with epilepsy". Supervisors: Francisco del Pozo

Guerrero y Juan Antonio Hernández Tamames.

- Pablo Garcia-Polo García. "Real-time bio-feedback in functional Magnetic resonance". Supervisors: Juan Antonio Hernández Tamames y Francisco del Pozo Guerrero.

Training

Over 2011 this department has been very active in organizing and participating in various training activities, including courses and seminars. In addition, this year two PhD dissertations were presented:

- Virginia Mato Abad, "Multimodal Integration of Biomarkers in Magnetic Resonance to Aid Diagnosis of Neurodegenerative and Neurological Diseases". European PhD Program.



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Supervisors: Juan Antonio Hernández Tamames, Javier Pereira. University of La Coruña. Faculty of Informatics.

- Juan Francisco Garamendi Bragado. "A unified variational framework for image denoising and segmentation". Supervisors: Norberto Malpica, Emanuele Schiavi. Rey Juan Carlos University, Madrid.

The participation of UIPA researchers in collaborative projects with other public or private R&D institutions has also been relevant this year, including two visits abroad:

- Investigator: Ana Beatriz Solana Sánchez. Institution: King's College London. Type: University. Place: London, United Kingdom. Starting date: January 17, 2011, 6 months. Aim: Doctoral thesis. Tasks:

1. Development of a spiral sequence for fMRI: code and reconstruction.
2. Getting acquainted with the ASL-BOLD sequence of UCSD.
3. Simultaneous recording synchronization in EEG/fMRI in CNS - King's College.

- Investigator: Virginia Mato Abad. Institution: King's College London. Type: University. Place: London, United Kingdom. Starting date: February 28, 2011, 3 months. Aim: Doctoral thesis. Tasks: Development of a CBF quantification analysis tool based on Arterial Spin Labeling acquisitions.

Three courses have been organized by the UIPA Neuroimaging Unit and its personnel has actively participated in other 20 courses held in the CIEN Foundation and 13 outside these premises. Neuroimaging-organized courses have been the following:

- "5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy for technicians". DIM Foundation, CIEN Foundation and Ruber Internacional Hospital. Madrid. January and October, 2011. [*in spanish*]
- 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. DIM Foundation, CIEN Foundation and Ruber Internacional Hospital. Madrid. June, 2011. [*in spanish*]
- Occupational Hazard Prevention Course "Occupational Hazard Prevention in Magnetic Resonance facilities of medical use". National Institute of Health and Safety at Work and CIEN Foundation. April and October, 2011. [*in spanish*]

The following courses have been offered at the CIEN Foundation premises:

1. Alfayate Sáez, E. Speaker. "Post-processing with Brainwave". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy". CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. [*in spanish*]
2. Alfayate Sáez, E. Speaker. "Quality control of spectra". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. [*in spanish*]
3. Alfayate Sáez, E. Curso: "Occupational risk prevention in MRI rooms for medical use". 5 hrs. Practical Workshop. CIEN Foundation. Madrid. April 2011 [*in spanish*]



4. Alfayate Sáez, E. Speaker. "Handling of images, records and data in MAgnetic resonance". 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
5. Alfayate Sáez, E. Speaker. "ASL Perfusion Sequences Without Contrast," 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
6. Alvarez-Linera, J.A. Speaker. "MRI, PET and Neurodegenerative Dementias". II UNED Course on Multidisciplinary Training in Neurodegenerative Dementias". Queen Sophia Foundation Alzheimer Project Unit (UIPA). Madrid. October 11, 2011. *[in spanish]*
7. Alvarez-Linera, J.A. Speaker. "Goals: Present and Future of eMRI and fMRI". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*
8. Alvarez-Linera, J.A. Speaker. Curso: "Present and Future of Neuroimaging". 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques.



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- CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
9. Garamendi Bragado, J.F. "Diffusion Tensor Image Post-processing with free software". 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
10. García Fernández, F. "Applications of 3T equipment". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*
11. García Fernández, F. "Applications of 3T equipment". 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
12. García Fernández, F. Speaker. 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
13. García Fernández, F. "Applications of 3T equipment". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*
14. García-Polo, P. "Workshop in Imaging Laboratory. SAGE". ". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*
15. Hernández Tamames, J. A. Speaker. "Functional Techniques: Diffusion, Perfusion and Tractography". 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
16. Hernández Tamames, J. A. Speaker. "Analysis of the hemodynamic response by Functional Magnetic Resonance". 5th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011. *[in spanish]*
17. Molina Molina, E. "Workshop in Imaging Laboratory". 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*
18. Molina Molina, E. Curso: "Volumetry. Research studies". 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*
19. Ramos González, A. Speaker. "Clinical Applications of Spectroscopy" 5th and 6th Theoretical and Practical Course in Functional Magnetic Resonance and Spectroscopy. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*

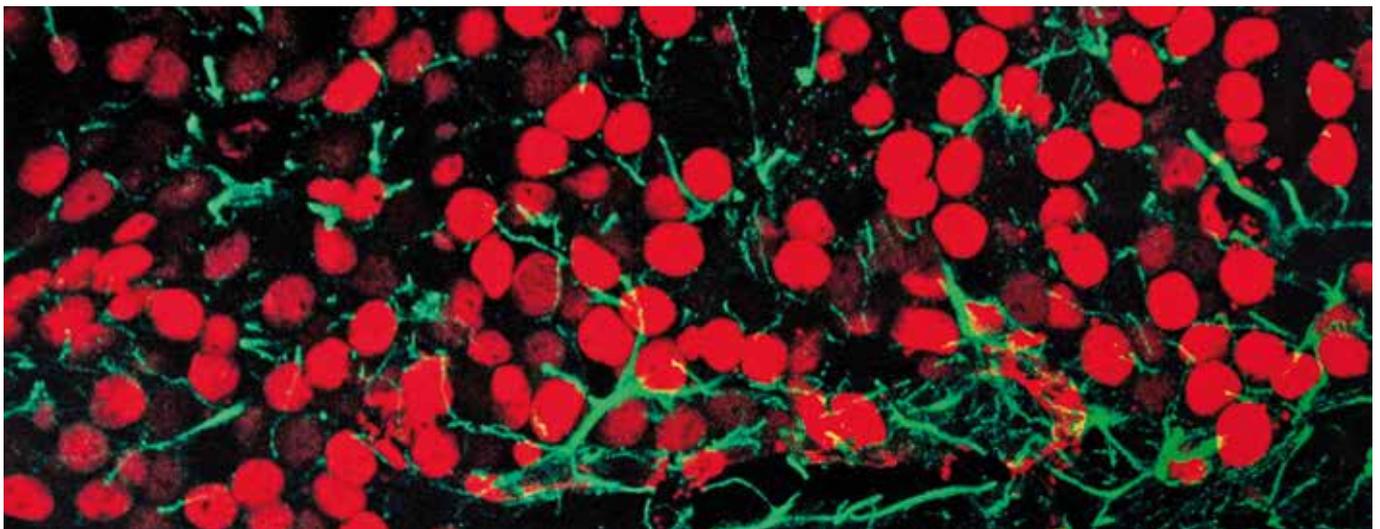


(Alzheimer Project). January 27-28, 2011 and October 6-8, 2011. *[in spanish]*

20. Ramos González, A. Speaker. "Vascular Studies" 1st Theoretical and Practical Course in Magnetic Resonance Neuroimaging Techniques. CIEN Foundation – Queen Sophia Foundation (Alzheimer Project). June 2-3, 2011. *[in spanish]*

The following seminars have been held outside the CIEN Foundation:

1. Hernández Tamames J. A. Speaker: "Magnetic Resonance Biomarkers in Neurologic and neurodegenerative diseases". VII International Symposium on Medical Imaging Processing and Analysis". Bogotá, Colombia. December 2011. *[in spanish]*
2. Malpica González de Vega, N. Speaker. "Analysis of Medical Imaging by variational methods" VII International Symposium on Medical Imaging Processing and Analysis". Bogotá, Colombia. December 2011. *[in spanish]*
3. Malpica González de Vega, N. Speaker. "Quantification in Medical Imaging: from Research to Clinical Trials" 1st AML4Europe Conference on Medical Imaging. Madrid, October 2011. *[in spanish]*
4. Hernández Tamames J. A. Speaker: "Neuroimaging of Stress". Course: "Stress and Cognitive Impairment: An opportunity for prevention". Summer courses, Autonomous University of Madrid, July 2011. *[in spanish]*
5. Higher School of clinical MRI and Computerized Tomography. Inflammation and Neurodegeneration". "Bone marrow: Injuries". Valencia, April 14-16, 2011. "CNS: Inflammacion y Neurodegeneracion" "Medula: Lesiones". Valencia, April 14-16, 2011. *[in spanish]*
6. Hernández Tamames, J.A. Speaker. "Model and y Experience of the Medical Imaging Analysis and Biometrics Laboratory (LAIMBio) of the Rey Juan Carlos University, Madrid". Session: Neuroimaging Platform. Marqués de Valdecilla University Hospital. April 2011. *[in spanish]*



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7. Alvarez-Linera, J.A. Speaker. "Inflammation and Neurodegeneration". "Bone marrow: Injuries". Higher School of clinical MRI and Computerized Tomography. Valencia, April 14-16, 2011. *[in spanish]*
8. Alvarez-Linera, J.A. Speaker "Application of fMRI to the study of AD". Summer Courses, Technical University of Madrid. La Granja de S. Ildefonso (Segovia). July 7-9, 2011. *[in spanish]*
9. Alvarez-Linera, J.A. Chairman. "SESSION V: Neuroimaging Applied to the Diagnosis of Alzheimer's disease" Summer Courses, Technical University of Madrid. La Granja de S. Ildefonso (Segovia). July 7-9, 2011. *[in spanish]*
10. Alvarez-Linera, J.A. Speaker "recent Advances on Neuroimaging Techniques Applied to Epilepsy". Extraordinary Meeting of the Spanish Society of Neurology Epilepsy Group. Seville, October 7-8, 2011. *[in spanish]*
11. Alvarez-Linera, J.A. Speaker "Functional MRI and Tractography of the visual pathway" VII Updating Course on Neuro-ophthalmologic: Interactive discussion of clinical cases. Ramón y Cajal Hospital. Madrid, February 25-26, 2011. *[in spanish]*
12. Hernández Tamames, J.A. Speaker. "Quantitation of MR Neuroimaging Biomarkers in de Alzheimer's disease". Course: "Alzheimer's disease: Challenges from technology". Summer Courses, Technical University of Madrid. La Granja de S. Ildefonso (Segovia). July 7-9, 2011. *[in spanish]*
13. Malpica González de Vega, N. Speaker. "Neuroimaging, Techniques and Trends to approach stress" (Round table). Summer Course on "Stress and cognitive impairment: An

opportunity for prevention". Autonomous University of Madrid, July 2011. *[in spanish]*

Team

During this year, 38 people have composed the CIEN Foundation Department of Neuroimaging team, 4 of which are hired directly by the Foundation, while the rest of the staff is funded by the DIM Foundation. The personnel hired by the CIEN Foundation is the following:

- Eva Alfayate Sáez. Full time Technical coordinator of the Neuroimaging Area. Advanced Technician in Diagnostitic Imaging.
- Arantza Narciso Perianes. Part-time Administrative Assistant.
- Felipe García Fernández. Part-time Advanced Technician in Diagnostitic Imaging.
- Corina Ghinea. Part-time Administrative Assistant.

The remaining staff is financed by the DIM Foundation and carry out its technical and clinical activities within the Unit facilities in the CIEN Foundation but, in order to have greater availability, in some cases it may intervene in remote mode. Here are the functional profiles of the team members with part-time involvement:

- Dr. Juan Alvarez-Linera. Radiodiagnostics specialist. Director of the Department of Neuroimaging.
- Ana Ramos González, MD. Neuroimaging clinical coordinator.
- Dr. Marcos Ríos Lago. PhD in Psychology and Head of the Functional Imaging Area in the Department of Neuroimaging.
- Julián Benito, MD. Responsible for dissemination and publications of Neuroimaging.



Personnel of the Medical Imaging Analysis Area

- Juan A. Hernández Tamames, PhD. Director of the Laboratory of Medical Imaging Analysis.
- Norberto Malpica de la Vega, PhD. Associate Professor, Rey Juan Carlos University.
- Juan F. Garamendi Bragado. Computer Engineer by the Technical University of Madrid.
- Pablo García-Polo García. Telecommunications Engineer. Research fellow on various Neuroimaging projects.
- Gonzalo Pajares Giménez. Telecommunications Engineer involved in various Neuroimaging projects.
- Emanuele Schiavi, PhD in Applied Mathematics. Assistant Professor, Rey Juan Carlos University
- Javier González Zabaleta. "Avanza" Project. Technical University of Madrid.
- Ana Beatriz Solana Sánchez. Telecommunications Engineer. Research fellow in the Bioengineering and Telemedicine. Technical University of Madrid.
- Elena Molina Molina. Telecommunications Engineer by the Autonomous University of Madrid. "Avanza" Project. Technical University of Madrid.
- Susana Borromeo López, PhD. Industrial Engineer by the Technical University of Madrid. Assistant Professor, Department of Electronic Technology at Rey Juan Carlos University.
- Guillermo Luna García. Industrial Engineer by UNED. Electronic Equipment for Neuroscience.
- Daniel García Frank. Computer Engineer by the Autonomous University of Madrid. DEMCAM Longitudinal Project fellow.
- José Angel Pineda. Telecommunications Engineer. Attending the Biomedical Engineering Master at CTB.
- Laura Blázquez. Telecommunications Engineer. Rey Juan Carlos University fellow.

- Angel Torrado. Telecommunications Engineer. Rey Juan Carlos University fellow.

Personnel of the Functional Imaging Area

- Jose Antonio Periañez Morales. PhD in Psychology. Lecturer at Department of Basic Psychology II (Cognitive Processes). Complutense University, Madrid. UIPA researcher.
- Genny Lubrini. BSc in Psychology by the University of Padova (Italy). MSc in Cognitive Neuropsychology by the Complutense University of Madrid.
- Luis Carretie Aranguena. PhD in Psychology by the Autonomous University of Madrid. Professor of Psychobiology at Autonomous University, Madrid.
- Oscar Morales. Neuropsychologist. UNED Department of Basic Psychology. Unit of Brain Damage, "Hermanas Hospitalarias", Valladolid.

Personnel of the Imaging and Cognition Area

- Roberto Colom Marañón, PhD. Head of Imaging-Cognition in Neuroimaging. PhD in Psychology, Professor of Biological and Health Psychology at Autonomous University, Madrid.
- Miguel Burgaleta Díaz. PhD student. Autonomous University, Madrid. Psychology.
- Kenia Martínez Rodríguez. FPU PhD student, Ministry of Science and Innovation, Autonomous University, Madrid. Psychology.

Other collaborators

- Roberto García Alvarez. Physicist. Advanced Application Specialist in MRI of General Electric.
- Alvaro Sánchez Ferro, MD. Neurology specialist. Río Ortega research fellowship.



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- Javier Gálvez Cervantes. Advanced technician in Medical Imaging.

Unit advisors

- Dr. Belén Frades. Neuropsychologist specialized in cognitive impairment and dementias.
- Dr. Sebastián Cerdán. Advisor of Spectroscopy by MRI. Director of the Alberto Sols Institute.
- Beatriz Calvo Merino. PhD in Psychology, Complutense University of Madrid.

Department of Psychology, London City University. Institute of cognitive neuroscience (University College London). Join in 2011 as a consultant to the team.

- Dr. Francisco del Pozo Guerrero. Professor of Bioengineering, Director of the Center of Biomedical Technology (UPM). Join in 2011 as a consultant.
- José María Millán Juncos, MD. Radiodiagnostics specialist, Associate of Neuroradiology at the Radiology Department, 12 de Octubre University Hospital, Madrid.



Neuroimaging Team



3.2.4 Department of Laboratory

Results in 2011

The UIPA Department of Laboratory focuses on the study of molecular and cellular etiopathogenic mechanisms that determine the onset of Alzheimer's disease and other neurodegenerative diseases. The main focus, within the context of a multidisciplinary unit oriented to patients such as UIPA, materializes into the study "Biomarkers and susceptibility genes for Molecular Diagnosis of Early Alzheimer's disease and related diseases." For this purpose, the Department's research is closely connected with the activities of the Departments of Neuroimaging, Neuropathology and Multidisciplinary Support Unit and the tissue bank BT-CIEN. The Department also collaborates on various external projects focused on Alzheimer's disease and other neurodegenerative disorders.

In this context, this Department is responsible for developing a bio-bank of fluids and tissues along with the Department of Neuropathology (BT-CIEN) as well as a DNA Bank. For sampling this department works closely with the Alzheimer Center Queen Sophia Foundation (CAFRS), and has the basic equipment and capacities for processing, analysis and proper storage of these samples.

Currently, the department provides the following laboratory samples:

- Plasma, serum, saliva and DNA from CAFRS patients and healthy volunteers who participated in various research projects, such as the Vallecas and the VIBRA projects.
- Samples of cerebrospinal fluid from BT-CIEN brain donors.
- Postmortem skin samples from BT- CIEN donors, under the project " Peripheral molecular alterations in Alzheimer's disease and assessment of their utility as biomarkers by skin biopsy".

During 2011 a total of 475 biological samples have been collected, between blood and blood derivatives, cerebrospinal fluid (CSF) and saliva samples and buccal epithelium, which represents a 26% increase over 2010. This increase in the number of samples processed is due mainly to the addition of samples from individuals who participated in the Vallecas project and the donations made by the BT-CIEN.

Therefore, the laboratory has available:

- Samples of blood and derivatives of 198 patients from CAFRS (including 94 people subjected to multidisciplinary studies).
- Blood samples of 118 volunteers and derivatives from the Vallecas Project.
- Samples of cerebrospinal fluid (CSF) of 109 brain donors from BT-CIEN.
- Blood and derivatives of 50 volunteers from the 12 de Octubre Hospital (VIBRA project, Drs. Toledano and Carmona, CSIC).

The CIEN Foundation Laboratory Department has the adequate technology for the processes of collection, processing, storage and preservation of samples. Thus, for example, samples of blood and blood derivatives, such as lymphocytes, after completing a processing protocol are stored at -80° C to ensure its adequate preservation and be able to respond to requests for transfer of samples from different research groups. Furthermore, APOE genotype information, a risk factor for Alzheimer's disease, is available for samples of all patients who have given informed consent for genetic studies. Another element that differentiates the biological sample bank coordinated by the Laboratory Department is the availability of samples obtained from the same patient at different time points during disease progression. In the majority of



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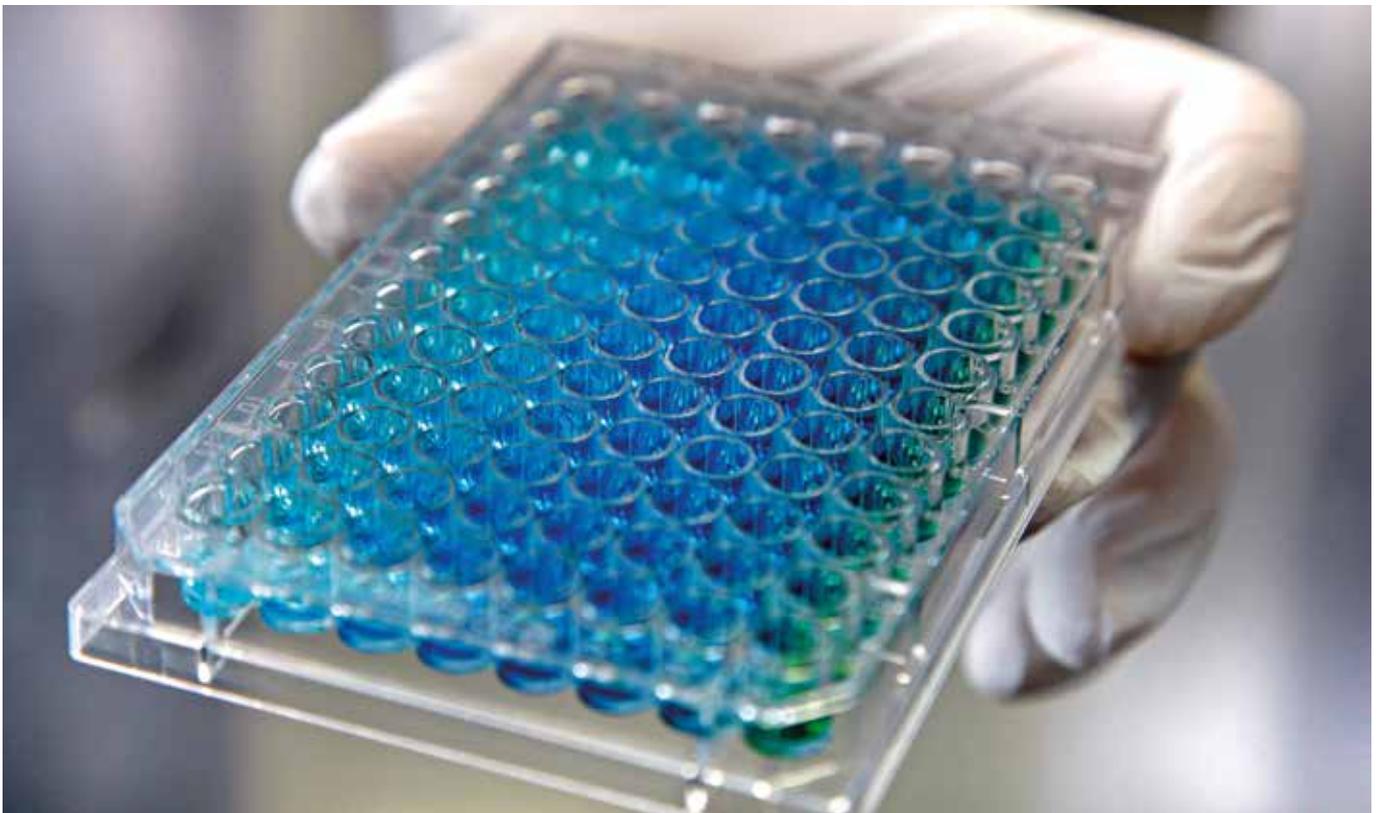
patients from CAFRS, 5-6 samples collected every six months coinciding with neuropsychological and neuroimaging evaluations carried out to inmates of the Centre are available. This comprehensive patient monitoring allows researchers to advance knowledge of Alzheimer's disease.

Transfer of samples

The Laboratory Department makes available to the scientific community the biological samples obtained from both patients as healthy individuals who have participated in a project at the CIEN Foundation. In addition, we also provide technical and logistical support to the scientific groups which so request it, such as Biocross, or the 12936A

Lundbeck study, among others. Thus in 2011 the following samples have been transferred:

- 25 DNA samples to IRB Barcelona (Dr. E. Soriano) and 20 to the Carlos III Institute of Health (Dr. M. Calero).
- 65 samples of whole blood and derivatives to the collaborative project VIBRA (Dr. A. Toledano).
- 35 skin biopsy samples from BT-CIEN postmortem donors. Project: "Peripheral molecular alterations in Alzheimer's disease and assessment of their utility as biomarkers by skin biopsy." UIPA-ISCIII, CNM-ISCIII (Dr. M. Calero).



- 53 samples of blood and derivatives, to the project "Development of a biomarker system for Alzheimer's disease" (Collaboration Agreement Biocross SL - CIEN Foundation).

Other achievements

During 2011, the Department of Laboratory has continued to promote the collaborative network with other institutions and research groups. In particular, this year we have established an international collaboration focused on the study of various neurodegenerative diseases. In this context, a consortium of research groups in Europe and around the world coordinated by Dr. Inga Zerr (Germany) has been formed to address:

- The harmonization of protocols needed for collecting patient information, processing of biological samples, and biomarker assays.
- The standardization of a more accurate diagnosis of dementia patients by biomarker analysis.

This project will begin during 2012 as a European coordinated project Neurodegenerative Disease Joint Programming - Transnational Call for Research Proposals 2011 ("Neurodegenerative Diseases - a call for European research projects for the optimization of biomarkers and harmonization of their use between their clinical centers").

Research projects and studies

During 2011 we have continued to carry out the three research projects previously launched relevant to Alzheimer's disease. In addition to those described below, and as stable structure within CIBERNED cooperative research, Dr. M. Calero collaborates in the UIPA-ISCIll research

team composed by the groups of Drs. Jesús de Pedro Cuesta (IP) and Pablo Martínez Martín.

Ongoing projects

- "Genes associated with tau protein phosphorylation and its influence on the risk for sporadic Alzheimer's disease." (Marqués de Valdecilla Foundation, Santander-UIPA-ISCIll, CNM-ISCIll) 2009-2012.
- "Activation of the calpain/GSK-3/CDK-5 pathway in Alzheimer's disease." Autonomous University of Madrid Foundation - UIPA-ISCIll, 2009-2012.
- "Identification of blood markers for the multiparametric diagnosis Alzheimer's disease." Biocross S.L.
- VIBRA project for the identification of blood biomarkers by vibrational spectroscopy (FTIR and Laser Raman). CSIC, Doce de Octubre Hospital. 2009-2012.

Future projects

The Laboratory Department is scheduled to begin collaborating on the following research projects:

- Participation on the CIBERNED Collaborative Project "SIGNAL" focused on the establishment of uniform protocols in different Spanish clinical centers for neuroimaging studies as well as sample collection and analysis of biomarkers in Alzheimer's disease.
- Within the context of a European coordinated project (Joint Programming on Neurodegenerative Diseases - 2011 Transnational Call for Research Proposals ("Neurodegenerative Diseases - a call for European research projects for the optimization of biomarkers and Harmonization of use Between Their clinical centers").



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Other research activities

In addition to those described above, the Department of Laboratory has undertaken the following actions:

- Patent Application. Title: Infrared analysis peripheral blood leukocytes obtained for diagnosis of Alzheimer's disease. Inventors (p.o. of signature): P. Carmona, A. Toledano, I., M. Calero, P Martinez Martin, F. Bermejo.
- Establishment of the association of PRNP gene as a risk factor in EA and description of their interaction with the APOE gene.
- Analysis of genetic variation in the tau phosphorylation pathway as potential risk factors for AD (Collaboration with Marqués de Valdecilla Hospital Foundation, Santander).
- Establishment of analytical methods of amyloid and amyloid-related proteins through biophysical techniques (FTIR and circular dichroism).



- Analysis of the potential diagnostic value of infrared spectroscopy in peripheral lymphocytes from AD patients.

Team

In 2011 the Department of Laboratory maintained its human resources structure and employment conditions of each of the three researchers who comprise this area: one researcher is hired directly by the CIEN Foundation, and two employees perform their duties as external collaborators of the department.

The team members are:

- Ana Belén Pastor, laboratory technician hired by the CIEN Foundation.
- Miguel Calero Lara, PhD, scientific collaborator at the CIEN Foundation and department coordinator.
- Olga Calero Rueda, CIEN Foundation scientific collaborator.

Training: courses and seminars

The following seminars and courses have been taught by the Department of Laboratory during 2011:

- "Early Biomarkers in Alzheimer's disease." M. Calero and J. Olazarán. Continuing Education Program of the Research Unit of the Alzheimer's Project F. CIEN - F. Queen Sophia. CIEN Foundation, Carlos III Health Institute, and Department of Family and Social Affairs CAM. Queen Sophia Foundation Alzheimer Centre. March 2011. *[in spanish]*
- "Human Transmissible Spongiform Encephalopathies." M. Calero. Master in

Virology, in H2 subject category. Human diseases. Madrid. March 2011. *[in spanish]*

- "The prionopathies as paradigm of conformational diseases". M. Calero. Master of Neurobiology of aging brain and nervous system diseases: Molecular, Cellular and Clinical Neurobiology. Autonomous University of Madrid. Madrid. March 2011. *[in spanish]*
- "Molecular pathology of prion diseases: a new paradigm for neurodegenerative diseases?". A. Rábano and M. Calero. Seminars, Department of Molecular, Cellular and Developmental Neurobiology, Cajal Institute, CSIC. September 2011. *[in spanish]*
- "Diagnosis: Diagnostic criteria and biomarkers." M. Valenti and M. Calero. II Training Course on multidisciplinary neurodegenerative dementias. Organized by the UIPA Research Unit (Alzheimer Project, CIEN Foundation-Queen Sophia Foundation) and UNED (Department of Basic I and Group CEEN), UIPA-Queen Sophia Foundation. September 2011. *[in spanish]*
- "Biochemical markers in blood in Alzheimer's disease." M. Calero. IX Annual Meeting of the Madrid Association of Neurology, Alcalá de Henares. Madrid. October 2011. *[in spanish]*

Besides those mentioned above, the Department of Laboratory also participates in the following activities:

- Evaluator of scientific project applications for the U.S. Alzheimer's Association. 2005-present.
- Evaluation of project applications for ANEP.
- Committee: Biotechnology Working Party. Parent entity: European Medicinal Evaluation Agency (EMA). London, UK. Topic: Advisor on issues related to Transmissible Spongiform Encephalopathies in the process of technical evaluation of human medicines. Date: March 2001-present.



3. SCIENTIFIC ACTIVITY OF THE UIPA

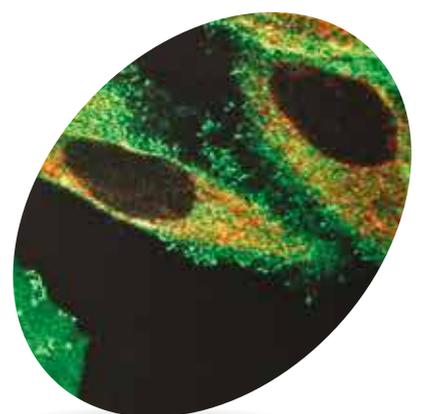
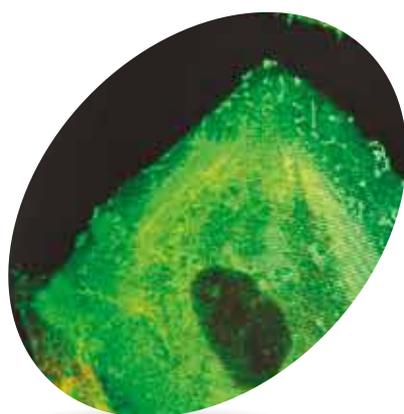
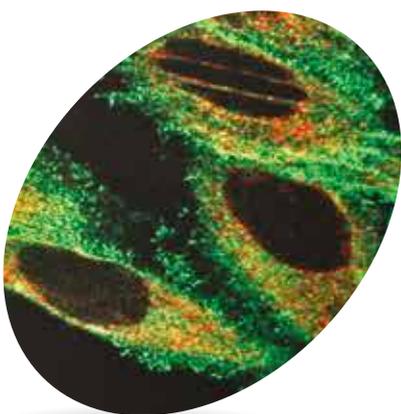


Laboratory Team



Science and social communication

- 4.1 Publications
- 4.2 Scientific meetings and conferences
- 4.3 Social communication and awards
- 4.4 Presence in Media
- 4.5 Presence on social networks





4. SCIENCE AND SOCIAL COMMUNICATION

One of the CIEN Foundation's objectives is advancing research on neurological diseases, for which actively supports research on these issues through the promotion of research groups, sectorial initiatives, seminars, etc. in the UIPA. The scientific production of the Foundation is backed up by the support offered by the Ministry of Science and Innovation, through the Carlos III Institute of Health. The Foundation also encourages collaboration with other institutions and research groups so that key insights into advances in neurodegenerative diseases are exchanged. Over 2011 CIEN Foundation-UIPA professionals have generated numerous and growing contributions to the scientific community, with important inputs from collaborations with specialized equipment, media publications, books, scientific articles, conference papers and seminars.

4.1 Publications

A total of 59 articles were published during 2011. Out of these, 40 were published in international journals, 4 in national publications and 15 were books or book chapters.

International Publications

- Aguera-Ortiz L. DSM-V/ICD 11: a new opportunity to clarify the diagnostic criteria for late onset psychotic disorders? *Aging Ment Health* 2011; 15(Suppl1): 4-5.
- Aguera-Ortiz L, Osorio-Suarez R. Links between neurotic-anxious disorders and the development of dementia. *NPG Neurologie-Psychiatrie-Geriatrie* 2011; 11: 146-150.
- Aguera Ortiz L, Ramos-Garcia I, Osorio-Suarez R, Sacks H, Palomo T. Prevalence and clinical correlates of restless legs syndrome among psychogeriatric patients. *Int J Geriatr Psychiatry* 2011; 26: 1252-1259.
- Antonini A, Martinez-Martin P, Chaudhuri RK, Merello M, Hauser R, Katzenschlager R, et al. Wearing-off scales in Parkinson's disease: Critique and recommendations. *Mov Disord* 2011; 26: 2169-2175.
- Benito-Leon J, Rivera-Navarro J, Guerrero AL, de Las Heras V, Balseiro J, Rodriguez E, et al. The CAREQOL-MS was a useful instrument to measure caregiver quality of life in multiple sclerosis. *J Clin Epidemiol* 2011; 64: 675-686.
- Calero O, Bullido MJ, Clarimon J, Frank-Garcia A, Martinez-Martin P, Lleo A, et al. Genetic crossinteraction between apoe and prnp in sporadic Alzheimer's and Creutzfeldt-Jakob diseases. *Plos One* 2011; 6: e22090.
- Chaudhuri KR, Odin P, Antonini A, Martinez-Martin P. Parkinson's disease: the non-motor issues. *Parkinsonism Relat Disord* 2011; 17: 717-723.
- De Pedro-Cuesta J, Mahillo-Fernandez I, Rabano A, Calero M, Cruz M, Siden A, et al. Nosocomial transmission of sporadic creutzfeldtjakob disease: results from a risk-based assessment of surgical interventions. *J Neurol Neurosurg Psychiatry*. 2011; 82: 204-212.
- Forjaz MJ, Prieto-Flores ME, Ayala A, Rodriguez-Blazquez C, Fernandez-Mayoralas G, Rojo-Perez F, et al. Measurement properties of the Community Wellbeing Index in older adults. *Qual Life Res* 2011; 20: 733-743.
- Leentjens AF, Dujardin K, Marsh I, Richard IH, Starkstein SE, Martinez-Martin P. Anxiety rating



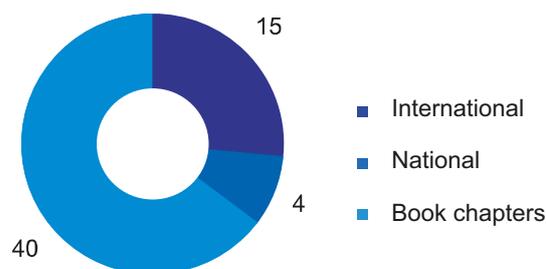
- scales in Parkinson's disease: a validation study of the Hamilton anxiety rating scale, the Beck anxiety inventory, and the Hospital anxiety and depression scale. *Mov Disord*. 2011; 26: 407-415.
- Leentjens AF, Dujardin K, Marsh L, Martinez-Martin P, Richard IH, Starkstein SE. Symptomatology and markers of anxiety disorders in Parkinson's disease: A cross-sectional study. *Mov Disord* 2011; 26: 484-492.
 - Leon Salas B, Logsdon RG, Olazaran J, Martinez-Martin P, The MSU-ADRU. Psychometric properties of the Spanish QoL-AD with institutionalized dementia patients and their family caregivers in Spain. *Aging Mental Health* 2011; 15: 775-783.
 - Leon-Salas B, Olazaran J, Muniz R, Gonzalez-Salvador MA, Martinez-Martin P. Caregivers' estimation of patients' quality of life (QoL) in Alzheimer's disease (AD): An approach using the ADRQL. *Arch Gerontol Geriatr* 2011; 53: 13- 18.
 - Martinez-Martin P. The importance of non-motor disturbances to quality of life in Parkinson's disease. *J Neurol Sci* 2011; 310: 12-16.
 - Martinez-Martin P, Falup-Pecurariu C, Rodriguez-Blazquez C, Serrano-Duenas M, Carod-Artal FJ, Rojo Abuin JM, et al. Dementia associated with Parkinson's Disease: Applying the Movement Disorder Society Task Force criteria. *Parkinsonism Rel Disord*. 2011; 17: 621-624.
 - Martinez-Martin P, Jeukens-Visser M, Lyons KE, Rodriguez-Blazquez C, Selai C, Siderowf A, et al. Health-related Quality of Life Scales in Parkinson's Disease: Critique and Recommendations. *Mov Disord* 2011; 26: 2371-2380.
 - Martinez-Martin P, Rodriguez-Blazquez C, Kurtis MM, Ray Chaudhuri K, on Behalf of the NMSS Validation Group. The Impact of Non Motor Symptoms on Health-Related Quality of Life of Patients with Parkinson's Disease. *Mov Disord* 2011; 26: 399-406.
 - Metta V, Logishetty K, Martinez-Martin P, Gage HM, Schartau PES, Kaluarachchi TK, Martin A, Odin P, Barone P, Stocchi F, Antonini A, Ray Chaudhuri K. The Possible Clinical Predictors of Fatigue in Parkinson's Disease: A Study of 135 Patients as Part of International Nonmotor Scale Validation Project. *Parkinson Dis* 2011: 125271.
 - Mulin E, Leone E, Dujardin K, Delliaux M, Leentjens A, Nobili F, Dessi B, Tibile O, Aguera-Ortiz L, Osorio RS, Yessavage J, Dachevsky D, Verhey FR, Jentoff AJ, Blanc O, Llorca PM, Robert PH. Diagnostic criteria for apathy in clinical practice. *Int J Geriatr Psychiatry* 2011; 26: 158-165.
 - Olazaran J, Torrero P, Cruz I, Aparicio E, Sanz A, Mula N, Marzana G, Cabezon D, Begue C. Mild cognitive impairment and dementia in primary care: the value of medical history. *Fam Pract* 2011; 28: 385-392 .
 - Osorio RS, Pirraglia E, Aguera-Ortiz LF, Doring EH, Sacks H, Ayappa I, et al. Greater risk of Alzheimer's disease in older adults with insomnia. *J Am Geriatr Soc* 2011; 59: 559-562.
 - Prieto-Flores ME, Fernandez-Mayoralas G, Forjaz MJ, Rojo-Perez F, Martinez-Martin P. Residential satisfaction, sense of belonging and loneliness among older adults living in the community and in care facilities. *Health Place* 2011; 17: 1183-1190.
 - Prieto-Flores ME, Forjaz MJ, Fernandez-Mayoralas G, Rojo-Perez F, Martinez-Martin P. Factors associated with loneliness of noninstitutionalized and institutionalized older adults. *J Aging Health* 2011; 23: 177-194.
 - Reichmann H, Cooper J, Rolfe K, Martinez-Martin P. Sleep duration and "on" time during different periods of the day and night in patients with advanced Parkinson's disease receiving adjunctive ropinirole prolonged release. *Parkinson Dis* 2011: 354760.
 - Rodriguez-Blazquez C, Frades-Payo B, Forjaz J, Ayala A, Martinez-Martin P, Fernandez-Mayoralas G, et al. Psychometric properties of the International Wellbeing Index in communitydwelling older adults. *Int Psychogeriatr*. 2011; 23:161-169.
 - Trenkwalder C, Kohlen R, Hogg B, Metta V, Sixel-Doring F, Frauscher B, et al. Parkinson's Disease Sleep Scale – Validation of the Revised Version



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- PDSS-2. *Mov Disord* 2011; 26: 644-652 _ Van Rooden SM, Colas F, Martinez-Martin P, Visser M, Verbaan D, Marinus J, et al. Clinical subtypes of Parkinson's disease. *Mov Disord* 2011; 26: 51-58.
- Vazquez-Higuera JL, Mateo I, Sanchez-Juan P, Rodriguez-Rodriguez E, Pozueta A, Calero M, Dobato JL, Frank-Garcia A, Valdivieso F, Berciano J, Bullido MJ, Combarros O. Genetic variation in the tau kinases pathway may modify the risk and age at onset of Alzheimer's disease. *J Alzheimers Dis.* 2011; 27: 291-297.
 - Vazquez-Higuera JL, Mateo I, Sanchez-Juan P, Rodriguez-Rodriguez E, Pozueta A, Calero M, Dobato JL, Frank-Garcia A, Valdivieso F, Berciano J, Bullido MJ, Combarros O. Genetic variation in the tau protein phosphatase-2A pathway is not associated with Alzheimer's disease risk. *BMC Res Notes* 2011; 4: 327.
 - Villarejo A, Bermejo-Pareja F, Trincado R, Olazaran J, Benito-Leon J, Rodriguez C, Medrano MJ, Boix R, Vega S. Memory impairment in a simple recall task increases mortality at 10 years in non-demented elderly. *Int J Geriatr Psychiatry* 2011; 26: 182-187.
 - Virues-Ortega J, de Pedro-Cuesta J, Seijo-Martinez M, Saz P, Sanchez-Sanchez F, Rojo-Perez F, et al. Prevalence of disability in a composite ≥ 75 -year-old population in Spain: A screening survey based on the International Classification of Functioning. *BMC Public Health* 2011; 11: 176.
 - Virues-Ortega J, de Pedro-Cuesta J, Vega S, Seijo-Martinez M, Saz P, Rodriguez F, et al. Prevalence and European comparison of dementia in a ≥ 75 -year-old composite population in Spain. *Acta Neurol Scand* 2011; 123: 316-324.
 - de Pedro-Cuesta J, Mahillo-Fernandez I, Rabano A, Calero M, Cruz M, Siden A, Laursen H, Falkenhorst G, Molbak K; EUROSURGYCJD Research Group. Nosocomial transmission of sporadic Creutzfeldt-Jakob disease: results from a risk-based assessment of surgical interventions. *J Neurol Neurosurg Psychiatry* 2011; 82: 204-12.
 - Hoglinger GU, Melhem NM, Dickson DW, Sleiman PM, Wang LS, Klei L, et al. Identification of common variants influencing risk of the tauopathy progressive supranuclear palsy. *Nat Genet* 2011; 43: 699-705.
 - Calero O, Bullido MJ, Clarimon J, Frank-Garcia A, Martinez-Martin P, Lleo A, Rey MJ, Rabano A, Blesa R, Gomez-Isla T, Valdivieso F, de Pedro-Cuesta J, Ferrer I, Calero M. Genetic cross-interaction between APOE and PRNP in sporadic Alzheimer's and Creutzfeldt-Jakob diseases. *PLoS One.* 2011; 6: e22090.
 - Vazquez-Higuera JL, Mateo I, Sanchez-Juan P, Rodriguez-Rodriguez E, Pozueta A, Calero M, et al. "Genetic Variation in the Tau Kinases Pathway May Modify the Risk and Age at Onset of Alzheimer's Disease". *J Alzheimer Dis* 2011; 27: 291-297.
 - Vazquez-Higuera JL, Mateo I, Sanchez-Juan P, Rodriguez-Rodriguez E, Pozueta A, Calero M, et al. Genetic variation in the tau protein phosphatase-2A pathway is not associated with Alzheimer's disease risk. *BMC Res Notes* 2011; 4 : 327.
 - Bruner E, Martin-Loeches M, Burgaleta M, & Colom R. Midsagittal brain shape correlation with intelligence and cognitive performance. *Intelligence* 2011; 39: 141-147.
 - Fernandez A, Rios-Lago M, Abasolo D, Hornero R, Alvarez-Linera J, Paul N, Maestu F, Ortiz T. "The correlation between white-matter microstructure and the complexity of spontaneous brain activity: a diffusion tensor imaging-MEG study. *Neuroimagen* 2011; 57: 1300-1307.

Distribution of publications



- Karama S, Colom R, Johnson W, Deary IJ, Haier RJ, Waber DP, Lepage C, Ganjavi H, Jung R, Evans AC, & The Brain Development Cooperative Group. Cortical thickness correlates of cognitive performance accounted for by the general factor of intelligence in health children aged 6 to 18. *Neuroimage* 2011; 55: 1443-1453.

National Publications

- Aguera-Ortiz LF, Cruz-Orduna I, Ramos-Garcia MI, Valenti-Soler M, Gil-Ruiz N, Osorio-Suarez RM, et al. Proceso de creación de la escala APADEM-NH para la medición de la apatía en pacientes con demencia institucionalizados. *Psicogeriatría* 2011; 3: 29-36.
- Delgado-Sanz MC, Prieto-Flores M-E, Forjaz MJ, Ayala A, Rojo-Perez F, Fernandez-Mayoralas G, et al. Influencia de los problemas crónicos de salud en las dimensiones del cuestionario ED-5D: estudio en personas mayores institucionalizadas y no institucionalizadas. *Rev Esp Salud Publica* 2011; 85: 555-568.
- Olazarán Rodríguez J, Álvarez Linera J. Pruebas complementarias en el estudio del paciente con demencia. *Jano*. 2011; 1767: 54-58.
- Rabano A. La donación de tejido cerebral para investigación: Madrid, 2011. *Parkinson Madrid* 2011; 1: No 37

Books and book chapters

- Martínez Martín, P. External reviewer of "Guía de práctica clínica sobre la atención integral a las personas con enfermedad de Alzheimer y otras demencias". Guías de práctica clínica en el SNS, Ministerio de Sanidad, Política Social e Igualdad. Ministerio de Ciencia e Innovación: 2011.
- Chaudhuri KR, Martínez-Martín P, Odin P, Antonini A, editors. "Non-motor symptoms in Parkinson's disease". London: Springer Healthcare; 2011.
- Fernández-Mayoralas G, Rojo-Pérez F, Frades-Payo B, Martínez-Martín P, Forjaz MJ. "La Calidad

de Vida de los mayores nominada y evaluada por ellos mismos a partir del instrumento SEIQoLDW". In: Rojo-Pérez F, Fernández-Mayoralas G, editors. "Calidad de vida y envejecimiento: la visión de los mayores sobre sus condiciones de vida". Fundación BBVA; 2011. p. 83-112.

- Forjaz MJ, Chandiramani C, Martínez-Martín P. "The burden of non-motor symptoms". In: Chaudhuri KR, Martínez-Martín P, Odin P, Antonini A, editors. *Non-motor symptoms in Parkinson's disease*. London: Springer Healthcare; 2011. p. 15-28.
- Kurtis M, Logishetty K, Martínez-Martín P. An indepth look at the NMSS. In: Chaudhuri KR, Martínez-Martín P, Odin P, Antonini A, editors. "Non-motor symptoms in Parkinson's disease". London: Springer Healthcare; 2011. p. 39-45.
- Lardies-Bosque R, Rojo-Pérez F, Fernández-Mayoralas G, Forjaz, MJ, Martínez-Martín P. "Cambios residenciales y Calidad de Vida de los adultos-mayores en España". In: Pujadas Rubies I, Bayona Carrasco J, García Coll A, Gil Alonso F, López Villanueva C, Sánchez Aguilera D, Vidal Bendito T, editores. "Población y espacios urbanos". Barcelona: Departament de Geografia Humana de la Universitat de Barcelona y Grupo de población de la Asociación de Geógrafos Españoles; 2011. p. 143-162.
- Martínez-Martín P. "Existen factores protectores frente a la enfermedad de Alzheimer?" In: "Inflamación, grasa dietética y enfermedades crónicas, Alzheimer, insulinoresistencia, anemias y ciencias 'ómicas'". Series: "Interrogantes y educación sanitaria para la Oficina de Farmacia". Madrid: International Marketing & Communication; 2011. p. 223-238.
- Portegies P, Solod L, Cinque P, Chaudhuri A, Begovac J, Everall I, Weber T, Bojar M, Martínez-Martín P, Kennedy PGE. "Neurological Complications of HIV infection". In: Hughes R, Brainin M, Gilhus NE, editors. *European Handbook of Neurological Management, Vol 1, 2nd Edition*. Chichester, UK: Wiley-Blackwell; 2011. p. 373-381.



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- Sanchez M, Aguera Ortiz L, Martin Carrasco M, Azpiazu P, Olivera J, Mateos R. "Guía esencial de Psicogeriatría". Madrid: Editorial Médica Panamericana; 2011.
- Rodriguez-Blazquez C, Tanya Mitra M, Martinez-Martin P. Assessing "NMS: an overview of scales and questionnaires". In: Chaudhuri KR, Martinez-Martin P, Odin P, Antonini A, editors. "Non-motor symptoms in Parkinson's disease". London: Springer Healthcare; 2011. p. 28-37.
- Lorea Conde I, Llanero Luque M, and Rios Lago M (in press) "Aportaciones de las técnicas de Neuroimagen a la comprensión y tratamiento de las adicciones"
- Rios M, Adrover D, y Rodríguez JM. "Atención". In P. Enríquez. "Neurociencia Cognitiva: Una introducción". Material Didáctico UNED. Código 0147531MT01B01. 2011.
- Rios M y Norena D. Funciones Ejecutivas. In P Enríquez. "Neurociencia Cognitiva: Una introducción". Material Didáctico UNED. Código 0147531MT01B01. 2011
- Roig T, Rios-Lago M y Paul N. "Atención y concentración". In Bruna, O., Roig, T. Puyuelo, M. Junque, C. and Ruano. A. "Rehabilitación Neuropsicológica". Elsevier. Barcelona. 2011.
- Tirapu J, Garcia A, Rios-Lago M y Pelegrin Valero C. Funciones Ejecutivas. En Bruna O, Roig T, Puyuelo M, Junque C and Ruano A. "Rehabilitación Neuropsicológica". Elsevier. Barcelona. 2011.



4.2 Scientific meetings and conferences

Participation in national and international conferences, exchange of medical knowledge and advances on neurodegenerative diseases with other research groups, is critical to develop research projects. For this reason, the CIEN Foundation-UIPA professionals annually participate in multiple conferences, committees and collaborative networks that allow them to stay at the forefront of the research. Scientists at the CIEN Foundation-UIPA have actively participated in various national (22 papers and communications) and international (76 papers or communications) conferences and symposia. They also attended 17 scientific meetings and were involved in a number of scientific committees, expert panels, etc.

National Conferences and Symposia

- Rábano A. Amazings Bilbao 2011 "El cerebro de Einstein". National Congress of Scientific Dissemination. Bilbao, October 2011.
- Martínez Martín P. Session Chair: "Pharmacological treatment perspectives in Alzheimer disease". Course on "Alzheimer disease: Challenges from biomedical technology". Universidad Politécnica de Madrid Summer Courses, La Granja de San Ildefonso, July, 2011.
- Olazarán Rodríguez J. Session Chair: "non-pharmacological intervención no farmacológica in Alzheimer disease". Course on "Alzheimer disease: Challenges from biomedical technology". Universidad Politécnica de Madrid Summer Courses, La Granja de San Ildefonso, July, 2011
- Olazarán Rodríguez J. Chair: " Update on the Treatment of Dementia Day" (4th edition). Laín Entralgo Agency Training Program, Consejería de Sanidad de la Community de Madrid, Madrid, October, 2011.
- Martínez-Martín P y León-Salas B. Spanish Group of Research on Quality of Life and Aging. "Aging Research in Spain and Europe" Congress. Madrid, España, March, 2011.
- León Salas B, Olazarán Rodríguez J, Dobato Ayuso JL, Valentí Soler M, Martínez Martín P, UMA-UIPA "Aging Research in Spain and Europe" Congress. "Factores relacionados con la calidad de vida percibida en personas con demencia: comparación de la percepción del paciente y del cuidador. Madrid, España, March, 2011.
- Martínez-Martín P. V Canary Seminar on Parkinson disease. "Epidemiology of non-motor symptoms and its implications in quality of life". Mogán, Gran Canaria, February 2011.
- Rábano A, Cuadros R, Santa-María I. Ávila J. XIV National Congress of the Spanish Society of Neurosciences. "The distribution pattern of argyrophilic grain pathology is compatible with the spread of pathological tau isoforms from cell to cell". Salamanca. November, 2011.
- Rábano A. II National Congress on Prions. "Pathology of the hippocampus in human prion diseases". Madrid. December 2011.
- Álvarez-Linera J. "Diagnostic and prognosis concepts". Soncam Congress, Hospital Universitario Quirón Madrid. Madrid. October, 2011.
- Álvarez-Linera J. "Brain plasticity and the game Professor Layton and Pandora's Box". Iberoamerican Association for the Investigation of Individual Differences. I AIDI Meeting, Universitat Jaume I of Castellón. Award to the Best Oral Communication. Castellón. September, 2011.
- Álvarez-Linera J. "Advances in functional neuroimaging in epilepsy. Arterial Spin Labelling (ASL)". XXXII Annual Niño Jesús University Hospital Symposium. Advances in Epilepsy: " Identifying Pediatric Surgical Candidates ". Madrid. March, 2011
- Cicuendez M, Amosa M, Ramos A, Ríos-Lago M, Viejo Sobera R and Lagares A. Ponencia: "Value of the diffusion tensor as diagnostic and prognostic factor in diffuse axonal injury". XVI Congress of the Spanish Society of Neurosurgery (SENEC 2011).Madrid. May, 2011.
- Fernández Lozano M^a, Perriáñez JA, Extremera N, Viejo Sobera R, Lubrini G, Ríos Lago M, Puente Ferreras A, Álvarez Linera J. Oral Communication: "Construct validity of the Stroop test: Influence

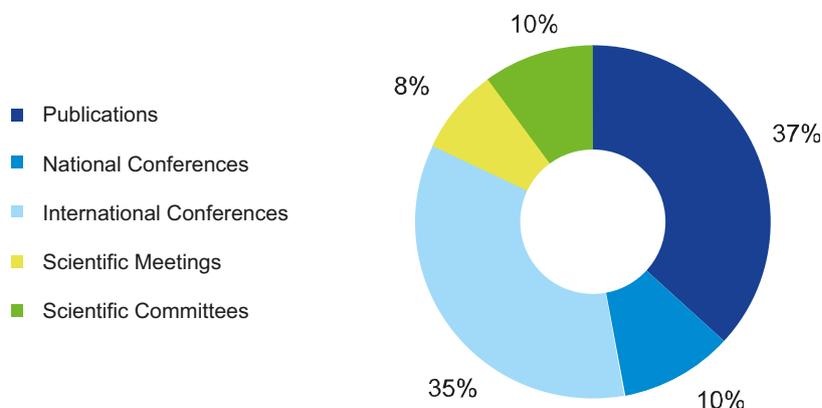


4. SCIENCE AND SOCIAL COMMUNICATION

of processing speed, verbal skills perceptual interference, motor inhibition, cognitive flexibility and working memory". IV Congress of the Federation of Spanish Associations of Neuropsychology (FANPSE). Valencia. October, 2011.

- Martínez N, Viejo Sobera R, Ríos Lago M, Periañez Morales JA, Sánchez Azanza VA, González B, Blázquez JL, De Noreña D, Pascual M. Poster: "Predictors of performance on neuropsychological tasks in head injuries". IV Congress of the Federation of Spanish Associations of Neuropsychology (FANPSE) Valencia. October, 2011.
- Morales O, Ríos-Lago M, Álvarez-Linera J. Poster: "Evaluation of memory using functional magnetic resonance imaging in young subjects, normal aging and mild cognitive impairment: comparison of single case studies and a reference group". IV Congress of the Federation of Spanish Associations of Neuropsychology (FANPSE). Valencia. October, 2011.
- Ríos-Lago M. Invited talk: "Models of attention in brain damage". II Brain Injury Workshop Sevilla. October, 2011 .
- Ríos Lago M. Invited talk: "Implications of cognitive deficits in everyday life and patterns of intervention". XXXVIII National Conference of Socidrogalcohol, Madrid. April, 2011.
- Ríos Lago M, Álvarez Linera J. Conferencia Invitada: "Applications of functional MRI and tractography in Neuroophthalmology". National Congress on Neuro-ophthalmology. Madrid. February, 2011.
- Ríos-Lago M, Periañez JA, Pajares G, García Polo P, Hernández Tamames JA, Frades B, Álvarez-Linera J, Sáenz Lafourcade C, Lubrini G, Resler G, Frank A on behalf of the DEMCAM group. "Microstructure of the cerebral white matter in aging, mild cognitive impairment and mild Alzheimer's disease: study of attentional shift and speed of information processing by TBSS". IV Congress of the Federation of Spanish Associations of Neuropsychology (FANPSE). Valencia. October, 2011.
- Sánchez Azanza VA, Extremera N, Periañez JA, Ríos-Lago M, Frades B, Álvarez-Linera J, Sáenz Lafourcade C, Lázaro V, Lubrini G and Frank A, on behalf of the DEMCAM group. "Set change and speed of information processing in young and elderly healthy subjects and with mild cognitive impairment and Alzheimer's disease". IV Congress of the Federation of Spanish Associations of Neuropsychology (FANPSE). Valencia. October 2011.
- Viejo-Sobera R, Lubrini G, Periañez JA, Ríos-Lago M, Álvarez-Linera J. "Validación de una batería de tests de velocidad de procesamiento de la

Dissemination activities of the CIEN Foundation-UIPA professionals



información en población española". IV Congress of the Federation of Spanish Associations of Neuropsychology (FANPSE) Valencia. October, 2011.

International Conferences and Symposia

- Martínez Martín P. Chair: Non-motor features of Parkinson's disease cognition. 15th Congress of the Movement Disorder Society, Toronto, Canada, June 2011.
- Martínez Martín P. Chair: Guided poster tour 4 – Rating scales and assessment tools. 15th Congress of the Movement Disorder Society, Toronto, Canada, June 2011.
- Martínez Martín P. Chair: Novel Aspects of Clinical Research in Alzheimer's Disease. Present and Future of Alzheimer's Research. Alzheimer International 2011, Madrid, September, 2011.
- Martínez Martín P. Chair: Aspectos relacionados con Calidad de Vida y Enfermedad de Alzheimer en España y América. Present and Future of Alzheimer's Research. Alzheimer International 2011, Madrid, September, 2011.
- Calero O, Bullido MJ, Clarimón J, Frank-García A, Martínez-Martín P, Lleó A, et al. Present and Future of Alzheimer's Research, Alzheimer International 2011. Genetic cross-interaction between APOE and PRNP in sporadic Alzheimer's and Creutzfeldt-Jakob diseases. Madrid, September, 2011.
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- Fernández-Mayoralas G, Rojo-Pérez F, Lardiés-Bosque R, Ahmed-Mohamed K, Forjaz MJ, Martínez-Martín P, et al. Quality of life, wellbeing and leisure activities among older adults in Spain. European Sociological Association 10th Conference. Geneva, Switzerland, September, 2011.
- Fernández-Mayoralas G, Rojo-Perez F, Lardies-Bosque R, Forjaz MJ, Martínez-Martin P, Rojo-Abuin JM. Uso del tiempo libre y actividades de ocio entre los adultos mayores en España en el contexto de su calidad de vida. 7th Congress of the EUGMS/ 53th Congress of the SEGG. Málaga, September, 2011.
- Froufe M, Cruz I, Sierra B, Olazarán J. Deterioro de los procesos atencionales en la enfermedad de Alzheimer. XXXIII Congreso Interamericano de Psicología. Medellín, Colombia, June, 2011.



4. SCIENCE AND SOCIAL COMMUNICATION

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- León-Salas B, Olazarán J, Dobato JL, Valentí M, Martínez-Martín P, UMA-UIPA. Psychometric attributes of the QOL-AD in institucionalized patients with advanced dementia. 10th International Conference on Alzheimer's and Parkinson's diseases, AD/PD 2011. Barcelona, March 2011.
- Martínez-Martín P. Determinants of quality of life in Parkinson's Disease. 11th Scandinavian Meeting ScanModis. Stockholm, Sweden, March, 2011.
- Martínez-Martín P. Therapy adherence in Parkinson's Disease. 10th International Forum on Parkinson's Disease. Viena, Austria, April 2011.
- Martínez-Martín P. 3er. Los factores de protección: Actividad física. Encuentro Latinoamericano World Federation of Neurology-Research Group on Dementia. Buenos Aires, Argentina, May, 2011.
- Martínez-Martín P. Non-motor symptoms in Parkinson's disease. Symposium "A 21st century review of complex Parkinson's". Cambridge, United Kingdom, May, 2011.
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- Martínez-Martín P. Quality of life in patients with AD and their caregivers. Present and Future of Alzheimer's Research. Alzheimer Internacional 2011. Madrid, September, 2011.
- Martínez-Martín P. Cholesterol and other risk factors of Alzheimer's Disease: epidemiological studies. I Symposium Neuron: Cholesterol and Neurodegenerative diseases. Granada, September, 2011.
- Martínez-Martín P. What really influences quality of life in PD?. Malattia di Parkinson: Dalla terapia all'assistenza. Bari, Italia, December, 2011.
- Martínez-Martín P, Hernández B, The Q-10 Study Group. Performance of the Q10 Questionnaire for diagnosis of wearing-off phenomena in Parkinson's disease. 10th International Conference on Alzheimer's and Parkinson's diseases, AD/PD 2011. Barcelona, March 2011.
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 - Olazarán J, Hernández-Tamames JA, Dobato JL, García-Polo P, Molina E, Álvarez-Linera J, et al. Clinical and anatomical determinants of gait dysfunction in Alzheimer's disease. Present and Future of Alzheimer's Research, Alzheimer International 2011. Madrid, September, 2011.
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 - Reddy P, Martínez-Martín P, Antonini A, Odin P, Martín A, Calandrella D, et al. Comparison of non-motor effects of subcutaneous apomorphine infusion and intrajejunal levodopa infusion in advanced Parkinson's disease. Congress of the European Federation of Neurological Societies. Budapest, Hungary, September 2011.
 - Reddy P, Martínez-Martin P, Rizos A, Martín A, Faye GC, Forgacs I, et al. Intrajejunal levodopa infusion in the UK: comparative review of motor and non-motor effects in treated versus untreated advanced Parkinson's patients. XIX World Congress on Parkinson's disease and related disorders. Shanghai, China, December, 2011.
 - Rizos A, Klemencic Kozul T, Martín A, Koch I, Tluk S, Kessel B, et al. Characterising non motor patterns of early morning off periods in Parkinson's disease. XIX World Congress on Parkinson's disease and related disorders. Shanghai, China, December, 2011.
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 - Rizos A, Durnen G, Martín A, Kessel B, Henriksen T, Antonini A, et al. Comparative analysis of use of long acting dopamine agonists in current clinical practice: Ongoing survey across Europe. Congress of the European Federation of Neurological Societies. Budapest, Hungary, September 2011.
 - Rizos A, Kozul TK, Martín A, Kessel B, Naidu Y, Reddy P, et al. Characterising non motor patterns of early morning off periods in Parkinson's disease: An international study. 15th Congress of the Movement Disorder Society. Toronto, Canada, June 2011.
 - Rodríguez-Blázquez C, Ayala A, Forjaz MJ, Fernández-Mayoralas G, Rojo-Pérez F, Martín-García S, et al. Health, functional status and quality of life of institutionalized older people with dementia. Present and Future of Alzheimer's Research, Alzheimer International 2011. Madrid, September, 2011.
 - Rojo-Pérez F, Fernández-Mayoralas G, Forjaz MJ, Martínez-Martin P, on behalf of the Spanish Research Group on QoL and Ageing. Determinants of health-functioning conditions and the residential environment on the quality of later life in Spain. European Sociological Association 10th Conference. Geneva, Switzerland, September, 2011.
 - Ruyra J, Lahoz R, Martínez-Martín P, Ricart J, Hernández B. Validity of the Q10 questionnaire for diagnosis of wearing-off phenomena in Parkinson's disease: Q10 study. 14th Annual European Congress ISPOR. Madrid, November, 2011.



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- Valentí Soler M, Martínez-Martín P, Casanova Peño I, Martín Rico F, Cañas Plaza JM, García Bailador S, et al. Rotherapy in dementia. 10th International Conference on Alzheimer's and Parkinson's diseases, AD/PD 2011. Barcelona, March 2011.
- Basbus M, Rábano A. Morphological patterns in hippocampal sclerosis. Global Alzheimer's research Summit 2011 "Present and Future of Alzheimer's Research". Madrid. September, 2011.
- Rábano A, Santa-María I, Guerrero C, Cuadros R, Rebolledo AB, Calero O, Calero M, Kun A, Ávila J. Towards a phenotypic characterization of argyrophylic grain disease. AD/PD 2011. Barcelona. March, 2011.
- Rábano A. "Neuropatología de los síndromes neurocognitivos de la infancia". I Congreso Internacional de Neuropsicología Infantil. Madrid. October, 2011.
- Calero O, Bullido MJ, Clarimón J, Frank-García A, Martínez-Martín P, Lleó A, et al. "Cross-Interaction between APOE and PRNP in Sporadic Alzheimer's and Creutzfeldt-Jakob Diseases". Global Alzheimer's Summit: "Present and Future of Alzheimer's Research". Genetic. Madrid, September, 2011.
- Carmona P, Toledano A, Álvarez I, Ruiz S, Calero M, Martínez-Martín P, Bermejo F. "Infrared Spectroscopic Analysis of Blood as a Diagnostic Tool in Alzheimer Disease". The 10th International Conference on Alzheimer's and Parkinson's diseases. Barcelona, March 2011.
- Kun A, Calero O, Rebolledo AB, Matesanz C, González-Camacho F, Rábano A, Calero M. "Epidermal Molecular Changes in Alzheimer's Disease Patients". The 10th International Conference on Alzheimer's and Parkinson's diseases. Barcelona, March 2011.
- Rábano A, Santa-María I, Guerrero C, Cuadros R, Rebolledo AB, Calero O, Calero M, Kun A, Ávila J. "Towards a Phenotypic characterization of Argyrophilic Grain Disease". The 10th International Conference on Alzheimer's and Parkinson's diseases. Barcelona, March 2011.
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- Álvarez-Linera J. MRI markers in Alzheimer's Disease. Annual Meeting of European Association of Nuclear Medicine. Birmingham, UK. October, 2011.
- Álvarez-Linera J. "Nuevos aspectos en la investigación clínica de la enfermedad de Alzheimer". Congreso Internacional Global Alzheimer's Reserch Summit, Madrid, September, 2011.
- Álvarez-Linera J. "Cómo evitar malas interpretaciones en estudios de neuroimagen estructural y funcional", "Utilidades de la Tractografía, tensor de difusión y FRM". III Simposium Internacional de Epilepsia y Cirugía de la Epilepsia: Errores en Epilepsia y Cirugía de la Epilepsia. IENSA, Sevilla, February, 2011.
- Álvarez-Linera J. "New MRI markers in Alzheimer's Disease", European Radiology Congress. Viena, Austria. March, 2011.
- Cobos RG, Hernández-Tamames JA, Resler-Plat G, et al. "Hippocampal and posterior cinguli volumetric study in mild cognitive impairment patients" (Demcam Pilot Study). 21st Meeting of the European-Neurological-Society. JOURNAL OF NEUROLOGY. Volume: 258. Pages: 78-78. Supplement: Suppl. 1. Published. Lisboa, Portugal. May, 2011.
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- Colom R, Burgaleta M, Martínez K, Román FJ, Álvarez-Linera J, Quiroga M^a, Chun Shih P, Escorial S, Privado J. Ponencia: "Consistency of intelligence in the brain". International Society for Individual Differences (ISSID). London, UK. June, 2011.
- Garamendi JF, Jiménez-Fernández S, González-Zabaleta J, Mato V, Pineda-Pardo JA, Hernández-Tamames JA, Díaz E, García Saiz T, Rincón Zamorano M, Olmos S, Insausti Serrano R, González Moreno C, Álvarez-Linera J, Díez-Peña A, Insausti M and Del Pozo Guerrero F. "Integration of medical imaging analysis tools based on MRI for the study and diagnosis of Alzheimer's disease". 10th International Conference on Alzheimer's & Parkinson's Diseases. Barcelona, March, 2011.
- Gavilán B. y Ríos-Lago M. Conferencia Invitada: "Modelos de atención en daño cerebral". I Congreso Internacional de Neuropsicología Infantil. Madrid, October, 2011.
- Hernández Tamames JA. "Integración y cuantificación de imágenes médicas". Workshop Internacional en Imagen Médica. La Coruña, March, 2011.
- Melero H, Peña-Melián A, Ríos-Lago M y Álvarez-Linera J. Comunicación Oral: "Achromatic synesthesia: a combined neurophenomenological and neuroimaging approach". Publicación: Libro de resúmenes. The Ninth Annual National Conference of the American Synesthesia Association. San Diego - California, EE.UU. October 2011.
- Melero H, Peña Melian A, Ríos Lago M, y Álvarez Linera J. "Emotion as the key: anatomic and functional aspects of achromatic synesthesia". UK Synaesthesia Association Annual Conference. London, UK. March, 2011.
- Molina E, Solana A.B, Hernández Tamames JA, Borromeo S, Luna G, Álvarez Linera J. "Assessment of olfactory reactivity of different brain areas with fMRI". 7th Annual Meeting of the Organization for Human Brain Mapping. Québec, Canada. June, 2011.
- Morales O, Ríos-Lago M, Extremera N, Viejo R, Álvarez-Linera J. Poster: "Assessment of memory using fMRI in young adults, healthy aging, and mild cognitive impairment: comparison of single case studies with a reference group". Global Alzheimers' Research Summit. Madrid, September, 2011.
- Ríos-Lago M, Periañez JA, Hernández Tamames JA, Frades B, Álvarez Linera J, Saenz Lafourcade C, Lubrini G, Resler G, Frank A, On Behalf the DEMCAM Group. Poster: "White matter microstructure associated with set-shifting and speed of information processing in healthy ageing, mild cognitive impairment and alzheimer's disease". Global Alzheimer's Research Summit. Madrid, September, 2011.
- Román FJ, Escorial S, Abad FJ, Burgaleta M, Martínez K, Álvarez-Linera J, Quiroga M^a, Privado J, Chun Shih P, and Colom R. Ponencia: "The relevance of scoring for finding intelligence in the Brain". The twelfth Annual Conference of the ISIR. Chipre. December, 2011.
- Sánchez-Azanza V, Extremera N, Periañez JA, Ríos-Lago M, Frades B, Álvarez-Linera J, Sáenz Lafourcade C, Vincent C, Frank A on behalf the DEMCAM Group. Poster: "Set-shifting and speed of information processing in young adults, healthy aging, mild cognitive impairment and alzheimer's disease". Alzheimers' Research Summit. Madrid, September, 2011.
- Seco de Herrera AG, Garamendi JF, Pajares G, Schiavi E, Hernández-Tamames JA. "Inverse scaling denoising in detection of injured white matter in fractional anisotropy maps". In The 10th International Conference on Alzheimer's & Parkinson's Diseases. Barcelona, March, 2011.
- Solana AB, Hernández-Tamames JA, GarcíaÁlvarez R, Maestu C, Álvarez-Linera J, Del Pozo F. "Simultaneous EEG-fMRI synchronisation using EPI and Spiral sequences". Actas del 17th, pág. 86. 2011. Annual Meeting of the Organization on Human Brain Mapping. Québec, Canada. June, 2011.
- Solana A.B., Hernández-Tamames J.A., GarcíaÁlvarez R., Maestu C., Álvarez-Linera J. del Pozo, F. "Simultaneous EEG-fMRI synchronization using EPI and Spiral sequences British Chapter ISMRM". Post-Graduate Magnetic Resonance Symposium. Cambridge, UK March, 2011.



4. SCIENCE AND SOCIAL COMMUNICATION

- Viejo-Sobera R, Lubrini G, Periañez JA, Ríos-Lago M, Álvarez-Linera J. Poster: "Validation of a processing speed test battery across the lifespan in Spanish population". Global Alzheimers' Research Summit. Madrid, September, 2011.

National Scientific Meetings

- Rábano A. LXVIII Annual Meeting of the Spanish Society of Neurology. Dementias dinner seminar. Barcelona, November, 2011.
- Rábano A. LXVIII Annual Meeting of the Spanish Society of Neurology. Movement disorders dinner seminar. Barcelona. November, 2011.
- Rábano A. "Taupatía con inclusiones gliales globulares". Spanish Neuropathology Club Annual Meeting. Barcelona, November, 2011.
- Álvarez-Linera J. "Marcadores de imagen en Enfermedad de Alzheimer". XL SENR Annual Meeting, Bilbao. October, 2011.
- Álvarez-Linera J. "Hemodinámica y permeabilidad tumoral. PWI, ASL, DCE. Cuál, cuándo y porqué utilizarlas". XL SENR Annual Meeting, Bilbao. October, 2011.
- Martínez-Martín P. "¿Hacia dónde va la investigación en la enfermedad de Alzheimer?". XVIII Annual Meeting of the Spanish Society of Psychogeriatrics. Madrid, Octubre, 2011.
- Martínez-Martín P. Wearing-off motor y no motor: Detección y prevalencia. LXIII Annual Meeting of the Spanish Society of Neurology. Barcelona, November, 2011.
- Martínez-Martín P, Ricart J, Ruyra J, Hernández B, on behalf of Q10 Study Group. "Validez del cuestionario Q10 para el diagnóstico de wearing-off en pacientes con enfermedad de Parkinson. Estudio Q10". LXIII Annual Meeting of the Spanish Society of Neurology. Barcelona, November, 2011.
- Pino L, Forjaz MJ, Prieto-Flores ME, Ayala A, Rojo-Pérez F, Fernández-Mayoralas G, et al. "Influencia de características sociodemográficas y de salud en la calidad de vida en la jubilación". XXIX Scientific Meeting of the Spanish Society of Epidemiology. Madrid, October, 2011.
- Valenti M, León B, Cañas Plaza JM, Agüera L, Ramos I, Olazarán Rodríguez J, Martínez-Martín P, et al. "Robotherapy in moderate/severe dementia: Pilot study". V CIBERNED Scientific Forum. San Sebastián, December, 2011.
- Valentí Soler M, Casanova Peño L, Martínez Martín P, Martín Rico F, Cañas Plaza JM, Saiz Bailador S, et al. "Roboterapia en demencia". LXIII Annual Meeting of the Spanish Society of Neurology. Barcelona, November, 2011.
- Vázquez Higuera JL, Mato Fernández JL, Sánchez Juan P, Rodríguez Rodríguez E, Pozueta Cantudo A, Calero Lara M, et al. "Variabilidad genética en la vía metabólica de la fosforilación de tau como factor de riesgo de I enfermedad de Alzheimer". LXIII Annual Meeting of the Spanish Society of Neurology. Barcelona, November, 2011.
- Ayala A, Forjaz MJ, León-Salas B, Martínez-Martín P y Grupo UMA-UIPA. "Análisis Rasch de la escala de calidad de vida QOL-AD de personas institucionalizadas con demencia". XXIX Scientific Meeting of the Spanish Society of Epidemiology. Madrid, October, 2011.
- Benito León J, Rivera Navarro J, Guerrero Peral AL, de las Heras Revilla V, Balseiro Gómez JJ, Rodríguez García E, et al. "Evaluar la calidad psicométrica de un instrumento diseñado para medir la calidad de vida de los cuidadores de pacientes con Esclerosis Múltiple". LXIII Annual Meeting of the Spanish Society of Neurology. Barcelona, November, 2011.
- de Pedro-Cuesta J, Alcalde-Cabero E, Almazán-Isla J, Avellanal F, Calero M, Mahillo I, et al. "Epidemiología de las neurodegeneraciones y Salud Pública". XXIX Scientific Meeting of the Spanish Society of Epidemiology. Madrid, October, 2011.
- Dobato Ayuso JL, Hernández Tamames JA, León Salas B, Valle de Juan MS, Rábano Gutiérrez del Arroyo A, Álvarez Linera JA. "Atrofia cerebral selectiva en función de etiología (enfermedad de Alzheimer vs. Demencia como síndrome) en demencia moderada-avanzada". LXIII Annual Meeting of the Spanish Society of Neurology. Barcelona, November, 2011.



- Giraldez-García C, Forjaz MJ, Prieto-Flores ME, Rojo-Perez F, Fernández-Mayoralas G, Martínez-Martin P. "Bienestar comunitario y salud en adultos mayores". XXIX Scientific Meeting of the Spanish Society of Epidemiology. Madrid, October, 2011.

Scientific Committees and other positions

- Agüera Ortiz L. Member of the Spanish Society of Psychogeriatrics Management Board, since October 2007.
- Rábano A. Member of the Scientific Committee of the II National Congress on Prions. Madrid, December 2011.
- Martínez Martín P. Member of the Congress Scientific Program Committee of the Movement Disorder Society (2010-2014).
- Martínez Martín P. Founder Member and Principal Investigator of the international collaborations Non-Motor Symptoms Group and EUROPAR.
- Martínez Martín P. Coordinator of the Movement Disorder Society Task Force for review of quality of life scale in Parkinson's disease (2010-2011).
- Martínez Martín P. Member of the Steering Committee of the Movement Disorder Society Task Force for rating scales in Parkinson's disease (desde 2011).
- León-Salas B. "The role of technology in achieving extended life years". European Research Area in Ageing (ERA AGE 2) - European Commission 7th Framework Programme (FP7-ERA-NET-2008-RTD N° 235356). 8th ERA-AGE FORUM Meeting. Vienna, Austria, March 2011.
- León-Salas B. Expert Panel on Senior Caregivers Programs. Carlos III University, Getafe, April 2011.
- León-Salas B. Expert Panel of the Workshop "Capacities and Innovation Opportunities in ICT for Alzheimer's". National School of Health, Campus Chamartín-ISCIII, Madrid, October 2011.
- Álvarez-Linera J. Experimental teaching collaboration at Department of Anatomy and Human Embriology UCM, Madrid, February 2, 2011.
- Álvarez-Linera J. y Hernández Tamames, J.A. Meeting of expert users of the Arterial Spin Labeling (ASL) technology. Annual meeting, ISMRM. Apr30 -May7, 2010.
- Álvarez-Linera J. ALZHEIMER'S DISEASE SCIENTIFIC ADVISORY BOARD. Meeting of expert users. Bristol-Myers Squibb. Amsterdam, Netherlands, January 18, 2010.
- Álvarez-Linera J. Director of the National Course on Neuroradiology.
- Benito León J. Asociet Editor of the Journal of Alzheimer Disease.
- Hernández Tamames JA. y Malpica N. Biomedical imaging training program from Massachussets Institute of Technology (MIT) and Community de Madrid.
- Hernández Tamames JA. Member of the Management Committee of the European COST Action, "ASL in dementia".
- Ramos González A. Member of Neuroradiology of the VI National Congress of Radiology.
- Ramos González A. Secretariat of the Spanish Society of Neuroradiology (SENOR).
- Ramos González A. Chairperson of the Neuro-oncology group of the Spanish Society of Neuroradiology (SENOR).
- Ramos González A. Reviewer of the Neuroradiology section in the journal "Radiología".
- Ramos González A. Secretariat of the Committee on New Technologies. 12 de Octubre Hospital de Madrid.
- Ramos González A. Session moderator at XIX Neuroradiologic Symposium (European Congress associated to the World Congress on Neuroradiology). Bologna. Italy. October 4-9, 2010.



4. SOCIAL MARKETING AND AWARDS

4.3 Social marketing and awards

International Year of Research on Alzheimer's and Neurodegenerative Diseases

In 2011, the Queen Sophia Foundation, the Ministry of Economy and Finance, the Ministry of Health and Social Policy, the Ministry of Science and Innovation, the Pasqual Maragall Foundation, the CIEN Foundation and the Carlos III Institute of Health (ISCIII) signed a collaboration agreement by which a Consortium was established. This enabled the promotion of the project "International Year of Research on Alzheimer's and neurodegenerative diseases": Alzheimer's International 2011".

This initiative, implemented to foster research on Alzheimer's disease and related neurodegenerative diseases, relying on the creation of synergies and the "combined efforts" as backbones of the program, could be described as a resounding success.

Its implementation has placed Spain as one of the pioneering European countries to promote specific international initiatives and public-private partnerships where the role of research has been fundamental, according to the demands and recommendations from the European Union. All Consortium activities throughout the year 2011 have had a clear objective: to raise funds to promote research into the most prevalent neurodegenerative disease: Alzheimer's Disease. The events culminated in the Global Alzheimer's Research Summit, held on September 22 and 23, a scientific meeting which brought together researchers from all over the world at the Convention Centre in Madrid. The aim of the Summit was to exchange information, ongoing research lines and possible advances in research on neurodegenerative diseases in general and Alzheimer's disease in particular.

"Christmas Tree of Memories", in collaboration with the Caja Madrid Social Project

To mark the Alzheimer's International Year 2011 and along with the "Memory Bank" campaign conducted by the Queen Sophia Foundation, in late 2011 the CIEN Foundation started the initiative called "Christmas Tree of Memories".

This initiative, sponsored by the Caja Madrid Social Project and supported by journalist Irma Soriano, was designed with two objectives: encouraging citizens' involvement in the "Vallecas Project", one of the current ongoing research projects for early diagnosis of Alzheimer's Disease in the UIPA, and raising funds for the project.

Thus, under agreement with this institution, the Caja Madrid Social Project donated 1 euro for each memory donated to the tree (either personally at Queen Sophia Foundation the Alzheimer Center or



by posting a message through Twitter to hashtag #recuerdo solidario).

The successful participation and involvement of Caja Madrid Social Project, which joined Queen Sophia Foundation and AFALContigo, has expanded the number of volunteers to participate in the "Vallecas Project" from the 200 people initially foreseen in the pilot study up to over 1,000 participants. Expanding the critical mass will allow researchers to obtain more conclusive results.

The BT-CIEN, awarded as one of 100 Top Ideas of the Year by *Actualidad Económica*

The CIEN Foundation Tissue Bank was awarded by the *Actualidad Económica* magazine as one of the

best ideas of the year 2011 within the category of Health. With these awards, *Actualidad Económica*, the oldest economic and business information magazine in Spain, published by *Unidad Editorial*, publisher of other media outlets such as *El Mundo*, *Expansión* or *Marca*. This award honors institutions and companies for their commitment to innovation, which translates into products or services presented in 2010 aimed at improving the quality of life of society or its customers.

The award ceremony, held on April 28, 2011 in Madrid, was attended by Dr. Alberto Rábano, neuropathologist of the CIEN Foundation and Director of BT-CIEN, and María Ángeles Pérez, Managing Director of the CIEN Foundation.



4. SCIENCE AND SOCIAL COMMUNICATION

4.4 Presence in Media

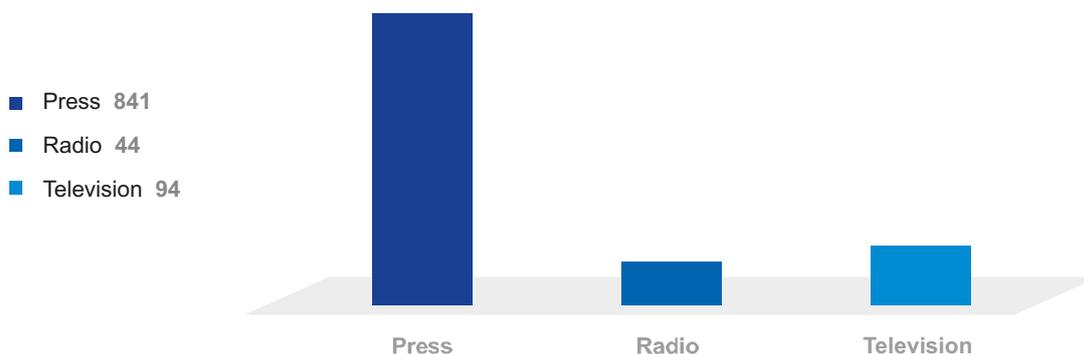
In 2011, the CIEN Foundation has increased its presence in media. The Foundation entrenchment as a leader in the sector, is shown by an increase in the number of impacts, reflecting its growing position as a point of reference for neurological disease-related issues and, in particular, Alzheimer's.

Information about Health and Science research in Spain is released in media through the CIEN

Foundation. The Communication Department works closely with journalists and focuses its activity on highlighting the importance of research to advance knowledge about neurological diseases.

During 2011 the number of media appearances has increased up to 979, by 24.1% compared to the previous year: 841 in press (paper and Internet) and 138 on radio and television.

Press Clipping in 2011



DIARIO MEDICO

I+D+i

La Fundación CIEN y el Ciberned unen esfuerzos en investigación

Resolución

La Fundación CIEN (Centro de Investigación de Enfermedades Neurodegenerativas) y el Centro de Investigación Biomédica en Red de Enfermedades Neurodegenerativas (CIBERNED), dependientes del Ministerio de Ciencia e Innovación a través del Instituto de Salud Carlos III, han firmado un convenio de colaboración para fomentar la cooperación mediante acciones conjuntas de investigación científica y tecnológica en enfermedades neurodegenerativas.

Con este acuerdo, ambas instituciones buscan promover la colaboración entre grupos investigadores, optimizar los recursos disponibles y fomentar la excelencia en la investigación.

Entre las principales sinergias derivadas de esta conversión figura la continuidad en el uso de las instalaciones de la fundación por parte de los investigadores CIBERNED. Por su parte, la Fundación CIEN contará con la ayuda crítica investigadora de CIBERNED, ya que podrá compartir los recursos logrados por los 58 grupos de investigación que componen este organismo. Además, se contempla la participación de ambas instituciones en proyectos subvencionados para I+D.

LA GACETA

Alberto Lázaro • Director de la Fundación Cien
"Ya tiene dos donaciones el banco de cerebros de Salamanca"

El director de la Fundación Centro de Investigación de Enfermedades Neurodegenerativas de Madrid Alberto Lázaro, en un momento del acto de firma del convenio de colaboración con el CIBERNED.

El convenio de colaboración entre la Fundación CIEN y el CIBERNED, dependientes del Ministerio de Ciencia e Innovación a través del Instituto de Salud Carlos III, ha sido firmado por Alberto Lázaro, director de la Fundación CIEN, y el CIBERNED, dependientes del Ministerio de Ciencia e Innovación a través del Instituto de Salud Carlos III.

El convenio de colaboración tiene como objetivo fomentar la cooperación mediante acciones conjuntas de investigación científica y tecnológica en enfermedades neurodegenerativas.

Con este acuerdo, ambas instituciones buscan promover la colaboración entre grupos investigadores, optimizar los recursos disponibles y fomentar la excelencia en la investigación.

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Público



Resonancia de alta capacidad usada en el estudio

Una hora para diagnosticar el alzhéimer

Un estudio valida la resonancia para distinguir distintos tipos de demencia

ANITA ROSEN

En un futuro, el uso de técnicas de diagnóstico por imagen permitirá, en poco menos de una hora, distinguir entre las personas que sufren demencia cognitiva de las que pueden sufrirla.

Un estudio pionero del Grupo de Demencia de la Universidad de Madrid (DORCAM) ha demostrado, tras una serie de ensayos clínicos, la capacidad diagnóstica de una técnica de imagen de alta resolución que permite distinguir entre los tipos de demencia.

El estudio, que se ha publicado en la revista *Journal of Alzheimer's Disease*, muestra que una hora de resonancia magnética de alta resolución puede distinguir entre los tipos de demencia con una precisión superior a la de los métodos de diagnóstico tradicionales.

Los investigadores han utilizado una técnica de resonancia magnética de alta resolución que permite distinguir entre los tipos de demencia con una precisión superior a la de los métodos de diagnóstico tradicionales.

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EL PAIS
MADRID

Un ensayo en ratas abre la puerta a la recuperación de la memoria

Se demuestra por primera vez la eficacia de un implante cerebral en la función cognitiva • El hallazgo permite investigar futuros tratamientos del alzhéimer

Un ensayo en ratas ha demostrado por primera vez la eficacia de un implante cerebral en la función cognitiva. El hallazgo permite investigar futuros tratamientos del alzhéimer.

El estudio, que se ha publicado en la revista *Journal of Alzheimer's Disease*, muestra que un implante cerebral puede mejorar la función cognitiva de las ratas con demencia.

Los investigadores han utilizado un implante cerebral que permite mejorar la función cognitiva de las ratas con demencia.

El estudio, que se ha publicado en la revista *Journal of Alzheimer's Disease*, muestra que un implante cerebral puede mejorar la función cognitiva de las ratas con demencia.

Los investigadores han utilizado un implante cerebral que permite mejorar la función cognitiva de las ratas con demencia.

pronto

EMERGENCIAS NEUROLOGICAS

Irma Soriano presentó el árbol de las neuronas contra el Alzhéimer



La participación en el árbol de las neuronas para seguir impulsando la investigación sobre el Alzhéimer, una patología que afecta a más de 150.000 personas en España. Una de las iniciativas más innovadoras, es el «Proyecto Neuronas», que trata de identificar los mecanismos moleculares de la enfermedad y que cuenta con el apoyo de la Fundación Reina Sofía, la Fundación CIEN, AL-

El 12 de diciembre, Irma Soriano, presidenta del árbol de las neuronas en el Centro Alzheimer de la Fundación Reina Sofía de Madrid para que, según lo desea, pueda seguir investigando en su campo de trabajo.

Por cada neurona, Caja Madrid donará 1 euro a la investigación.

ACTUALIDAD ECONOMICA

-66- BANCO DE CEREBROS FUNDACIÓN CIEN

CREAR EL BANCO DE TEJIDOS BT-CIEN HA SIDO LA CULMINACIÓN DE UN TRABAJO DESARROLLADO POR LA FUNDACIÓN CENTRO DE INVESTIGACIÓN DE ENFERMEDADES NEURODEGENERATIVAS. ESTÁ SITUADO EN EL CENTRO ALZHEIMER DE LA FUNDACIÓN REINA SOFÍA, EN MADRID, Y GUARDA TEJIDO CEREBRAL CEDIDO POR DONANTES PARA SU USO EN INVESTIGACIONES SOBRE ENFERMEDADES NEURODEGENERATIVAS.




4. SCIENCE AND SOCIAL COMMUNICATION

EL PAIS
MADRID

No se trata el alzhéimer, se trata al enfermo

Sin curación a la vista, el futuro de la dolencia pasa por el diagnóstico precoz • Palliar los síntomas siempre es posible



EL PAIS publica un artículo sobre el alzhéimer, una enfermedad neurodegenerativa. El artículo discute los desafíos de diagnóstico y el impacto de la enfermedad en la vida del paciente y su familia. Se menciona la importancia del diagnóstico precoz y el apoyo a los pacientes y sus cuidadores.

Con algunas sustancias se intenta comprender la pérdida de memoria

Se trabaja en la detección precoz para retrasar la evolución del mal

El artículo describe los esfuerzos científicos para comprender mejor la pérdida de memoria y desarrollar tratamientos que retrasen la progresión de la enfermedad. Se menciona el uso de ciertas sustancias y la importancia de la investigación en este campo.

La diferencia entre el ser y el estar

Este artículo explora la distinción filosófica y científica entre 'ser' y 'estar', relacionándola con la naturaleza de la conciencia y la experiencia humana. Se discute cómo estas nociones se aplican a la comprensión de la mente y la existencia.

EL PAIS
MADRID

Google ya es parte de tu memoria

El uso de las nuevas tecnologías altera la forma de recordar y aprender • El impacto llega a las conexiones neuronales



Este artículo analiza cómo el uso de tecnologías como Google y otros motores de búsqueda está cambiando la forma en que recordamos y aprendemos. Se discute el impacto de la información instantánea en nuestras conexiones neuronales y la memoria a largo plazo.

La plasticidad del cerebro es clave para adaptarse a las tecnologías

El artículo explora el concepto de plasticidad cerebral y cómo el cerebro se adapta a los cambios ambientales, incluyendo el uso de tecnologías. Se menciona la capacidad del cerebro para reorganizarse y formar nuevas conexiones.

Las calculadoras cambian el modo de enfrentarse a las matemáticas

Este artículo discute cómo el uso de calculadoras y herramientas digitales está cambiando la forma en que los estudiantes se enfrentan a las matemáticas. Se menciona el impacto de la tecnología en el aprendizaje y la comprensión de conceptos matemáticos.

4.5 Presence on social networks

In the Alzheimer's International Year, the CIEN Foundation has decided to enhance its presence on social networks by creating public profiles in September 2011. The impact on social networks has been as follows:

- Facebook:**
<https://www.facebook.com/FundacionCIEN>. In December 2011 it reached 300 "I Like". Visits to publications increased from 6,925 in October up to 18,035 in November and up to 26,736 in December 2011.

- Twitter:**
 @ Fund_CIEN. In December 2011 it counted on 1,717 followers interacting and posting about 549 monthly re-tweets and mentions increasingly raised from 1,145 in October to 1,443 in November and up to 1,802 in December.
- LinkedIn:**
 We have created our business profile and are currently publishing on various groups addressing a more specialized audience.



2011

Annual Report



cién
Fundación Centro Investigación
Enfermedades Neurológicas

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