



**M. Ledia Fernandez
Hernandez**

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

I developed my PhD in the Laboratory of Prof. Francisco Mora (UCM) and my postdoctoral training in Prof. Ann Graybiel's Lab at the **Massachusetts Institute of Technology (MIT)**. I have learnt state-of-the-art techniques such as the multi-tetrode recording of single units and local field potentials (LFPs), fast-scan voltammetry and viral and optical manipulation of neuronal activity (optogenetics) together with behavioural assessment techniques and Parkinson disease models in rodents and primates.

I have made major contributions to the Neuroscience field and specifically to the areas of striatal cell physiology, brain oscillations and Parkinson disease, with a specific interest in the learning, acquisition and development of habits. I have used state-of-the-art technologies to adequately address relevant scientific problems. The experimental work during these years has led to the publication of original articles in high-quality specialized journals, such as **Journal of Neuroscience**, as well as in top-ranked multidisciplinary journals, such as **Proceedings of the National Academy of Sciences (PNAS, 2 articles)**. During that period I also collaborated with Prof. Ann Young, from the **Massachusetts General Hospital (MGH)** in a project funded by the UDALL Foundation. We published 2 papers as the result of that collaboration too.

Additionally, as the result of the work developed during this period, I have been invited to write a review in a special issue of a specialized journal from the field (Basal Ganglia Journal). I have been also invited to **several events as speaker**, some scientific (such as next Meeting of the Mediterranean Neuroscience Society to be held in Turkey (2017); and others for scientific disclosure, such the event organized by the Parkinson Action Network to present my research to the Members of the Congress of the United States in Capitol Hill, Washington D.C. (2014).

I have been **successful obtaining funding** from **national** and highly competitive **international** agencies (e.g., **European Research Council (ERC-Marie Curie Individual grants (IF), Fulbright Association, Parkinson Disease Foundation and the National Parkinson's Foundation)**). In 2008, I was awarded by the American Association for the Advance of Science (AAAS) with the **Excellence in Science Award**.

I am an expert **evaluator for the Research Executive Agency (REA)** of the European Commission (EX2014D178613). I am also a **reviewer for international scientific journals**: Cerebral Cortex, Movement Disorders Journal, Frontiers in Neurosciences, Frontiers in Pharmacology and Neuromodulation. I am a member of the American Association for the Advancement of Science (AAAS), New York Academy of Sciences (NYAS), International Basal Ganglia Society (IBAGS), Society for Neurosciences (SfN), Federation for European Neurosciences (FENS) and Sociedad Española de Neurociencia (SENC).

At last, I have **teaching experience and I am currently the supervisor** of 3 Master Students (2CEU and 1UAM) and 2 PhD students (UAM and UCM). An additional and major complementary training was the opportunity to attend numerous talks by experts in the field and getting to know personally the world leaders of basal ganglia/Parkinson's disease as well as other related fields. This **established network** will allow me to collaborate with national and international labs in order to pursue a more comprehensive and competitive research line.

General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

I have published 18 original scientific papers (3 reviews) in high impact journals, 4 in journals ranked as D1 and 3 in Q1 journals, all as a first author: Trends in Neurosciences, Proceedings of the National Academy of Sciences (PNAS), Journal of Neuroscience,... My h-index is 7, cited 179 times in less than 10 years. Invited to several events as speaker, some scientific (IBAGS, Meeting of the Mediterranean Neuroscience Society, SENC,...); and others for scientific disclosure, such the event organized by the Parkinson Action Network to present my research to the Members of the Congress of the United States in Capitol Hill, Washington D.C. (2014).

I have been successful obtaining funding from national and highly competitive international agencies (e.g., European Research Council (ERC-Marie Curie Individual grants (IF), Fulbright Association, and granted funding from Parkinson Disease Foundation and the National Parkinson's Foundation as a IP.). In 2008, I was awarded by the American Association for the Advance of Science (AAAS) with the Excellence in Science Award.

I am an expert evaluator for the Research Executive Agency (REA) of the European Comission (EX2014D178613). I am also a reviewer for international scientific journals: Cerebral Cortex, Movement Disorders Journal, Frontiers in Neurosciences, Frontiers in Pharmacology and Neuromodulation. I am a member of the American Association for the Advancement of Science (AAAS), New York Academy of Sciences (NYAS), International Basal Ganglia Society (IBAGS), Society for Neurosciences (SfN), Federation for European Neurosciences (FENS) and Sociedad Española de Neurociencia (SENC).

At last, I have teaching experience and I am currently the supervisor of 3 Master Students (2CEU and 1UAM) and 2 PhD students (UAM and UCM).

**M. Ledia Fernandez Hernandez**

Surname(s): **Fernandez Hernandez**
 Name: **M. Ledia**
 DNI: **46822133**
 ResearcherID: **J-3077-2012**
 Date of birth: **31/10/1976**
 Gender: **Female**
 Nationality: **Spain**
 Country of birth: **Spain**
 Aut. region/reg. of birth: **Community of Madrid**
 Contact province: **Madrid**
 City of birth: **Madrid**
 Contact address: **Avenida Carlos V, 70**
 Postcode: **28938**
 Contact country: **Spain**
 Contact aut. region/reg.: **Community of Madrid**
 Contact city: **Mostoles**
 Email: **lediafernandez@hmhospitales.com**

Current professional situation

Employing entity: Fundación de Investigación HM Hospitales **Type of entity:** Foundation
Department: HM-CINAC, Hospital Universitario HM Puerta del Sur
Professional category: Personal Investigador
Start date: 12/05/2015
Type of contract: Permanent employment contract **Dedication regime:** Full time

Previous positions and activities

	Employing entity	Professional category	Start date
1	CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED)	Personal Investigador	01/05/2013
2	FUNDACION PARA LA INVESTIGACION MEDICA APLICADA	colaborador de investigación	01/11/2011
3	Massachusetts Institute of Technology M.I.T.	Postdoctoral Affiliate	01/10/2006
4	FUNDACION PARA LA INVESTIGACION MEDICA APLICADA	Contratado Doctor	06/02/2006
5	Universidad Complutense de Madrid	Estudiante predoctoral	01/10/2000
6	Universidad Complutense de Madrid	Colaborador Honorífico	01/10/1998



- 1** **Employing entity:** CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED)
Department: Consejo Superior de Investigaciones Científicas, Instituto Cajal_CSIC
Professional category: Personal Investigador
Start-End date: 01/05/2013 - 01/05/2015 **Duration:** 1 year
Dedication regime: Full time
- 2** **Employing entity:** FUNDACION PARA LA INVESTIGACION MEDICA APLICADA
Professional category: colaborador de investigación
Start-End date: 01/11/2011 - 30/04/2013 **Duration:** 2 years - 11 months
Type of contract: Temporary employment contract
Dedication regime: Full time
- 3** **Employing entity:** Massachusetts Institute of Technology M.I.T.
Professional category: Postdoctoral Affiliate
Start-End date: 01/10/2006 - 29/09/2011 **Duration:** 5 years
- 4** **Employing entity:** FUNDACION PARA LA INVESTIGACION MEDICA APLICADA
Professional category: Contratado Doctor
Start-End date: 06/02/2006 - 06/09/2006 **Duration:** 9 months
- 5** **Employing entity:** Universidad Complutense de Madrid **Type of entity:** University
Professional category: Estudiante predoctoral
Start-End date: 01/10/2000 - 30/09/2004 **Duration:** 4 years
- 6** **Employing entity:** Universidad Complutense de Madrid **Type of entity:** University
Professional category: Colaborador Honorífico
Start-End date: 01/10/1998 - 30/05/1999 **Duration:** 8 months



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

University degree: Higher degree

Name of qualification: Licenciado en Biología Opción Biología Sanitaria

City degree awarding entity: Madrid, Community of Madrid, Spain

Degree awarding entity: Universidad Complutense **Type of entity:** University de Madrid

Date of qualification: 01/09/1999

Doctorates

Doctorate programme: Programa Oficial de Doctorado en Neurociencia

Degree awarding entity: Universidad Complutense **Type of entity:** University de Madrid

Date of degree: 08/09/2005

Attended advanced, improvement and innovative teacher training and new technology courses and seminars focused on improving teaching

- 1 **Title of course/seminar:** CREATING AND GRADING EXAMS
Goals of the course/seminar: COMO CREAR Y EVALUAR EXAMENES
Organising entity: POSTDOCTORAL ASSOCIATION AT MIT
Faculty, institute or centre: Massachusetts Institute of Technology
Duration in hours: 2 hours
Start-End date: 03/05/2011 - 03/05/2011
- 2 **Title of course/seminar:** PROFESSIONAL DEVELOPMENT TRAINING FOR POSTDOCTORAL FELLOWS
Goals of the course/seminar: SERIE DE SEMINARIOS DIRIGIDOS A LA FORMACION DE POSTDOCS Y PERSONAL INVESTIGADOR CON EL OBJETIVO DE CUBRIR LOS MULTIPLES ASPECTOS DE LA FORMACION DEL PERSONAL INVESTIGADOR: DESDE COMO ESCRIBIR ARTICULOS, PEDIR BECAS, SER UN BUEN MENTOR, PREPARAR CLASES Y EXAMENES
Organising entity: DPT.BRAIN & COG. SCIENCES, THE MCGOVERN INST. FOR BRAIN RES. AND PICOWER INSTITUTE FOR LEARNING
Faculty, institute or centre: Massachusetts Institute of Technology
Duration in hours: 18 hours
Start-End date: 07/02/2011 - 27/04/2011
- 3 **Title of course/seminar:** CORE MISSION OF ACADEMIC SCIENTIST: TO CREATE AND DISSEMINATE KNOWLEDGE
Goals of the course/seminar: DETERMINAR LAS CLAVES DEL EXITO EN LA FORMACION DE PERSONAL INVESTIGADOR CON DEDICACION DOCENTE

Type of entity: University



Organising entity: POSTDOCTORAL ASSOCIATION
AT MIT

Faculty, institute or centre: Massachusetts Institute of Technology

Duration in hours: 4 hours

Start-End date: 23/02/2011 - 23/02/2011

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
Catalan		C1	C1	C1	C1
Spanish		C1	C1	C1	C1
English		C1	C1	C1	C1

Teaching experience

General teaching experience

- 1 Name of the course:** Modelos experimentales y avances en Neurociencias
Type of programme: Master's degree **Type of teaching:** In person theory
University degree: Master Universitario en Medicina Regenerativa y Terapia Celular
End date: 11/03/2016
End date: 11/03/2016 **Type of hours/ ECTS credits:** Credits
Entity: Universidad San Pablo CEU **Type of entity:** University
Faculty, institute or centre: Medicine
- 2 Name of the course:** Anatomía y Fisiología de los Ganglios Basales
University degree: Licenciado en Medicina y Cirugía
End date: 01/12/2015
End date: 01/12/2015
Entity: Universidad CEU San Pablo **Type of entity:** University
- 3 Type of teaching:** Official teaching
Name of the course: Modelos experimentales para patologías asociadas a los Ganglios Basales
Type of programme: Master's degree
Type of subject: Doctorate
University degree: Master y Doctorado en Neurociencias
Frequency of the activity: 1
Start date: 08/01/2014 **End date:** 06/02/2014
End date: 06/02/2014 **Type of hours/ ECTS credits:** Hours
Hours/ECTS credits: 2
Entity: Universidad de Navarra **Type of entity:** University
Faculty, institute or centre: Facultad de Medicina
City of entity: Pamplona, Foral Community of Navarre, Spain
- 4 Type of teaching:** Official teaching
Name of the course: FISILOGIA HUMANA/Segundo
Type of programme: Bachelor's degree **Type of teaching:** Laboratory work



Type of subject: Core

University degree: Licenciado en Medicina y Cirugía

Course given: Segundo

Start date: 01/10/2003

End date: 30/05/2005

Hours/ECTS credits: 15

Entity: Universidad Complutense de Madrid

Faculty, institute or centre: Facultad de Medicina

Department: Fisiología humana

Subject language: Spanish

End date: 30/05/2005

Type of hours/ ECTS credits: Hours

Type of entity: University

Experience supervising doctoral thesis and/or final year projects

- 1 Project title:** Vulnerabilidad Selectiva en la Enfermedad de Parkinson
Type of project: Doctoral thesis
Entity: FUNDACION HOSPITAL MADRID
Student: Ivan Castela Muñoz
- 2 Project title:** Satisfacción con el tratamiento e impacto sobre calidad de vida en pacientes de Enfermedad de Parkinson y Temblor Esencial tratados con HIFU
Entity: HOSPITAL DE MADRID, S.A.
Student: Frida Hernandez Fernandez

Student tutorials

- 1 Name of the programme:** Improved performance
Entity: Universidad de Navarra
City of entity: Pamplona, Foral Community of Navarre, Spain
Frequency of the activity: 10
Number of tutored students: 2
Type of entity: University
- 2 Name of the programme:** Improved performance
Entity: Department of Brain and Cognitive sciences
City of entity: Cambridge, United States of America
Number of tutored students: 1
Type of entity: University
- 3 Name of the programme:** Master
Entity: Fundacion Hospital de Madrid
City of entity: Mostoles, Community of Madrid, Spain
Number of recognized hours/ECTS credits: 30
Number of tutored students: 2
- 4 Name of the programme:** UROP (Undergraduate Research Opportunities program)
Entity: Department Brain and Cognitive Sciences
City of entity: Cambridge, United States of America
Number of tutored students: 2
Type of entity: University



Other activities/achievements not included above

- Description of the activity:** Practicas tuteladas_Investigación en Neurociencias
Organising entity: Universidad San Pablo CEU **Type of entity:** University
End date: 02/02/2016
- Description of the activity:** Seminario Vanguardia de la Neurociencia. Master de Neurociencias de la UAM
Organising entity: Universidad Autónoma de Madrid **Type of entity:** University
End date: 14/11/2014
- Description of the activity:** Animal models in Basal Ganglia pathologies
City of activity: Pamplona, Foral Community of Navarre, Spain
Organising entity: Universidad de Navarra **Type of entity:** University
End date: 01/2014

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

- Name of the project:** Selective vulnerability of neuronal degeneration in Parkinson disease: The Risk of Excessive Routine behaviour and Multi-tasking
Entity where project took place: HM-CINAC **Type of entity:** Foundation
City of entity: Madrid, Spain
Name principal investigator (PI, Co-PI....): Jose Obeso
Nº of researchers: 5
Funding entity or bodies:
Obra Social Fundación la Caixa **Type of entity:** Foundation
City funding entity: Barcelona, Catalonia, Spain
Start-End date: 01/01/2017 - 31/12/2020
Total amount: 375,5 €
- Name of the project:** PATRON Y MECANISMOS DE VULNERABILIDAD NEURONAL EN LA ENFERMEDAD DE PARKINSON: EL RIESGO DE LA ACTIVIDAD RUTINARIA
Type of project: Basic research (including archaeological digs, etc)
Entity where project took place: HM-CINAC, Hospital HM Puerta del Sur
City of entity: Mostoles, Madrid, Community of Madrid, Spain
Name principal investigator (PI, Co-PI....): Jose Obeso
Nº of researchers: 6
Funding entity or bodies:
Ministerio de Economía y Competitividad **Type of entity:** State agency
City funding entity: Madrid, Community of Madrid, Spain
Start-End date: 31/12/2015 - 31/12/2019 **Duration:** 4 years
Total amount: 294.000 €



Dedication regime: Full time

3 Name of the project: Selective Vulnerability, Progression and Synuclein Toxicity in Parkinson Disease.

Entity where project took place: HM-CINAC

City of entity: Madrid, Spain

Name principal investigator (PI, Co-PI....): Jose Obeso

Funding entity or bodies:

Fundación BBVA

Type of entity: Foundation

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 01/09/2016 - 31/08/2019

Total amount: 150 €

4 Name of the project: Routine behaviour Overloads Substantia Nigra in Parkinson's Disease". Selective vulnerability of neuronal degeneration in Parkinson's disease: the load arise from dealing with routine behaviour.

Type of project: Basic research (including archaeological digs, etc)

Geographical area: European Union

Degree of contribution: Researcher

Entity where project took place: CINAC_Hospital de Madrid Puerta del Sur

Type of entity: University Research Institute

City of entity: Mostoles, Community of Madrid, Spain

Name principal investigator (PI, Co-PI....): Ledia F. Hernandez

Nº of researchers: 1

Type of participation: Principal investigator

Name of the programme: Marie Skłodowska-Curie Actions

Code according to the funding entity: IF_RI_ROSNPD-660964

Start-End date: 01/01/2016 - 31/12/2017

Duration: 2 years

Total amount: 170.122 €

Dedication regime: Full time

5 Name of the project: Progresión del Déficit Dopaminérgico y Mecanismos Extra-Estriatales en la Enfermedad de Parkinson: Compensación inicial vs Progresión Secundaria

Type of project: Basic research (including archaeological digs, etc)

Geographical area: National

Degree of contribution: Researcher

Entity where project took place: FUNDACION PARA LA INVESTIGACION MEDICA APLICADA

City of entity: Pamplona, Foral Community of Navarre, Spain

Name principal investigator (PI, Co-PI....): Jose Obeso; Carmen Cavada

Nº of researchers: 2

Funding entity or bodies:

Ministerio de Economía y Competitividad

Type of entity: State agency

City funding entity: Madrid, Community of Madrid, Spain

Name of the programme: Proyectos de Investigación Fundamental no Orientada 2012

Code according to the funding entity: SAF2012-40216-C02-01

Start-End date: 01/01/2013 - 31/12/2015

Duration: 3 years

Total amount: 128.700 €

Dedication regime: Full time

- 6** **Name of the project:** Levo-Dopa Restoration of Normal Behavior in Parkinson's disease: Development of a Model of Parkinson's Disease Combining Fast Scan Cyclic Voltammetry and Tetrode Ensemble Recording.
Type of project: Basic research (including archaeological digs, etc) **Geographical area:** Non EU International
Degree of contribution: Researcher
Entity where project took place: Department of Brain and Cognitive Sciences. Massachusetts Institute of Technology
City of entity: Cambridge, United States of America
Name principal investigator (PI, Co-PI....): Ann Graybiel; Ledia F Hernandez
Nº of researchers: 2
Funding entity or bodies: National Parkinson Foundation **Type of entity:** Foundation
City funding entity: Florida, United States of America
Type of participation: Others
Start-End date: 2010 - 2012 **Duration:** 2 years
Dedication regime: Full time
- 7** **Name of the project:** Restorative Plasticity at corticostriatal excitatory synapses (REPLACES)
Entity where project took place: Centro de Investigacion Medica Aplicada (CIMA)
Name principal investigator (PI, Co-PI....): Monica di Luca
Nº of researchers: 9
Funding entity or bodies: Comisión Europea **Type of entity:** European Research Council
City funding entity: Madrid, Community of Madrid, Spain
Start-End date: 2008 - 2012
- 8** **Name of the project:** Combining fast scan cyclic voltammetry and tetrode ensemble recording in a rat model of Parkinson's disease.
Type of project: Basic research (including archaeological digs, etc) **Geographical area:** Non EU International
Degree of contribution: Researcher
Entity where project took place: Department of Brain and Cognitive Sciences **Type of entity:** University
City of entity: Cambridge, United States of America
Name principal investigator (PI, Co-PI....): Ledia F Hernandez
Nº of researchers: 1
Funding entity or bodies: Parkinson Disease Foundation **Type of entity:** Foundation
City funding entity: New York, United States of America
Code according to the funding entity: FY2008-09
Start-End date: 01/10/2008 - 30/09/2009 **Duration:** 1 year
Total amount: 50.000 €
Dedication regime: Full time
- 9** **Name of the project:** Neurophysiology and neurobiology of the nigrostriatal system.
Degree of contribution: Researcher
Entity where project took place: Massachusetts Institute of Technology and Massachusetts General Hospital **Type of entity:** University
City of entity: Cambridge, United States of America



Name principal investigator (PI, Co-PI....): Ann Young; Ann Graybiel; David Standaert; Ippolita Cantuti Castelvetri; Ledia F Hernandez; Jill Crittenden; Yasuo Kubota

Nº of researchers: 8

Funding entity or bodies:

UDALL

Type of entity: Foundation

City funding entity: Arizona, United States of America

Type of participation: Others

Start-End date: 2008 - 2009

Duration: 1 year

Dedication regime: Full time

10 Name of the project: Papel de las proyecciones dopaminérgicas extraestriatales y de los mecanismos compensatorios en el desarrollo de las disquinesias inducidas por levodopa en el parkinsonismo experimental

Type of project: Basic research (including archaeological digs, etc)

Geographical area: National

Entity where project took place: Centro de Investigacion Medica Aplicada

Type of entity: Foundation

City of entity: Pamplona, Foral Community of Navarre, Spain

Name principal investigator (PI, Co-PI....): Conxita Marín; Esther Aguilar; Merce Bonastre

Nº of researchers: 3

Funding entity or bodies:

Instituto de Salud Carlos III

Type of entity: Public Research Body

City funding entity: Majadahonda, Community of Madrid, Spain

Name of the programme: Proyecto de Investigación en Salud (FIS)

Code according to the funding entity: FIS 05/0094

Start-End date: 2006 - 2008

Duration: 2 years

Total amount: 64.260 €

Dedication regime: Full time

11 Name of the project: Interacción de neurotransmisores y envejecimiento cerebral.

Type of project: Basic research (including archaeological digs, etc)

Geographical area: National

Degree of contribution: Current university student

Entity where project took place: Universidad Complutense de Madrid

Type of entity: University

Name principal investigator (PI, Co-PI....): Francisco Mora; Jose Luis Zamorano; Jose Antonio Garcia Baro; Gregorio Segovia; Ledia F Hernandez; Blanca Marquez de Prado

Nº of researchers: 4

Funding entity or bodies:

MINISTERIO DE EDUCACION Y CIENCIA

City funding entity: Spain

Type of participation: Others

Code according to the funding entity: SAF2003-0448

Start-End date: 15/12/2003 - 14/12/2006

Duration: 3 years

Total amount: 92.000 €

Dedication regime: Full time

12 Name of the project: Envejecimiento e interacción de neurotransmisores

Type of project: Basic research (including archaeological digs, etc)

Geographical area: National

Degree of contribution: Current university student

Entity where project took place: Universidad Complutense de Madrid

Type of entity: University

City of entity: Madrid, Community of Madrid, Spain

Name principal investigator (PI, Co-PI....): Francisco Mora Teruel; Jose Luis Zamorano; Jose Antonio Garcia Baro

Nº of researchers: 3

Funding entity or bodies:

MINISTERIO DE EDUCACION Y CIENCIA

City funding entity: Community of Madrid, Spain

Type of participation: Others

Code according to the funding entity: SAF2000-01112

Start-End date: 2001 - 2003

Duration: 3 years

Total amount: 67,31 €

Dedication regime: Full time

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** Ledia F. Hernandez; Ignacio Obeso; Peter Redgrave; Rui Costa; Jose Obeso. Dopaminergic vulnerability in Parkinson disease: The cost of humans' habitual performance. Trends in Neurosciences. 42, pp. 375. Elsevier, 30/04/2019.

Type of production: Scientific paper **Format:** Journal
- 2** Barbara Picconi; Ledia F. Hernandez; Jose Obeso; Paolo Calabresi. Motor complications in Parkinson Disease: Striatal molecular and electrophysiological mechanisms of dyskinesias. Movement Disorders Journal. Wiley Online Library, 08/12/2017.

Type of production: Scientific paper **Format:** Journal
- 3** Javier Blesa; Ines Trigo-Damas; Michele DiLeone; Natalia Lopez-Gonzalez del Rey; Ledia F Hernandez; Jose Obeso. Compensatory mechanisms in Parkinson's disease: Circuits adaptations and role in disease modification. Experimental Neurology. 298, pp. 148 - 161. Elsevier, 04/10/2017.

Type of production: Scientific paper **Format:** Journal
- 4** Ledia F Hernandez; Ivan Castela; Irene Ruiz-deDiego; Jose Obeso; Rosario Moratalla. Striatal activation by optogenetics induces dyskinesias in the 6-hydroxydopamine rat model of Parkinson disease. Movement Disorders Journal. 32 - 4, pp. 530 - 537. Wiley Online Library, 01/04/2017.

Type of production: Scientific paper **Format:** Journal

Corresponding author: Yes
- 5** Ledia F Hernandez; Peter Redgrave; Jose Obeso. Habitual Behavior and Dopamine Cell Vulnerability in Parkinson's Disease. Frontiers in Neuroanatomy. Frontiers, 01/07/2015.

Type of production: Scientific paper **Format:** Journal

Position of signature: 1 **Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee

Total no. authors: 3

- 6** Manuella Mellone; Jennifer Stanic; Ledia F Hernandez; Elena Iglesias; Elisa Ziani; Annalisa Longhi; Annick Prigent; Barbara Picconi; Paolo Calabresi; Etienne C. Hirsch; Jose A Obeso; Monica Di Luca; Fabrizio Gardoni. NMDA receptor GluN2A/GluN2B subunit ratio as synaptic trait of levodopa-induced dyskinesias: from experimental models to patients. *Frontiers in Cellular Neuroscience*. 6 - 9, pp. 245 - 256. Elsevier, 17/06/2015.
Type of production: Scientific paper **Format:** Journal
- 7** Ledia F Hernandez. Firing dynamics and LFP oscillatory patterns in the dopamine-depleted striatum during maze learning. *Basal Ganglia*. 3 - 4, pp. 213 - 219. Elsevier, 01/04/2014. ISSN 2210-5336
Type of production: Scientific paper **Format:** Journal
Position of signature: 1 **Degree of contribution:** Author or co-author of review
- 8** Ledia F Hernandez; Yasuo Kubota; Dan Hu; Mark Howe; Nune Lemaire; Ann Graybiel. Selective effects of dopamine depletion on neuronal subpopulations in the sensorimotor striatum during procedural learning. *Journal of Neuroscience*. 33 - 11, pp. 4782 - 4795. Washington(United States of America): Society of Neuroscience, 2013. ISSN 0270-6474
Type of production: Scientific paper **Format:** Journal
Position of signature: 1 **Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee
Impact source: ISI **Category:** Science Edition - NEUROSCIENCES
Impact index in year of publication: 7.115 **Journal in the top 25%:** Yes
Position of publication: 19 **No. of journals in the cat.:** 244
Source of citations: WOS **Citations:** 1
- 9** Ledia F Hernandez; Nune Lemaire; Yasuo Kubota; Dan Hu; Mark Howe; Ann Graybiel. Effects of dopamine depletion on LFP oscillations in striatum are task- and learning-dependent and selectively reversed by L-DOPA. *Proceedings of the National Academy of Sciences (PNAS)*. 109 - 44, pp. 18126 - 18131. (United States of America): National Academy of sciences, 16/10/2012. ISSN 1091-6490
Type of production: Scientific paper **Format:** Journal
Position of signature: 1 **Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee
Impact source: ISI **Category:** Science Edition - MULTIDISCIPLINARY SCIENCES
Impact index in year of publication: 9.68 **Journal in the top 25%:** Yes
Position of publication: 3 **No. of journals in the cat.:** 56
Relevant results: Lemaire and Hernandez equally contributed to this work. co-authors
- 10** Ippolita Cantuti-Castelvetri; Ledia F Hernandez; Christine Keller-McGandy; Lauren R Kett; Alex Landy; Zane R. Hollingsworth; Esen Saka; Jill Crittenden; Eduardo Nillni; Ann Young; David Standaert; Ann Graybiel. Levodopa-induced dyskinesia is associated with increased thyrotropin releasing hormone in the dorsal striatum of hemi-parkinsonian rats. *PloS One*. 5 - 11, pp. e13861 - e13861. San Francisco(United States of America): The Public Library of Science, 10/11/2010. ISSN 1932-6203
Type of production: Scientific paper **Format:** Journal
Position of signature: 2 **Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee
Source of citations: WOS **Citations:** 2
Relevant results: Total Article Views: 1,810 (online, free per-review Open Access journal)
- 11** Jill Crittenden; Ippolita Cantuti Castelvetri; Esen Saka; Christine Keller-McGandy; Ledia F Hernandez; Lauren R. Kett; Ann Young; David Standaert; Ann Graybiel. Dysregulation of the striatum-enriched genes CalDAG-GEF1 and CalDAG-GEF2 predicts the severity of motor side-effects induced by anti-Parkinsonian therapy. *Proceedings of*



the National Academy of Sciences (PNAS). 106, pp. 2892 - 2896. Washington(United States of America): National Academy of Sciences, 24/02/2009. ISSN 0027-8424

Type of production: Scientific paper

Position of signature: 5

Impact source: ISI

Impact index in year of publication: 9.681

Position of publication: 3

Source of citations: WOS

Format: Journal

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Category: Science Edition - MULTIDISCIPLINARY SCIENCES

Journal in the top 25%: Yes

No. of journals in the cat.: 56

Citations: 27

- 12** Ledia F Hernandez; Gregorio Segovia; Francisco Mora. Chronic treatment with a dopamine uptake blocker changes dopamine and acetylcholine but not glutamate and GABA concentrations in prefrontal cortex, striatum and nucleus accumbens of the awake rat. *Neurochemistry International*. 52 - 3, pp. 457 - 469. Oxford(United Kingdom): PERGAMON-ELSEVIER SCIENCE LTD, 02/2008. ISSN 0197-0186

Type of production: Scientific paper

Position of signature: 1

Impact source: ISI

Impact index in year of publication: 3.228

Position of publication: 116

Source of citations: WOS

Format: Journal

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Category: Science Edition - NEUROSCIENCES

Journal in the top 25%: No

No. of journals in the cat.: 244

Citations: 10

- 13** Ledia F Hernandez; Gregorio Segovia; Francisco Mora. Changes in dopamine and acetylcholine in striatum of the awake rat after chronic treatment with a dopamine uptake blocker. *Brain Research Bulletin*. 68 - 6, pp. 448 - 452. Oxford(United Kingdom): PERGAMON-ELSEVIER SCIENCE LTD, 15/02/2006. ISSN 0361-9230

Type of production: Scientific paper

Position of signature: 1

Impact source: ISI

Impact index in year of publication: 2.818

Position of publication: 119

Source of citations: WOS

Format: Journal

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Category: Science Edition - NEUROSCIENCES

Journal in the top 25%: No

No. of journals in the cat.: 244

Citations: 2

- 14** Ledia F Hernandez; Gregorio Segovia; Francisco Mora. Effects of activation of NMDA and AMPA glutamate receptors on the extracellular concentrations of dopamine, acetylcholine, and GABA in striatum of the awake rat: A microdialysis study. *Neurochemical Research*. 28 - 12, pp. 1819 - 1827. New York(United States of America): SPRINGER/PLENUM PUBLISHERS, 12/2003. ISSN 0364-3190

Type of production: Scientific paper

Position of signature: 1

Impact source: ISI

Impact index in year of publication: 2.24

Position of publication: 158

Source of citations: WOS

Format: Journal

Degree of contribution: Author or co-author of article in journal with external admissions assessment committee

Category: Science Edition - NEUROSCIENCES

Journal in the top 25%: No

No. of journals in the cat.: 244

Citations: 36



- 15** Ledia F. Hernandez. An a-PLAuse to a new assay that unveils previously undetected alpha-synucleinopathies. *Movement Disorders Journal*. Wiley-Online Library, 11/01/2016.
Type of production: Commentary **Format:** Journal
Corresponding author: Yes
- 16** Ledia F. Hernandez; Ignacio Obeso. A STOP Signal to Striatum Mediated by Globus Pallidus: A New Loop Discovered. *Movement Disorders Journal*. Wiley, 2016.
Type of production: Commentary and Opinion article **Format:** Journal
Corresponding author: Yes
- 17** Ledia F Hernandez. Cholinergic neurons: An unexpected source of striatal dopamine release. *Movement Disorders Journal*. 28 - 2, pp. 125. (United States of America): Movement Disorders Society, 12/02/2013. ISSN 1531-8257
Type of production: comentario científico **Format:** Journal
Position of signature: 1 **Degree of contribution:** Author or co-author of article in journal with external admissions assessment committee
Impact source: ISI **Category:** Neurology (clinical)
Impact index in year of publication: 4.505 **Journal in the top 25%:** Yes
Position of publication: 24 **No. of journals in the cat.:** 192
- 18** Ledia F Hernandez. Is it all about timing?. *Movement Disorders Journal*. 27 - 14, pp. 1739 - 1739. Movement Disorder Society, 12/2012. ISSN 0885-3185
Type of production: Comentario científico **Format:** Journal
Position of signature: 1 **Degree of contribution:** Author or co-author of published critical note or commentary
Impact source: ISI **Category:** Science Edition - CLINICAL NEUROLOGY
Impact index in year of publication: 4.5 **Journal in the top 25%:** Yes
Position of publication: 24 **No. of journals in the cat.:** 192

Works submitted to national or international conferences

- 1** **Title of the work:** Habitual and goal directed behavior in a Parkinson disease model
Name of the conference: 7th Mediterranean Neuroscience Conference
Type of event: Seminar
Corresponding author: Yes
City of event: Morocco, Morocco
Date of event: 23/06/2019
Organising entity: Mediterranean Neuroscience Society
Ledia F Hernandez.
- 2** **Title of the work:** Dopaminergic activity in the SNpc during an automatic skilled task
Name of the conference: The 7th Mediterranean Neuroscience Conference
City of event: Marrakech, Morocco
Date of event: 23/06/2019
End date: 27/06/2019
Organising entity: Mediterranean Neuroscience Society
Ledia F Hernandez; Marcelo Mendonça; Joaquim Alves da Silva; Ivan Castela; Jose Obeso; Rui M Costa.



- 3** **Title of the work:** Optodyskinesias: Shining the light into striatum
Name of the conference: IBAGS Meeting
Type of event: Seminar
Reasons for participation: Upon invitation
Corresponding author: Yes
City of event: Biarritz, France
Date of event: 02/05/2019
Organising entity: International Basal Ganglia Society
Ledia F Hernandez.
- 4** **Title of the work:** Optogenetic modulation of specific striatal pathways elicits abnormal behavior in a Parkinson disease model
Name of the conference: IBAGS meeting
Type of event: Conference
Corresponding author: Yes
City of event: Biarritz, France
Date of event: 28/04/2019
End date: 02/05/2019
Organising entity: International Basal Ganglia Society
Ivan Castela; Raquel Casado; Raquel Marquez; Rosario Moratalla; Jose Obeso; Ledia F Hernandez.
- 5** **Title of the work:** Dopaminergic neurons in Substantia Nigra pars compacta code the vigor of movement sequences
Name of the conference: Movement Disorders Society International Congress
City of event: Hong Kong, Hong Kong
Date of event: 05/10/2018
End date: 09/10/2018
Organising entity: Movement Disorders Society
Marcelo Mendonca; Joaquim Alves da Silva; Ledia F. Hernandez; Ivan Castela; Jose Obeso; Rui Costa.
- 6** **Title of the work:** Neural correlates of dopaminergic activity by calcium imaging in the SNpc during a skilled movement task
Name of the conference: FENS Forum of Neuroscience
City of event: Berlin, Germany
Date of event: 07/07/2018
End date: 11/07/2018
Organising entity: Federation of European Neurosciences
Ledia F. Hernandez; Marcelo Mendonca; Joaquim Alves da Silva; Ivan Castela; Jose Obeso; Rui Costa.
- 7** **Title of the work:** Striatal activation by optogenetics induces dyskinesias in the 6-hydroxydopamine model of Parkinson disease
Name of the conference: Gordon Research Conference_Basal Ganglia
Corresponding author: Yes
City of event: Ventura, United States of America
Date of event: 10/03/2018
End date: 16/03/2018
Organising entity: Gordon Research Conference
Ledia F Hernandez; Ivan Castela; Irene Ruiz-deDiego; Rosario Moratalla; Jose Obeso. "Striatal activation by optogenetics induces dyskinesias in the 6-hydroxydopamine model of Parkinson disease."



- 8** **Title of the work:** Activation of Medium Spiny Neurons by Optogenetics induces dyskinesias in a Parkinson disease model
Name of the conference: National Congress of the Spanish Society of Neuroscience
Corresponding author: Yes
City of event: Alicante, Spain
Date of event: 27/09/2017
End date: 30/09/2017
Organising entity: Spanish Society of Neuroscience-Sociedad Española de Neurociencias
Type of entity: Associations and Groups
City organizing entity: Alicante, Spain
Ledia F.Hernandez; Ivan Castela; Irene Ruiz-DeDiego; Jose Obeso; Rosario Moratalla.
- 9** **Title of the work:** Neural correlates of movement sequence kinematics in substantia nigra dopaminergic cells
Name of the conference: International Congress of Parkinson´s disease and Movement Disorders
City of event: Vancouver, Canada
Date of event: 04/06/2017
End date: 08/06/2017
Organising entity: Movement Disorders Society
Marcelo Mendonça; Joaquim Alves da Silva; Ledia F. Hernandez; Jose Obeso; Rui Costa.
- 10** **Title of the work:** Striatal activation by optogenetics induces dyskinesias in the 6-OHDA rat model of Parkinson Disease
Name of the conference: International Basal Ganglia Society-IBAGS
Corresponding author: Yes
City of event: Merida, Mexico
Date of event: 26/03/2017
End date: 31/03/2017
Organising entity: International Basal Ganglia Society
Type of entity: Associations and Groups
City organizing entity: Mexico DF, Mexico
Ledia F.Hernandez; Ivan Castela; Irene Ruiz-DeDiego; Jose Obeso; Rosario Moratalla.
- 11** **Title of the work:** In vivo calcium imaging to identify dopaminergic neurons in the ventro-lateral substantia nigra pars compacta.
Name of the conference: 16th Congress of Spanish Society of Neuroscience (SENC)
City of event: Granada, Andalusia, Spain
Date of event: 23/09/2015
End date: 25/09/2015
Organising entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA
Ledia F. Hernandez; Marcelo Mendonça; Joaquim Alves da Silva; Jose Obeso; Rui Costa.
- 12** **Title of the work:** Optogenetic control of locomotor activity in a rat model of Parkinsons Disease.
Name of the conference: 16th Congress of Spanish Society of Neuroscience (SENC).
City of event: Granada, Andalusia, Spain
Date of event: 23/09/2015
End date: 25/09/2015
Organising entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA
Ivan Castela Muñoz; Ledia F. Hernandez; Jose Obeso; Rosario Moratalla.



- 13** **Title of the work:** In vivo calcium imaging to identify dopaminergic neurons in the ventro-lateral substantia nigra pars compacta.
Name of the conference: III Congreso Internacional de Investigación e Innovación en Enfermedades Neurodegenerativas (CIIEN). 9º Foro Científico CIBERNED.
City of event: Malaga, Andalusia, Spain
Date of event: 21/09/2015
End date: 23/09/2015
Organising entity: CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED)
Ledia F. Hernandez; Marcelo Mendonça; Joaquim Alves da Silva; Jose Obeso; Rui Costa.
- 14** **Title of the work:** Longitudinal PET assessment of metabolic changes associated with slow dopaminergic depletion in the MPTP primate model of Parkinson Disease
Name of the conference: 19th International congress of Parkinson´s Disease and Movement Disorders
City of event: San Diego, California, United States of America
Date of event: 14/06/2015
End date: 18/06/2015
Organising entity: International Parkinson and Movement Disorder Society
Type of entity: Associations and Groups
City organizing entity: Milwaukee, WI, United States of America
Ledia F. Hernandez; Francisco Molinet-Dronza; Francisco Javier Blesa de los Mozos; Carlos Juri; Maria Collantes; Elena Iglesias; Ivan Peñuelas; Jose A Obeso.
- 15** **Title of the work:** The role of GluN2A subunit on the levodopa-induced dyskinesias and its potential therapeutic role
Name of the conference: II Congreso Internacional de Investigación e Innovación en Enfermedades Neurodegenerativas (CIIEN). 8º Foro Científico CIBERNED
City of event: Barcelona, Catalonia, Spain
Date of event: 22/09/2014
End date: 23/09/2014
Organising entity: Instituto de Salud Carlos III
Type of entity: Public Research Body
Ledia F Hernandez; Elena Iglesias; Fabrizio Gardoni; Etienne C Hirsch; Monica DiLuca; Jose A Obeso.
- 16** **Title of the work:** The role of GluN2A subunit on the levodopa-induced dyskinesias and its potential therapeutic role
Name of the conference: 9th FENS Forum
City of event: Milan, Italy
Date of event: 05/07/2014
End date: 09/07/2014
Organising entity: Federation of European Neuroscience Societies
City organizing entity: Bruselas, Belgium
Ledia F Hernandez; Fabrizio Gardoni; Elena Iglesias; Ethiene C. Hirsch; Monica diLuca; Jose A. Obeso.
"The role of GluN2A subunit on the levodopa-induced dyskinesias and its potential therapeutic role".
- 17** **Title of the work:** Selective effects of dopamine depletion and L-DOPA administration on neuronal activity in the striatum during learning and habit formation
Name of the conference: 2014 Parkinson's Action Network Leadership Forum
Type of event: Conference
Geographical area: Non EU International
Type of participation: Participatory - invited/keynote talk
Reasons for participation: Review before acceptance
City of event: Washington DC, United States of America
Date of event: 22/02/2014
End date: 26/02/2014



Organising entity: Parkinson's Action Network **Type of entity:** Non-profit

City organizing entity: Washington, United States of America

With external admission assessment committee: Yes

Ledia F Hernandez. "Selective effects of dopamine depletion and L-DOPA administration on neuronal activity in the striatum during learning and habit formation". 24/02/2014.

18 Title of the work: Extra-striatal compensatory mechanisms in the progressive MPTP monkey model of Parkinson's disease

Name of the conference: Gordon Research Conference

Type of event: Conference

Geographical area: Non EU International

Type of participation: 'Participatory - poster

Reasons for participation: Review before acceptance

City of event: Ventura, California, United States of America

Date of event: 02/02/2014

End date: 07/02/2014

Organising entity: Gordon Research Conference

With external admission assessment committee: Yes

Rebeca Adanez; Ledia F. Hernandez; Guadalupe Mengod; Javier Blesa; Christian Pifl; R Cortes; Elena Iglesias; Mari Cruz Rodriguez Oroz; Oleh Hornykiewicz; Carmen Cavada; Conxita Marin; Jose A Obeso. "Extra-striatal compensatory mechanisms in the progressive MPTP monkey model of Parkinson's disease".

19 Title of the work: Striatal activity during learning and habit formation in a rat model of Parkinson's Disease

Name of the conference: 15º Congreso Nacional de la Sociedad Española de Neurociencias

Type of event: Conference

Geographical area: National

Type of participation: Participatory - oral communication

Reasons for participation: Review before acceptance

City of event: Oviedo, Principality of Asturias, Spain

Date of event: 27/09/2013

End date: 27/09/2013

Organising entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA

City organizing entity: Madrid, Community of Madrid, Spain

With external admission assessment committee: Yes

"Striatal activity during learning and habit formation in a rat model of Parkinson's Disease". En: Striatal activity during learning and habit formation in a rat model of Parkinson's Disease. 27/09/2013.

20 Title of the work: Selective effects of dopamine depletion and L-DOPA administration on striatal neuronal subpopulations during procedural learning and habit formation

Name of the conference: Spanish Young Neuroscientists Symposium

Type of event: Conference

Geographical area: National

Type of participation: Participatory - invited/keynote talk

Reasons for participation: Upon invitation

City of event: Oviedo, Principality of Asturias, Spain

Date of event: 24/09/2013

End date: 24/09/2013

Organising entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA

City organizing entity: Madrid, Community of Madrid, Spain

With external admission assessment committee: Yes

Ledia F Hernandez. "Selective effects of dopamine depletion and L-DOPA administration on striatal neuronal subpopulations during procedural learning and habit formation". En: Selective effects of dopamine depletion and L-DOPA administration on striatal neuronal subpopulations during procedural learning and habit formation. 24/09/2013.



- 21** **Title of the work:** Temas Candentes en la Enfermedad de Parkinson y Trastornos del movimiento (I): Básica
Name of the conference: III EDICION FORUM UCB 2013
Type of event: Workshop **Geographical area:** National
Type of participation: Participatory - invited/keynote talk **Reasons for participation:** Upon invitation
City of event: Madrid, Community of Madrid, Spain
Date of event: 20/09/2013
End date: 21/09/2013
Organising entity: UCB Pharma, S.A. **Type of entity:** Business
City organizing entity: madrid, Community of Madrid, Spain
"Temas Candentes en la Enfermedad de Parkinson y Trastornos del movimiento (I): Básica". 20/09/2013.
- 22** **Title of the work:** Selective effects of dopamine depletion and L-DOPA administration on neuronal subpopulations in the dorsolateral striatum during procedural learning and habit formation.
Name of the conference: IBAGS XI
Type of event: Conference **Geographical area:** Internacional
Type of participation: 'Participatory - poster **Reasons for participation:** Open access
City of event: Eilat, Israel
Date of event: 03/03/2013
End date: 07/02/2013
Organising entity: International Basal Ganglia Association **Type of entity:** Associations and Groups
Ledia F. Hernandez; Yasuo Kubota; Dan Hu; Nune Lemaire; Mark W. Howe; Ann Graybiel. "Selective effects of dopamine depletion and L-DOPA administration on neuronal subpopulations in the dorsolateral striatum during procedural learning and habit formation."
- 23** **Title of the work:** Effects of dopamine depletion and L-DOPA administration on striatal activity are highly task-modulated during maze learning and performance.
Name of the conference: 42th Society for Neurosciences
Type of event: Conference **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
City of event: New Orleans, United States of America
Date of event: 13/10/2012
End date: 17/12/2012
Organising entity: Society for Neurosciences
City organizing entity: Washington, United States of America
L. F. HERNANDEZ; Y. KUBOTA; D. HU; N. LEMAIRE; M. W. HOWE; A. M. GRAYBIEL. "Effects of dopamine depletion and L-DOPA administration on striatal activity are highly task-modulated during maze learning and performance".
- 24** **Title of the work:** Effects of local dopamine depletion on LFP oscillations in dorsolateral striatum are task and learning dependent and are partially reversed by levodopa administration.
Name of the conference: 42th Society for Neurosciences
Type of event: Conference **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
City of event: New Orleans, United States of America
Date of event: 13/10/2012
End date: 17/10/2012
Organising entity: Society for Neurosciences
City organizing entity: Washington, United States of America



Nune Lemaire; Ledia F Hernandez; Dan Hu; Yasuo Kubota; Mark Howe; Ann Graybiel. "Effects of local dopamine depletion on LFP oscillations in dorsolateral striatum are task and learning dependent and are partially reversed by levodopa administration."

- 25** **Title of the work:** Selective effects of dopamine depletion on neuronal subpopulations in the sensorimotor striatum during procedural learning
Name of the conference: 41th Society for Neurosciences
Type of event: Conference
Type of participation: 'Participatory - poster
City of event: Washington, D.C., United States of America
Date of event: 12/11/2011
End date: 16/11/2011
Organising entity: Society for Neurosciences
City organizing entity: Washington DC, United States of America
Ledia F Hernandez; Dan Hu; Yasuo Kubota; Ann Graybiel. "Selective effects of dopamine depletion on neuronal subpopulations in the sensorimotor striatum during procedural learning."
- 26** **Title of the work:** L-DOPA modifies task-related firing patterns of projection neurons in the dopamine-depleted striatum during performance of a T-maze task
Name of the conference: 40th Society for Neurosciences
Type of event: Conference
Type of participation: 'Participatory - poster
City of event: San Diego, United States of America
Date of event: 13/11/2010
End date: 17/11/2010
Organising entity: Society for Neurosciences
City organizing entity: washington DC, United States of America
Ledia F Hernandez; Dan Hu; Yasuo Kubota; Ann Graybiel. "L-DOPA modifies task-related firing patterns of projection neurons in the dopamine-depleted striatum during performance of a T-maze task".
- 27** **Title of the work:** Dopamine depletion produces selective blockade of learning-related plasticity in firing patterns in the sensorimotor striatum of rats trained on a conditional T-maze task.
Name of the conference: 39th Society for Neuroscience
Type of event: Conference **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
City of event: Chicago, United States of America
Date of event: 17/11/2009
End date: 21/11/2009
Organising entity: Society for Neurosciences
City organizing entity: Washington DC, United States of America
Ledia F Hernandez; Dan Hu; Yasuo Kubota; Ann Graybiel. "Dopamine depletion produces selective blockade of learning-related plasticity in firing patterns in the sensorimotor striatum of rats trained on a conditional T-maze task."
- 28** **Title of the work:** Evalutaion of the Striatum-enriched genes CalDAG-GEF1 and CalDAG-GEF2 as targets for the treatment and prevention of L-DOPA induced dyskinesias
Name of the conference: 3rd Parkinson's Disease Therapeutics Conference
Type of event: Conferencia **Geographical area:** Non EU International
Type of participation: 'Participatory - poster
City of event: New York, United States of America
Date of event: 30/09/2009
End date: 30/09/2009



Organising entity: Michael J. Fox Foundation and the New York Academy of Sciences **Type of entity:** Foundation

City organizing entity: New York, United States of America

Jill Crittenden; Ledia F Hernandez; Michael Yim; Christine Keller-McGandy; David Standaert; Ann Graybiel. "Evaluation of the Striatum-enriched genes CalDAG-GEF1 and CalDAG-GEF2 as targets for the treatment and prevention of L-DOPA induced dyskinesias.". 30/09/2009.

29 Title of the work: Striatal thyrotropin releasing hormone is increased in response to chronic L-DOPA treatment in a rat model of Parkinson's Disease

Name of the conference: 37th Society for Neuroscience

Type of event: Conference

Geographical area: Non EU International

Type of participation: 'Participatory - poster

City of event: San Diego, United States of America

Date of event: 03/11/2007

End date: 07/11/2007

Organising entity: Society for Neuroscience

City organizing entity: Washington DC, United States of America

Ippolita Cantuti-Castelvetri; Esen Saka; Christine Keller-McGandy; Bernard Bouzou; Ledia F Hernandez; Jill Crittenden; Lauren Kett; Zane Hollingsworth; Tylor Clark; Ann Young; David Standaert; Ann Graybiel.

"Striatal thyrotropin releasing hormone is increased in response to chronic L-DOPA treatment in a rat model of Parkinson's Disease".

30 Title of the work: The striatal signaling molecule, CalDAG-GEF2, is upregulated in the dopamine-depleted striatum of hemi-parkinsonian rats.

Name of the conference: 37th Society for Neuroscience

Type of event: Conference

Geographical area: Non EU International

Type of participation: 'Participatory - poster

City of event: San Diego, United States of America

Date of event: 03/11/2007

End date: 07/11/2007

Organising entity: Society for Neurosciences

City organizing entity: Washington DC, United States of America

Jill Crittenden; Ippolita Cantuti-Castelvetri; Esen Saka; Ledia F Hernandez; Christine Keller-McGandy; Patricia Harlan; Lauren Kett; David Housman; Ann Young; Ann Graybiel. "The striatal signaling molecule, CalDAG-GEF2, is upregulated in the dopamine-depleted striatum of hemi-parkinsonian rats".

31 Title of the work: El tratamiento crónico con nomifensina modifica la liberación de acetilcolina en el estriado de la rata despierta

Name of the conference: Ochoa, 100 años: mirando al futuro.

Type of event: Workshop

Geographical area: National

Type of participation: 'Participatory - poster

City of event: Madrid, Community of Madrid, Spain

Date of event: 16/11/2005

End date: 16/11/2005

Organising entity: Fundación Española para la Ciencia y la Tecnología

Type of entity: Fundacion publica

City organizing entity: Madrid, Community of Madrid, Spain

Ledia F Hernandez; Gregorio Segovia; Francisco Mora. "El tratamiento crónico con nomifensina modifica la liberación de acetilcolina en el estriado de la rata despierta". 16/11/2005.



- 32** **Title of the work:** Differential effects produced by chronic treatment of a dopamine uptake inhibitor on acetylcholine concentrations in the prefrontal cortex and striatum of the awake rat.
Name of the conference: 4th Forum of Federation of European Neuroscience Societies (FENS)
Type of event: Conference **Geographical area:** European Union
Type of participation: 'Participatory - poster
City of event: Lisboa, Portugal
Date of event: 10/07/2004
End date: 14/07/2004
Organising entity: Federation of European Neuroscience Societies **Type of entity:** Sociedad
Ledia F Hernandez; Gregorio Segovia; Francisco Mora. "Differential effects produced by chronic treatment of a dopamine uptake inhibitor on acetylcholine concentrations in the prefrontal cortex and striatum of the awake rat.". En: FENS Forum Abstr.. 2, pp. A011.8.
- 33** **Title of the work:** El tratamiento crónico con Nomifensina aumentó las concentraciones extracelulares de dopamina y acetilcolina, pero no de glutamato y GABA, en el estriado de la rata despierta.
Name of the conference: X Congreso de la Sociedad Española de Neurociencia
Type of event: Conference **Geographical area:** National
Type of participation: 'Participatory - poster
City of event: Lerida, Catalonia, Spain
Date of event: 10/09/2003
End date: 15/09/2003
Organising entity: Sociedad Española de Neurociencia **Type of entity:** Sociedad Científica
City organizing entity: Madrid, Community of Madrid, Spain
Ledia F Hernandez; Gregorio Segovia; Francisco Mora. "El tratamiento crónico con Nomifensina aumentó las concentraciones extracelulares de dopamina y acetilcolina, pero no de glutamato y GABA, en el estriado de la rata despierta.". En: Revista de Neurología. 37, pp. 1139 - 1139. Catalonia (Spain): Viguera Editores, ISSN 1576-6578
- 34** **Title of the work:** Efecto de los agonistas glutamatérgicos NMDA y AMPA sobre las concentraciones de dopamina y GABA en el estriado de la rata despierta
Name of the conference: IX Congreso de la Sociedad Española de Neurociencia
Type of event: Conference **Geographical area:** National
Type of participation: 'Participatory - poster
City of event: Santiago de Compostela, Galicia, Spain
Date of event: 08/09/2001
End date: 11/09/2001
Organising entity: Sociedad Española de Neurociencia
City organizing entity: Madrid, Community of Madrid, Spain
Ledia F Hernandez; Gregorio Segovia; Francisco Mora. "Efecto de los agonistas glutamatérgicos NMDA y AMPA sobre las concentraciones de dopamina y GABA en el estriado de la rata despierta.". En: Efecto de los agonistas glutamatérgicos NMDA y AMPA sobre las concentraciones de dopamina y GABA en el estriado de la rata despierta.. 33, pp. 275 - 275. Catalonia (Spain): Viguera Editores, ISSN 1576-6578
- 35** **Title of the work:** Activation of NMDA and AMPA glutamatergic receptors increases extracellular concentration of dopamine, glutamate and GABA in the n. accumbens of the awake rat: a microdialysis study.
Name of the conference: FENS Forum of Neurosciences
Type of event: Conference **Geographical area:** European Union
Type of participation: 'Participatory - poster
City of event: Brighton, United Kingdom



Date of event: 24/06/2000

End date: 28/06/2000

Organising entity: Federation of European neuroscience Societies

Type of entity: Federacion Sociedades Cientificas

Gregorio Segovia; Ledia F Hernandez; Francisco Mora. "Activation of NMDA and AMPA glutamatergic receptors increases extracellular concentration of dopamine, glutamate and GABA in the n. accumbens of the awake rat: a microdialysis study."

36 Title of the work: Ciclo glutamato-glutamina en el estriado de la rata despierta durante el envejecimiento.

Name of the conference: XXIII Congreso de la Sociedad Española de Geriatria y Gerontología

Type of event: Conference

Geographical area: National

Type of participation: 'Participatory - poster

City of event: Barcelona, Catalonia, Spain

Date of event: 07/06/2000

End date: 10/06/2000

Organising entity: Sociedad Española de Geriatria y Gerontología **Type of entity:** Sociedad Cientifica

City organizing entity: Madrid, Community of Madrid, Spain

Gregorio Segovia; Arantxa Galindo; Tamara R Castañeda; Ledia F Hernandez; Francisco Mora. "Ciclo glutamato-glutamina en el estriado de la rata despierta durante el envejecimiento.". En: Revista Española de Geriatria y Gerontología. 35, pp. 55 - 56. Community of Madrid (Spain): elsevier, ISSN 0211-139X

37 Title of the work: Interacción glutamato-aurina en el estriado y núcleo accumbens de la rata despierta: estudio durante el proceso normal de envejecimiento.

Name of the conference: XXIII Congreso de la Sociedad Española de Geriatria y Gerontología

Type of event: Conference

Geographical area: National

Type of participation: 'Participatory - poster

City of event: Barcelona, Catalonia, Spain

Date of event: 07/06/2000

End date: 10/06/2000

Organising entity: Sociedad Española de Geriatria y Gerontología **Type of entity:** Sociedad Cientifica

City organizing entity: Madrid, Community of Madrid, Spain

Alberto del Arco; Blanca Marquez de Prado; Simon Amaro; Ledia F Hernandez; Francisco Mora. "Interacción glutamato-aurina en el estriado y núcleo accumbens de la rata despierta: estudio durante el proceso normal de envejecimiento". En: Rev. Esp. de Geriatria y Gerontología. 53, pp. 53 - 53. Community of Madrid (Spain): Elsevier,

38 Title of the work: Neurotransmisores y ritmos circadianos: estudio de glutamato, dopamina, GABA y taurina en el neostriado, núcleo accumbens y corteza prefrontal de la rata despierta.

Name of the conference: VIII Congreso de la Sociedad Española de Neurociencia

Type of event: Conference

Geographical area: National

Type of participation: 'Participatory - poster

City of event: Murcia, Region of Murcia, Spain

Date of event: 25/09/1999

End date: 29/09/1999

Organising entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA

City organizing entity: Madrid, Community of Madrid, Spain

Blanca Marquez de Prado; Arantxa Galindo; Tamara R Castañeda; Ledia Fernandez; Alberto del Arco; Gregorio Segovia; Francisco Mora. "Neurotransmisores y ritmos circadianos: estudio de glutamato, dopamina, GABA y taurina en el neostriado, núcleo accumbens y corteza prefrontal de la rata despierta.". En: Revista de Neurologia. 30, pp. 274. Catalonia (Spain): Viguera Editores, ISSN 1576-6578

- 39** **Title of the work:** Variaciones circadianas de las concentraciones extracelulares de dopamina, glutamato y GABA en el estriado de la rata despierta: efectos de la perfusión intracerebral de melatonina
Name of the conference: II Congreso Nacional de la Sociedad Española de Nutrición Básica y Aplicada.
Type of event: Conference **Geographical area:** National
Type of participation: 'Participatory - poster
City of event: Valencia, Valencian Community, Spain
Date of event: 02/12/1998
End date: 05/12/1998
Organising entity: II Congreso Nacional de la Sociedad Española de Nutrición Básica y Aplicada. **Type of entity:** Sociedad Científica
City organizing entity: Madrid, Community of Madrid, Spain
Blanca Marquez de Prado; Ledia Fernandez; Jorge Sepulveda; Arantxa Galindo; Tamara R Castañeda; Alberto del Arco; Gregorio Segovia; Francisco Mora. "Variaciones circadianas de las concentraciones extracelulares de dopamina, glutamato y GABA en el estriado de la rata despierta: efectos de la perfusión intracerebral de melatonina".

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

- 1** **Committee title:** Comité de Ética y Experimentación Animal
Affiliation entity: FUNDACION HOSPITAL MADRID
Start date: 16/01/2015
- 2** **Committee title:** Comité de Investigación y desarrollo de la Fundación HM
Affiliation entity: FUNDACION HOSPITAL MADRID
Start date: 16/01/2015

Organization of R&D activities

- 1** **Title of the activity:** Selective neuronal vulnerability in Parkinson disease: new insights from alpha-synuclein and dopaminergic vulnerability
Type of activity: Symposium
Convening entity: Mediterranean Neuroscience Society
City convening entity: Marrakech, Morocco
Start-End date: 23/06/2019 - 27/06/2019
- 2** **Title of the activity:** Modelos Experimentales y Enfermedad de Parkinson: Limitaciones y aplicaciones
Type of activity: Symposium **Geographical area:** National
City of event: Oviedo, Principality of Asturias, Spain
Convening entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA
City convening entity: Madrid, Community of Madrid, Spain
Type of participation: Organiser
Start-End date: 03/12/2012 - 27/09/2013



National and international forums and committees

- 1 Name of the forum:** Comité Ético de Experimentación Animal (CEEAA) del Centro Integral de Neurociencias AC (CINAC)
Organising entity: HM CINAC-Hospital Universitario **Type of entity:** Foundation
HM Puerta del Sur
City organizing entity: Madrid, Community of Madrid, Spain
Start date: 01/07/2015
- 2 Name of the forum:** Comité de Jóvenes Investigadores de la SENC
Organising entity: Sociedad Española de Neurociencias-SENC
Start date: 01/07/2015
- 3 Name of the forum:** Comisión Ejecutiva de I+D+i
Organising entity: Fundación de Investigación HM Hospitales
Start date: 01/06/2015

Evaluation and revision of R&D projects and articles

- 1 Performed tasks:** Review articles in scientific journals
Entity where activity was carried out: Journal of Neuroscience
Type of activity: Review of articles in scientific or technological journals
Access system: By public merit
Start date: 03/03/2015
- 2 Performed tasks:** Revision artículos científicos
Entity where activity was carried out: Neurobiology of disease
Start date: 03/03/2015
- 3 Performed tasks:** Review of articles in scientific or technological journals
Entity where activity was carried out: Frontiers in Cell Neuroscience
Type of activity: Review of articles in scientific or technological journals
Access system: By public merit
Start date: 12/01/2015
- 4 Performed tasks:** Revision artículos científicos
Entity where activity was carried out: Movement Disorders Journal_International Parkinson and Movement Disorders Society
City of entity: Milwaukee, United States of America
Type of activity: Review of articles in scientific or technological journals
Access system: By public merit **Geographical area:** Internacional
Start date: 01/10/2013
- 5 Performed tasks:** Revision artículos científicos
Entity where activity was carried out: Cerebral Cortex_Oxford University press
City of entity: New Haven, Connecticut, United States of America
Type of activity: Review of articles in scientific or technological journals
Access system: By public merit **Geographical area:** Internacional



Start date: 25/09/2013

- 6 Name of the activity:** Revisor
Performed tasks: Revision articulos científicos
Entity where activity was carried out: Neuromodulation_International Neuromodulation Society
City of entity: Malden, United States of America
Type of activity: Review of articles in scientific or technological journals
Access system: By public merit **Geographical area:** Non EU International
Start date: 06/02/2013

Other achievements

Stays in public or private R&D centres

- 1 Entity:** Centro Superior de Investigaciones Cientificas_CSIC **Type of entity:** Public Research Body
Faculty, institute or centre: Instituto Cajal_CSIC
City of entity: Madrid, Community of Madrid, Spain
Start-End date: 01/05/2013 - 01/05/2014 **Duration:** 1 year
Goals of the stay: Post-doctoral
- 2 Entity:** Massachusetts Institute of Technology **Type of entity:** University
Faculty, institute or centre: Dept. Brain and Cognitive Sciences
City of entity: Cambridge, United States of America
Start-End date: 01/10/2006 - 29/09/2011 **Duration:** 5 years
Funding entity: Fulbright-MECD **Type of entity:** State agency
Goals of the stay: Post-doctoral
Provable tasks: Electrophysiology of cortico-striatal loops and learning. Use of tetrode ensemble recording in a rat model of Parkinson's disease. Study of genetic markers of Levo-dopa induced dyskinesias (LIDs).
Relevant results: Publication of 4 papers in internationally recognized peer-review journals
- 3 Entity:** FUNDACION PARA LA INVESTIGACION MEDICA APLICADA
Faculty, institute or centre: Centro de Investigacion medica aplicada
City of entity: Pamplona, Foral Community of Navarre, Spain
Start-End date: 06/02/2006 - 06/09/2006 **Duration:** 9 months
Goals of the stay: Post-doctoral
- 4 Entity:** Karolinska Institutet **Type of entity:** University
Faculty, institute or centre: Neurosciences Department
City of entity: Estocolmo, Sweden
Start-End date: 20/08/2004 - 20/12/2004 **Duration:** 4 months
Goals of the stay: Doctorate
Provable tasks: Anatomy and function of central dopamine, noradrenalin and 5-hydroxytryptamine neurons, intercellular communication in the brain (especially volume transmission and its architecture), receptor-receptor interactions within receptor mosaics, and strategies for the treatment of Parkinson's disease, depression, schizophrenia, cocaine addiction and cannabinoid abuse.



- 5** **Entity:** Champalimaud Institute for Neurosciences **Type of entity:** Foundation
Faculty, institute or centre: Champalimaud Center for the Unknown
City of entity: Lisbon, Portugal
Start date: 25/01/2015
Goals of the stay: Post-doctoral

Obtained grants and scholarships

- 1** **Name of the grant:** MARIE SKLODOWSKA-CURIE ACTIONS: Individual Fellowship
Aims: Establecimiento
Awarding entity: European Commission
Conferral date: 01/01/2015 **Duration:** 2 years
End date: 31/12/2017
Entity where activity was carried out: FUNDACION HOSPITAL MADRID
- 2** **Name of the grant:** Travel Grant
City awarding entity: Washington, DC, United States of America
Aims: To attend 2014 Leadership Forum
Awarding entity: Parkinson's Action Network **Type of entity:** Associations and Groups
Amount of the grant: 1.350 €
Conferral date: 20/12/2013 **Duration:** 4 days
End date: 26/02/2014
Entity where activity was carried out: Parkinson's Action Network
- 3** **Name of the grant:** Bolsa de viaje de la SENC
Aims: Asistencia a 15º Congreso SENC
Awarding entity: SOCIEDAD ESPAÑOLA DE NEUROCIENCIA
Conferral date: 25/07/2013
End date: 27/09/2013
- 4** **Name of the grant:** Postdoctoral Fellowship
Aims: Post-doctoral
Awarding entity: Parkinson Disease Foundation **Type of entity:** Foundation
Conferral date: 01/11/2008 **Duration:** 1 year
End date: 31/10/2009
Entity where activity was carried out: Massachusetts Institute of Technology
Faculty, institute or centre: Dept. Brain and Cognitive Sciences
- 5** **Name of the grant:** Beca Fulbright postdoctoral
Aims: Post-doctoral
Awarding entity: Fulbright y Ministerio de Educación y Ciencia
Conferral date: 01/10/2006 **Duration:** 2 years
End date: 29/09/2008
Entity where activity was carried out: Massachusetts Institute of Technology
Faculty, institute or centre: Department of Brain and Cognitive Sciences
- 6** **Name of the grant:** Estancia breve asociada al Programa de Formacion profesorado Universitario (FPU)
Aims: Pre-doctoral
Awarding entity: Ministerio de Educacion, Cultura y Deporte **Type of entity:** State agency



Conferral date: 26/08/2004 **Duration:** 4 months
End date: 20/12/2004
Entity where activity was carried out: Karolinska Institutet
Faculty, institute or centre: Neurosciences Department

7 Name of the grant: Beca de formacion de profesorado universitario FPU
Aims: Pre-doctoral
Awarding entity: Ministerio de Educacion, Cultura y Deporte **Type of entity:** State agency
Conferral date: 01/10/2000 **Duration:** 4 years
End date: 30/09/2004
Entity where activity was carried out: Universidad Complutense de Madrid
Faculty, institute or centre: Facultad de Medicina

8 Name of the grant: Beca de Colaboración
Aims: Pre-doctoral
Awarding entity: Ministerio de Educacion, Cultura y Deporte **Type of entity:** State agency
Conferral date: 01/10/1998 **Duration:** 1 year - 8 months
End date: 30/05/1999
Entity where activity was carried out: Universidad Complutense de Madrid
Faculty, institute or centre: Facultad de Medicina

9 Name of the grant: IBRO Travel grant
Aims: Attendance to IBRO World Conference 2019
Awarding entity: IBRO-International Brain Research Organization
Conferral date: 03/04/2019

10 Name of the grant: Convocatoria de ayudas para la contratación de ayudantes de investigación y técnicos de laboratorio cofinanciadas por Fondo Social Europeo a través del Programa Operativo de Empleo Juvenil y la Iniciativa de Empleo Juvenil (YEI)
Aims: Hire a lab technician
Awarding entity: Comunidad de Madrid **Type of entity:** State agency
Conferral date: 13/12/2016 **Duration:** 2 years
Entity where activity was carried out: Fundación de Investigación HM Hospitales

Scientific societies and professional associations

1 Name of the society: Sociedad de Cientificos Retornados a España_CRE
City affiliation entity: Madrid, Community of Madrid, Spain
Professional category: Directora de Divulgación
Start-End date: 14/04/2014 - 02/12/2017

2 Name of the society: Scientista Foundation
City affiliation entity: Cambridge, Massachusetts, United States of America
Start-End date: 01/11/2013 - 01/10/2016

3 Name of the society: Graduate Women at MIT
City affiliation entity: Cambridge, United States of America
Start-End date: 01/10/2010 - 01/10/2016



- 4** **Name of the society:** Comité de Jovenes Investigadores
Affiliation entity: Sociedad Española de Neurociencia (SENC)
City affiliation entity: Madrid, Community of Madrid, Spain
Start date: 01/05/2015
- 5** **Name of the society:** Sociedad Española de Neurociencia
City affiliation entity: Madrid, Community of Madrid, Spain
Start date: 01/11/2012
- 6** **Name of the society:** National Postdoctoral Association
City affiliation entity: Washington, D.C., United States of America
Start date: 19/05/2010
- 7** **Name of the society:** International Basal Ganglia Society (IBAGS)
Start date: 01/01/2010
- 8** **Name of the society:** New York Academy of Sciences
City affiliation entity: New York, United States of America
Start date: 01/07/2009
- 9** **Name of the society:** American Association for the Advancement of Science
City affiliation entity: Washington, D.C., United States of America
Start date: 06/02/2008
- 10** **Name of the society:** Society for Neurosciences
City affiliation entity: Washington, D.C., United States of America
Start date: 01/10/2006

Co-operation networks

Name of the network: CiberNed
Participating entity/entities: Instituto de Salud Carlos III
Start date: 16/03/2009
Type of entity: Public Research Body

Prizes, mentions and distinctions

- 1** **Description:** Excellence in Science Award Winner
Awarding entity: American Association for the Advancement of Science (AAAS)
City awarding entity: Washington D.C., United States of America
Conferral date: 06/02/2008
Type of entity: Sociedad Científica
- 2** **Description:** Colaborador Honorífico
Awarding entity: Departamento de Fisiología Humana (UCM)
City awarding entity: Madrid, Community of Madrid, Spain
Conferral date: 1999
Type of entity: University



3 **Description:** Colaborador Honorífico
Awarding entity: Departamento de Fisiología Humana (UCM) **Type of entity:** University
City awarding entity: Madrid, Community of Madrid, Spain
Conferral date: 1998

Obtained accreditations/recognitions

Description: Profesor Ayudante Doctor
Accrediting entity: Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** Fundación estatal
City accrediting entity: Madrid, Community of Madrid, Spain
Date of recognition: 11/05/2012