



**Blanca Lizarbe Serra**

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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.

Dr. Blanca Lizarbe Serra develops, implements and evaluates frontier Magnetic Resonance Imaging (MRI) and Spectroscopy (MRS) approaches to investigate cerebral functions in vivo, with an emphasis in the control of global energy balance, obesity development and metabolic disorders.

Graduated in Physics (2008) and Master in Biomedical Physics (2009), in September 2009 she began her PhD at the Instituto de Investigaciones Biomédicas "Alberto Sols" (IIBm), in Madrid (CSIC/UAM), developing novel functional diffusion-weighted MRI (DWI) and MRS strategies to detect appetite-induced changes in the rodent and human brains. During this period, she collaborated with the Imperial College of London and Hammersmith Hospital, where she was a visiting PhD-student for 3 months. Through this period she proposed the astroglial coupling hypothesis as the basis of DWI changes and helped unraveling the role of dietary acetate as a central homeostatic regulator. The main results were communicated in 17 conference abstracts and 8 publications.

After earning a doctorate degree in Biophysics in October 2013, she moved to the Laboratory of Functional and Metabolic Imaging of the École Polytechnique Fédéral de Lausanne (Switzerland), remaining there until July 2018, including a 1-year leave for maternity reasons. Her postdoctoral research involved the use of enriched isotopes in combination with advanced MRS at ultra-high field (14.1T), to evaluate hypothalamic metabolism during obesity development in rodents. She showed that dietary manipulations affect the dynamics of the tricarboxylic acid and glutamate-glutamine cycles in the hypothalamus. During her postdoc, she was responsible of the technical development of MR methodologies and associated radiofrequency coils, formulation of mathematical models of brain metabolism, conception of models of energy balance and was corresponding author of the main publications. Results originated 5 publications and 14 abstracts to international conferences. She was a guest speaker at the BioSpain meeting (2014), invited-lecturer at the Cursos de Verano del Escorial (2017), and obtained a Summa Cum award from the International Society of Magnetic Resonance in Medicine (Singapur, 2016) and travel grant from International Conference on Brain Energy Metabolism 2018 (Chile).

On September 2018 she returned to the IIBm to extend her research on brain energy metabolism, focusing on the identification of MR biomarkers of obesity-induced neuroinflammation and the effects of its potential reversal. In parallel, ultrasensitive HR-MAS sequences to perform indirect <sup>13</sup>C MRS measurements of hypothalamic metabolism are being designed. In a near future, Dr. Lizarbe wants to explore the effects of obesity treatment on MR biomarkers, completing her training with application science skills to become a mature and established researcher. She has mentored the activity of two technicians, co-supervised a Final Year Bachelor Project and is currently co-director of a PhD student working on the mechanisms underlying the DWI effects during obesity and of 2 Final Year Bachelor Projects. Additionally, Dr. Lizarbe is an active member of the editorial board of Frontiers in Neurosciences, has been ad hoc reviewer for Brain Research and international meetings, and invited Lecturer at the



“Curso RMN Gabinete Formación CSIC” (2018). She has been recently accredited by the ANECA agency as “Professor Ayudante Doctor” within the area “Ciencias de la Salud”.

## 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.

**Total Number of Publications:** 17

**Publications First Decile (upper 10% JCR):** 2

**Publications First Quartile Q1 (upper 25% JCR):** 9

**Total Citations:** 618

**h-index:** 7

**i10-index:** 5

**Supervised Doctoral Thesis:** 1

**Total number of Communications:** 32 (9 Oral, 1 with Annual Summa Cum Laude Award)

**Invited Seminars, Workshops and Conferences:** 3

**Work at International Centers:** 2 (Imperial College London UK and École Polytechnique Federal Laussane CH)

### Most relevant publication metrics and quality criteria

Postdoctoral Period

- **Co-Author 1 publication in 2020:** Journal of Cerebral Blood Flow and Metabolism (IF:6.040 Endocrinology and Metabolism Q1: 17/145, Hematology Q1: 11/73, Neuroscience Q1: 30/267)
- **First & Corresponding author of 1 publication in 2019:** Frontiers in Neuroscience (IF: 3,887 Neuroscience and behaviour Q1: 62/356)
- **First Author and First Co-Author of 2 publications in 2019:** Frontiers in Neuroscience (IF 3,887, Neuroscience and behaviour Q1: 62/356) and Appetite (IF 3.5, Behavioral Sciences Q1 8/53)
- **First & Corresponding author of 3 publications in 2018:** International Journal of Obesity (IF: 5.159, Endocrinology and Metabolism Q1 23/142, Nutrition and Genetics Q1 10/83) and Magnetic Resonance in Medicine (IF 4.082, Q1 Radiology, Nuclear Medicine and Medical Imaging 19/129) and of a book chapter for Springer, all published in 2018.
- **Co-Supervisor of 1 PhD. Thesis** (Mrs. Irene Guadilla, FPI Fellow, Autonomous University Madrid 2015-2019) and **2 short-term international training periods at EPFL.**
- **Co-Supervisor of 1 Final Year Bachelor Project Biochemistry Degree** (Mr. Basilio Campillo, Autonomous University Madrid 2018-2019, awarded 9.5/10)
- **Supervisor of 2 Final Year Bachelor Projects Biochemistry Degree** (Ms. Claudia Amrmas and Ms. Celia Sánchez, Autonomous University Madrid 2019-2020)
- Accredited as "**Profesor Ayudante Doctor**" by the National Agency for Quality Assessment and Accreditation ( **ANECA**) (2019)
- **Co- Editor of e-book in 2015** "Transcellular Cycles Underlying Neurotransmission"



· **Appointed to the Editorial Board of Frontiers in Neuroscience** (<https://loop.frontiersin.org/people/246237/overview>).

#### Predoctoral Period

· **First author and co-author of 2 very high IF publications (first Decile):** Neuroimage 2013 (IF 5.45, Q1 1/14 Neuroimaging, ref. 8 in Scientific Production) and Nature Communications 2014 (IF 12,353, Q1 3/64 Multidisciplinary Sciences).

· **First author of 2 publications 2013-2015:** Frontiers in Neuroscience: Neuroenergetics, Nutrition and brain health (IF 3,887 Neuroscience and Behaviour Q1 79/346) and Neurochemical Research (IF 2.772, Neuroscience & Behaviour Q1 81/346)

In addition, Dr. Lizarbe maintains a broad network of international associations, has supported many collaborative efforts and publications, has assisted in science management tasks, and has favored an intense divulgative and docent trajectory through numerous training activities, invited conferences and scientific dissemination contributions.

**Blanca Lizarbe Serra**

Surname(s): **Lizarbe Serra**  
 Name: **Blanca**  
 ORCID: **0000-0002-5531-4088**

**Current professional situation**

**Employing entity:** CSIC **Type of entity:** State agency  
**Department:** Instituto de Investigaciones Biomédicas "Alberto Sols"  
**Professional category:** Researcher  
**Start date:** 16/09/2018  
**Type of contract:** Temporary employment contract **Dedication regime:** Full time  
**Primary (UNESCO code):** 220716 - Nuclear magnetic resonance; 230109 - Magnetic resonance spectroscopy; 240000 - Life Science  
**Secondary (UNESCO code):** 249001 - Neurophysiology  
**Tertiary (UNESCO code):** 240300 - Biochemistry  
**Performed tasks:** MRI and MRS of brain function in animal models of human diseases  
**Identify key words:** Nuclear magnetic resonance; Neurotransmitters and neuromodulators; Obesity

**Previous positions and activities**

	<b>Employing entity</b>	<b>Professional category</b>	<b>Start date</b>
<b>1</b>	Ecole Polytechnique Fédéral de Lausanne	Scientist	15/11/2013
<b>2</b>	Consejo Superior de Investigaciones Científicas	Research assistant (PhD candidate)	01/09/2009

**1** **Employing entity:** Ecole Polytechnique Fédéral de Lausanne  
**Professional category:** Scientist  
**Start-End date:** 15/11/2013 - 30/06/2018

**2** **Employing entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**Professional category:** Research assistant (PhD candidate)  
**Start-End date:** 01/09/2009 - 30/09/2013 **Duration:** 4 years - 1 month



## Education

### University education

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

- 1 **University degree:** Higher degree  
**Name of qualification:** Master in Biomedical Physics  
**Degree awarding entity:** Universidad Complutense de Madrid **Type of entity:** University  
**Date of qualification:** 01/09/2009
- 2 **University degree:** Higher degree  
**Name of qualification:** Bachelor and Master in Physics  
**Degree awarding entity:** Universitat de Barcelona **Type of entity:** University  
**Date of qualification:** 01/07/2008

#### Doctorates

**Doctorate programme:** Oficial Doctoral Program in Biophysics  
**Degree awarding entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Date of degree:** 30/10/2013

### Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

- 1 **Training title:** Animal Handling for Experimentation (2010/63/EU Functions A, and D)  
**Awarding entity:** Animalaria-Comunidad de Madrid  
**End date:** 18/02/2011 **Duration in hours:** 40 hours
- 2 **Training title:** ESMRMB Lectures on MRI:Diffusion Imaging  
**Awarding entity:** European Society Magnetic Resonance Medicine Biology (ESMRMB)  
**End date:** 10/10/2010 **Duration in hours:** 18 hours

### Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
French	C2	C2	C1	C1	B2
Catalan	C2	C2	C2	C2	C2
English	C2	C2	C2	C2	C2
Spanish	C2	C2	C2	C2	C2



## Teaching experience

### Experience supervising doctoral thesis and/or final year projects

- 1** **Project title:** Cerebral Regulation of Global Energy Balance in health and disease as detected by functional Diffusion Weighted MRI  
**Type of project:** Doctoral thesis  
**Co-director of thesis:** Blanca Lizarbe  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Irene Guadilla  
**Date of reading:** 02/06/2020
- 2** **Project title:** Early biomarkers of obesity development in the mouse brain  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Celia Sánchez Lardín  
**Date of reading:** 19/05/2020
- 3** **Project title:** MRI evaluation of obesity development  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Claudia Armas  
**Date of reading:** 18/05/2020
- 4** **Project title:** Early MRI biomarkers in mice obesity development  
**Type of project:** End of course project  
**Entity:** Universidad Autónoma de Madrid **Type of entity:** University  
**Student:** Basilio Campillo  
**Date of reading:** 28/05/2019
- 5** **Project title:** Cerebral metabolism of acetate in vivo by <sup>13</sup>C MRS  
**Type of project:** Scientific supervision of short-stay project  
**Entity:** Ecole Polytechnique Federal de Lausanne **Type of entity:** University  
**Student:** Irene Guadilla  
**Date of reading:** 08/06/2018
- 6** **Project title:** Cerebral Global Energy Metabolism as detected by MRS  
**Type of project:** Scientific supervision of short-stay project  
**Entity:** Ecole Polytechnique Federal de Lausanne **Type of entity:** University  
**Student:** Irene Guadilla  
**Date of reading:** 28/07/2017





## Student tutorials

**Name of the programme:** Teacher training

**Entity:** Universidad Autónoma de Madrid-Instituto de Investigaciones Biomédicas "Alberto Sols"

**City of entity:** Madrid, Community of Madrid, Spain

**Number of recognized hours/ECTS credits:** 6

**Number of tutored students:** 2

**Type of entity:** University Centres and Structures and Associated Bodies

## Teaching experience in courses and seminars for university teacher training

**Type of event:** Workshop

**Name of the event:** Cursos del Escorial-Universidad Complutense de Madrid

**Organising entity:** Universidad Complutense de Madrid **Type of entity:** University

**Hours of teaching:** 2

**Teaching date:** 13/07/2017

## Other activities/achievements not included above

- 1 Description of the activity:** Guest Lecturer at "Curso RMN Gabinete Formación CSIC"  
**Organising entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 03/10/2018
- 2 Description of the activity:** Collaboration with Asociación de Españoles UASP, Ecole Polytechnique Fédéral de Lausanne  
**Organising entity:** Asociación de Españoles UASP, EPFL (CH) **Type of entity:** Associations and Groups  
**End date:** 03/02/2017
- 3 Description of the activity:** Guest-Lecturer at Biospain 2014  
**Organising entity:** ASOCIACION ESPAÑOLA DE BIOEMPRESAS  
**End date:** 28/09/2014



## Scientific and technological experience

### Scientific or technological activities

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

- 1** **Name of the project:** Imagen multimodal de la respuesta terapéutica a estrategias multidiana en enfermedades neurológicas. Comunidad de Madrid S2017/BMD3688  
**Entity where project took place:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**Name principal investigator (PI, Co-PI....):** Sebastian Cerdan  
**Start-End date:** 2108 - 2021  
**Total amount:** 1.069.000 €
- 2** **Name of the project:** Papel de los centros de recompensa cerebral en la regulación del apetito detectada mediante imagen por resonancia magnética ponderada en difusión. Ministerio de Economía y Competitividad SAF2017-83043-R  
**Entity where project took place:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**Name principal investigator (PI, Co-PI....):** Sebastian Cerdan; Pilar Lopez Larrubia  
**Start-End date:** 2108 - 2021  
**Total amount:** 217.800 €
- 3** **Name of the project:** Metabolic and functional imaging of neural activation  
**Entity where project took place:** École Polytechnique Fédéral de Lausanne **Type of entity:** University  
**City of entity:** Lausanne, Switzerland  
**Name principal investigator (PI, Co-PI....):** Rolf Gruetter  
**Start-End date:** 01/11/2013 - 30/11/2017  
**Total amount:** 595.000 €
- 4** **Name of the project:** Acoplamiento neuroglial y neurovascular durante la activación general por apetito detectada mediante métodos de Resonancia Magnética  
**Entity where project took place:** Instituto de Investigaciones Biomédicas "Alberto Sols" **Type of entity:** University  
**City of entity:** Madrid, Community of Madrid, Spain  
**Name principal investigator (PI, Co-PI....):** Sebastian Cerdan Garcia-Esteller  
**Nº of researchers:** 7  
**Start-End date:** 2009 - 2011  
**Total amount:** 210.000 €

**R&D non-competitive contracts, agreements or projects with public or private entities**

**1** **Name of the project:** Investigation of hypothalamic metabolic changes during obesity development by <sup>13</sup>C MRS in vivo

**Degree of contribution:** Scientific coordinator

**Name principal investigator (PI, Co-PI....):** Rolf Gruetter; Blanca Lizarbe Serra; Hongxia Lei; Antonie Cherix

**N° of researchers:** 4

**Start date:** 01/01/2018

**Duration:** 3 years

**2** **Name of the project:** Characterization of hypothalamic inflammatory response to high fat diet administration in mice using in vivo <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy

**Degree of contribution:** Scientific coordinator

**Name principal investigator (PI, Co-PI....):** Rolf Gruetter; Blanca Lizarbe Serra; Hongxia Lei; Antoine Cherix

**N° of researchers:** 4

**Participating entity/entities:** Centre d'Imagerie Biomédical; École Polytechnique Fédéral de Lausanne

**Start date:** 19/10/2014

**Duration:** 2 years

**Scientific and technological activities****Scientific production****Publications, scientific and technical documents**

**1** Antoine Cherix; Guillaume Donati; Blanca Lizarbe; Bernard Lanz; Carole Poitry-Yamate; Hongxia Lei; Rolf Gruetter. Excitatory/inhibitory neuronal metabolic balance in mouse hippocampus upon infusion of [<sup>13</sup>C<sub>6</sub>]Glucose. Journal of Cerebral Blood Flow & Metabolism. 15/01/2020.

**Type of production:** Scientific paper

**Format:** Journal

**2** Blanca Lizarbe; Antonio Fernández-Pérez; Víctor Caz; Carlota Largo; Mario Vallejo; Pilar López-Larrubia; Sebastina Cerdan. Systemic Glucose Administration Alters Water Diffusion and Microvascular Blood Flow in Mouse Hypothalamic Nuclei. An fMRI study. Frontiers in Neuroscience. 13 - 921, 03/09/2019.

**Type of production:** Scientific paper

**Format:** Journal

**Corresponding author:** Yes

**3** Ania Benitez Sanchez del Campo; Blanca Lizarbe Serra; Irene Guadilla; Pilar López Larrubia; Luis Francisco Lago Fernández; Sebastián Cerdán García-Esteller; Manuel Sánchez Montañés. Cerebral hunger maps in rodents and humans by diffusion weighted MRI. Appetite. pp. 448 - 457. 25/06/2019.

**Type of production:** Scientific paper

**Format:** Journal

**Corresponding author:** No

**4** Blanca Lizarbe; Ana Francisca Soares; Sara Larsson; Joao M Duarte. Neurochemical modifications in the hippocampus, cortex and hypothalamus of mice exposed to long-term high-fat diet. Frontiers in Neurosciences. 12 - 985, 08/01/2019.

**Type of production:** Scientific paper

**Format:** Journal

**Corresponding author:** No



- 5** Blanca Lizarbe; Antoine Cherix; Joao Duarte; Jean-René Cardinaux; Rolf Gruetter. High-fat diet alters energy metabolism in the mouse hypothalamus. *International Journal of Obesity*. 10, Nature, 09/10/2018.  
**Type of production:** Scientific paper **Format:** Journal  
**Corresponding author:** Yes
- 6** Blanca Lizarbe Serra; Hongxia Lei; Joao M.N. Duarte; Bernard Lanz; Antonie Cherix; Rolf Gruetter. Feasibility of in vivo measurement of glucose metabolism by  $^1\text{H}$ - $^{13}\text{C}$  MRS at 14.1 T in the mouse hypothalamus. *Magnetic Resonance in Medicine*. 09/02/2018.  
**Type of production:** Scientific paper **Format:** Journal  
**Corresponding author:** Yes
- 7** Blanca Lizarbe Serra; Pilar López Larrubia; Sebastián Cerdán García-Esteller. fDWI evaluation of Hypothalamic Appetite Regulation Pathways in Mice Genetically Deficient in Leptin or Neuropeptide Y. *Neurochemical Research*. 40 - 12, pp. 2628 - 2638. Springer, 13/05/2015.  
**Type of production:** Scientific paper **Format:** Journal  
**Corresponding author:** No
- 8** Gary Frost; Michelle Sleeth; Meliz Sahuri-Arisoylu; Blanca Lizarbe Serra; Leigh Brody; Sebastián Cerdán García-Esteller; Jelena Anastassovka; Samar Hourab; Mohammed Hankir; Shuai Zhang; David Carling; Jonathan Swann; Glenn Gibson; Alexander Viardot; Douglas Morrison; E Lousie Thomas; Jimmy D Bell. The short-chain fatty acid acetate reduces appetite via a central homeostatic mechanism. *Nature Communications*. 5 - 3611, Macmilan Publishers Limited, 14/04/2014.  
**Type of production:** Scientific paper **Format:** Journal  
**Corresponding author:** No
- 9** Blanca Lizarbe Serra; Maria Tabernero; Victor Caz; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller; Carlota Largo. Orexigenic Hypothalamic Activation Determined with Functional Diffusion Weighted Imaging Differs Among Obese and Lean Animals During Fasting. *Annals of Nutrition and Metabolism*. 63, pp. 371. 01/09/2013.  
**Type of production:** Scientific paper **Format:** Journal  
**Corresponding author:** No
- 10** Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Manuel Sánchez Montañés; Luis Francisco Lago Fernández; Maria Luisa García Martín; Pilar López Larrubia; Sebastián Cerdán García-Esteller. Imaging hypothalamic activity using diffusion weighted magnetic resonance imaging in the mouse and human brain. *Neuroimage*. 64, pp. 448 - 457. Elsevier, 01/01/2013.  
**Type of production:** Scientific paper **Format:** Journal  
**Corresponding author:** No
- 11** Blanca Lizarbe; Sebastian Cerdan. El Premio Nobel de Química. Los Premios Nobel 2018. Editorial Centro de Estudios Ramón Areces, Madrid (España), 30/01/2019.  
**Type of production:** Popular science article **Format:** Book  
**Corresponding author:** No
- 12** Blanca Lizarbe Serra; Sebastian Cerdan Garcia-Esteller. Control of hypothalamic neuroendocrine interactions. *Anales de la real academia de farmacia*. 79 - 1, pp. 90 - 110. 2013.  
**Type of production:** Popular science article **Format:** Journal  
**Corresponding author:** Yes
- 13** Blanca Lizarbe Serra; Antoine Cherix; Rolf Gruetter. In vivo Heteronuclear Magnetic Resonance Spectroscopy. *Preclinical MRI Methods in Molecular Biology*. Springer, 24/01/2018.  
**Type of production:** Book chapter **Format:** Book  
**Corresponding author:** Yes



- 14** Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Gerardo Arturo Peláez Brioso; Manuel Sánchez Montañés; Pilar López Larrubia; Paloma Ballesteros; Sebastián Cerdán García-Esteller. Hypothalamic metabolic compartmentation during appetite regulation as revealed by magnetic resonance imaging and spectroscopy methods. *Frontiers in Neuroenergetics*. 5 - 6, Frontiers, 13/06/2013.  
**Type of production:** Review **Format:** Journal  
**Corresponding author:** No
- 15** Jesus Pacheco Torres; Daniel Calle; Blanca Lizarbe Serra; Viviana Negri; Carmen Ubide; Pilar Lopez Larrubia; Paloma Ballesteros; Sebastian Cerdan Garcia-Esteller. Environmentally sensitive paramagnetic and diamagnetic contrast agents for nuclear magnetic resonance imaging and spectroscopy. *Current Topics in Medicinal Chemistry*. 11 - 1, pp. 115 - 130. Bentham Science, 01/01/2011.  
**Type of production:** Review **Format:** Journal  
**Corresponding author:** No
- 16** Sebastián Cerdán García-Esteller; Blanca Lizarbe Serra. Editorial: "Transcellular Cycles Underlying Neurotransmission". *Frontiers in Nutrition*. 2 - 18, Frontiers, 29/06/2015.  
**Type of production:** Editorial **Format:** Book  
**Corresponding author:** No
- 17** Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Luis Lago; Manuel Sanchez Montañés; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller. Intelligent Image Analysis of Diffusion Weighted Data Sets: A New Tool for Functional Imaging. *Combinatorial Image Analysis Lecture Notes on Computer Science*. 6636, pp. 9 - 12. Springer, 2011.  
**Type of production:** Conference paper **Format:** Book  
**Corresponding author:** No

### Works submitted to national or international conferences

- 1** **Title of the work:** Early MRi biomarkers in mice obesity development  
**Name of the conference:** 36th Annual meeting ESMRMB  
**Corresponding author:** Yes  
**City of event:** Rotterdam, Holland  
**Date of event:** 02/10/2019  
**End date:** 05/07/2019  
**Organising entity:** ESMRMB  
 Basilio Campillo; Sebastian Cerdan; Pilar; Blanca Lizarbe.
- 2** **Title of the work:** Feasibility of the in vivo measurement of acetate metabolism by 1H-[13C] MRS at 14.1T in the mouse hypothalamus  
**Name of the conference:** Joint Annual meeting ISMRM-ESMRMB 2018  
**Corresponding author:** Yes  
**City of event:** Paris, France  
**Date of event:** 16/06/2018  
**End date:** 21/06/2018  
**Organising entity:** International Society of Magnetic Resonance in Medicine and Biology  
 Blanca Lizarbe; Irene Guadilla; Rolf Gruetter.
- 3** **Title of the work:** High fat diet alters energy metabolism on the mouse hypothalamus  
**Name of the conference:** International conference on brain energy metabolism  
**Corresponding author:** Yes



**City of event:** Valdivia, Chile

**Date of event:** 07/03/2018

**End date:** 10/03/2018

**Organising entity:** International conference on brain energy metabolism  
Blanca Lizarbe; Antonie Cherix; Joao M. N. Duarte; Rolf Gruetter.

**4 Title of the work:** Feasibility of the in vivo measurement of acetate metabolism by  $^1\text{H}$ - $^{13}\text{C}$  MRS at 14.1T in small areas of the mouse brain

**Name of the conference:** 34th Annual Scientific Meeting ESMRMB

**Corresponding author:** Yes

**City of event:** Barcelona, Catalonia, Spain

**Date of event:** 19/10/2017

**End date:** 21/10/2017

**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Irene Guadilla; Rolf Gruetter.

**5 Title of the work:** Impaired hypothalamic glucose metabolism in HFD mice. An in vivo  $^{13}\text{C}$  MRS study

**Name of the conference:** 34th Annual Scientific Meeting ESMRMB

**Corresponding author:** Yes

**City of event:** Barcelona, Catalonia, Spain

**Date of event:** 19/10/2017

**End date:** 21/10/2017

**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Antoine Cherix; Hongxia Lei; Rolf Gruetter.

**6 Title of the work:** Espectroscopiia in vivo del metabolismo cerebral

**Name of the conference:** Avances en Imagen Biomédica / Cursos de Verano de la Universidad Complutense de Madrid

**Corresponding author:** Yes

**City of event:** El Escorial, Community of Madrid, Spain

**Date of event:** 12/07/2017

**End date:** 13/07/2017

**Organising entity:** Universidad Complutense de Madrid      **Type of entity:** University

**7 Title of the work:** In vivo detection of hypothalamic glucose metabolism in HFD and regular fed mice

**Name of the conference:** Berlin Brain & Brain PET 2017

**Corresponding author:** Yes

**City of event:** Berlin, Germany

**Date of event:** 01/04/2017

**End date:** 04/04/2017

**Organising entity:** International Society for Cerebral Blood Flow and Metabolism  
Blanca Lizarbe Serra; Antonie Duarte; Hongxia Lei; Rolf Gruetter.

**8 Title of the work:** Investigating mitochondrial biomarkers and function using MRS at 14.1 Tesla in a mouse model of mood disorders

**Name of the conference:** Berlin Brain & Brain PET 2017

**Corresponding author:** No

**City of event:** Berlin, Germany

**Date of event:** 01/04/2017

**End date:** 04/04/2017



**Organising entity:** International Society for Cerebral Blood Flow and Metabolism  
Antonie Duarte; Guillaume Donati; Blanca Lizarbe Serra; Hongxia Lei; Jean-René Cardinaux; Rolf Gruetter.

**9 Title of the work:** Hepatic lipid content and composition in diet-induced metabolic dysregulation and recuperation

**Name of the conference:** European Association of Diabetes Annual Meeting

**Corresponding author:** No

**City of event:** Munich, Germany

**Date of event:** 12/09/2016

**End date:** 16/09/2016

**Organising entity:** European Association of Diabetes

Ana Francisca Soares; Joao M.N. Duarte; Blanca Lizarbe; Rolf Gruetter.

**10 Title of the work:** In vivo detection of hypothalamic glucose metabolism in HFD and regular fed mice

**Name of the conference:** ISMRM 24th Annual Meeting & Exhibition

**Corresponding author:** Yes

**City of event:** Singapore, Singapore

**Date of event:** 07/05/2016

**End date:** 13/05/2016

**Organising entity:** International Society of Magnetic Resonance in Medicine

Blanca Lizarbe Serra; Antonie Duarte; Hongxia Lei; Rolf Gruetter.

**11 Title of the work:** Long term high fat diet modifications of the neurochemical profile of the mouse hypothalamus

**Name of the conference:** ISMRM 24th Annual Meeting & Exhibition

**Corresponding author:** Yes

**City of event:** Singapore, Singapore

**Date of event:** 07/05/2016

**End date:** 13/05/2016

**Organising entity:** International Society of Magnetic Resonance in Medicine

Blanca Lizarbe Serra; Joao M.N. Duarte; Ana Francisca Soares; Rolf Gruetter.

**12 Title of the work:** In Vivo <sup>13</sup>C Spectroscopy of the Mouse Hypothalamus

**Name of the conference:** 32nd Annual Scientific Meeting ESMRMB

**Corresponding author:** Yes

**City of event:** Edinburgh, United Kingdom

**Date of event:** 01/10/2015

**End date:** 03/10/2015

**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology

Blanca Lizarbe Serra; Antonie Cherix; Hongxia Lei; Rolf Gruetter.

**13 Title of the work:** Short-term effects of high fat diet on the neurochemical profile of the mouse hypothalamus

**Name of the conference:** 32nd Annual Scientific Meeting ESMRMB

**Corresponding author:** Yes

**City of event:** Edinburgh, United Kingdom

**Date of event:** 01/10/2015

**End date:** 03/10/2015

**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology

Blanca Lizarbe Serra; Joao M.N. Duarte; Ana Francisca Soares; Hongxia Lei; Rolf Gruetter.



- 14** **Title of the work:** Imaging brain changes during obesity development and appetite regulation  
**Name of the conference:** Biospain 2014  
**Corresponding author:** Yes  
**City of event:** Santiago de Compostela, Spain  
**Date of event:** 24/09/2014  
**End date:** 26/09/2014  
**Organising entity:** Spanish Association of Biotech companies  
Blanca Lizarbe Serra.
- 15** **Title of the work:** DWI detected differential response of hypothalamic nuclei between leptin deficient and wild type mice  
**Name of the conference:** Joint Annual meeting ISMRM-ESMRMB  
**Corresponding author:** No  
**City of event:** Milan, Italy  
**Date of event:** 10/05/2014  
**End date:** 16/05/2014  
**Organising entity:** International Society of Magnetic Resonance in Medicine/European Society for Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Ana Amor Lopez; Sebastian Cerdan Garcia-Esteller; Pilar Lopez Larrubia.
- 16** **Title of the work:** Evaluation of the hypothalamic nuclei response to glucose administration by fDWI and BOLD imaging  
**Name of the conference:** 30th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Toulouse, France  
**Date of event:** 03/10/2013  
**End date:** 05/10/2013  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 17** **Title of the work:** Alx3 deficient mice exhibit hypothalamic dysfunction and altered energy expenditure  
**Name of the conference:** 49th Annual Meeting of the European Association for the Study of Diabetes (EASD)  
**Corresponding author:** No  
**Date of event:** 20/09/2013  
**End date:** 23/09/2013  
**Organising entity:** European Association for the Study of Diabetes (EASD)  
Antonio Fernandez Perez; Mercedes Mirasierra; Blanca Lizarbe Serra; Sebastian Cerdan Garcia-Esteller; Mario Vallejo.
- 18** **Title of the work:** DWI detected differential response of hypothalamic nuclei between leptin deficient and wild type mice  
**Name of the conference:** 21st Annual Meeting & Exhibition ISMRM  
**Corresponding author:** No  
**City of event:** Salt Lake City, United States of America  
**Date of event:** 20/04/2013  
**End date:** 26/04/2013  
**Organising entity:** International Society of Magnetic Resonance in Medicine  
Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.





- 19** **Title of the work:** DWI detected differential response of hypothalamic nuclei between leptin deficient and wild type mice  
**Name of the conference:** 21st Annual Meeting & Exhibition ISMRM  
**Corresponding author:** No  
**City of event:** Salt Lake City, United States of America  
**Date of event:** 20/04/2013  
**End date:** 26/04/2013  
**Organising entity:** International Society of Magnetic Resonance in Medicine  
Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 20** **Title of the work:** Neuroglial metabolic compartmentation during hypothalamic activation  
**Name of the conference:** 24th Meeting of the International Society for Neurochemistry  
**Corresponding author:** No  
**City of event:** Cancun, Mexico  
**Date of event:** 20/04/2013  
**End date:** 24/04/2103  
**Organising entity:** International Society for Neurochemistry  
Blanca Lizarbe Serra; Sebastian Cerdan Garcia-Esteller.
- 21** **Title of the work:** fMRI of hypothalamic activation by fasting in ob/ob mice using T2\* and fDWI with high and low b values. A comparative study  
**Name of the conference:** 21st Annual Meeting & Exhibition ISMRM  
**Corresponding author:** No  
**City of event:** Salt Lake City, United States of America  
**Date of event:** 20/04/2013  
**End date:** 26/04/2013  
**Organising entity:** International Society of Magnetic Resonance in Medicine  
Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 22** **Title of the work:** My appetite: A novel software tool to identify appetite disorders  
**Name of the conference:** 29th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Lisboa, Portugal  
**Date of event:** 04/10/2012  
**End date:** 06/10/2012  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Ania Benitez Sanchez del Campo; Gerardo Arturo Pelaez Briosos; Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller; Manuel Sanchez Monatñes.
- 23** **Title of the work:** fDWI reveals increased feeding impulse fasted in rats  
**Name of the conference:** 29th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Lisboa, Portugal  
**Date of event:** 04/10/2012  
**End date:** 06/10/2012  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller; Victor Caz; Maria Taberbero; Carlota Largo.



- 24** **Title of the work:** fDWI reveals reduced feeding impulse in NPY knockout mice  
**Name of the conference:** 29th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Lisboa, Portugal  
**Date of event:** 04/10/2012  
**End date:** 06/10/2012  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 25** **Title of the work:** Activation by fasting changes diffusion parameters of the hypothalamus in the adult human brain as detected by DWI  
**Name of the conference:** 20th Annual Meeting & Exhibition ISMRM  
**Corresponding author:** No  
**City of event:** Melbourne, Australia  
**Date of event:** 05/05/2012  
**End date:** 11/05/2012  
**Organising entity:** International Society of Magnetic Resonance in Medicine  
Blanca Lizarbe Serra; Maria Luisa Garcia Martin; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 26** **Title of the work:** 2-Deoxy-D-glucose mimics the effects of hypothalamic activation by fasting as detected by orthogonal measurements of water diffusion by MRI  
**Name of the conference:** 28th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Leipzig, Germany  
**Date of event:** 06/10/2011  
**End date:** 08/10/2011  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 27** **Title of the work:** Activation by fasting increases the slow diffusion parameters of the hypothalamus in the adult human brain as detected by DWI  
**Name of the conference:** 28th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Leipzig, Germany  
**Date of event:** 06/10/2011  
**End date:** 08/10/2011  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 28** **Title of the work:** Automatic classification of fed and fasted mouse brain using multivariate analysis of diffusion weighted images  
**Name of the conference:** 28th Annual Scientific Meeting ESMRMB  
**Corresponding author:** No  
**City of event:** Leipzig, Germany  
**Date of event:** 06/10/2011  
**End date:** 08/10/2011  
**Organising entity:** European Society of Magnetic Resonance in Medicine and Biology  
Ania Benitez Sanchez del Campo; Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller; Manuel Sanchez Montañes.



- 29** **Title of the work:** Intelligent Image Analysis of Difusion Wiegthed Data Sets: A New Tool for Functional Imagingypothalamus by MRI reveal cerebral activity in the fed or fasted states  
**Name of the conference:** International Workshop on Combinatorial Analysis  
**Corresponding author:** No  
**City of event:** Madrid, Spain  
**Date of event:** 23/05/2011  
**End date:** 25/05/2011  
Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Luis Lago; Manuel Sanchez Montañes; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 30** **Title of the work:** An automatic protocol to detect the fed and fasted brain using multivariate analysis of diffusion weighted data sets  
**Name of the conference:** 19th Annual Meeting & Exhibition ISMRM  
**Corresponding author:** No  
**City of event:** Montreal, Canada  
**Date of event:** 07/05/2011  
**End date:** 13/05/2011  
**Organising entity:** International Society of Magnetic Resonance in Medicine  
Ania Benitez Sanchez del Campo; Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller; Manuel Sanchez Montañés.
- 31** **Title of the work:** Orthogonal difusion measurements in the Mouse hypothalamus by MRI reveal cerebral activity in the fed or fasted states  
**Name of the conference:** 19th Annual Meeting & Exhibition ISMRM  
**Corresponding author:** No  
**City of event:** Montreal, Canada  
**Date of event:** 07/05/2011  
**End date:** 13/05/2011  
**Organising entity:** International Society of Magnetic Resonance in Medicine  
Blanca Lizarbe Serra; Ania Benitez Sanchez del Campo; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.
- 32** **Title of the work:** A protocol to detect the fed and fasted brain by discriminant analysis of diffusion weighted data sets  
**Name of the conference:** International Symposium "Multimodal imaging of the tissue microvasculature in health and disease"  
**Corresponding author:** No  
**City of event:** Madrid, Spain  
**Date of event:** 25/11/2010  
**End date:** 26/11/2010  
**Organising entity:** Instituto Investigaciones Biomedicas "Alberto Sols"  
Ania Benitez Sanchez del Campo; Blanca Lizarbe Serra; Luis Lago Fernandez; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller; Manuel Sanchez Montañés.
- 33** **Title of the work:** Orthogonal difusion measurements in the Mouse hypothalamus by MRI reveal cerebral activity in the fed or fasted states  
**Name of the conference:** 9th International Conference on Brain Energy Metabolism  
**Corresponding author:** No  
**City of event:** Budapest, Hungary  
**Date of event:** 07/07/2010  
**End date:** 10/07/2010  
**Organising entity:** 9th International Conference on Brain Energy Metabolism



Blanca Lizarbe Serra; Pilar Lopez Larrubia; Sebastian Cerdan Garcia-Esteller.

## R&D management and participation in scientific committees

### R&D management

**Name of the activity:** Imagen multimodal de la respuesta terapéutica a estrategias multidiana en enfermedades neurológicas

**Type of management:** Management of R&D&I actions and projects

**Performed tasks:** Scientific and administrative co-management of the consortium

**Start date:** 17/09/2018

## Other achievements

### Stays in public or private R&D centres

- 1 **Entity:** Ecole Polytechnique Federal de Lausanne **Type of entity:** University  
**Faculty, institute or centre:** Centre d'Imagerie Biomedicale  
**City of entity:** Lausanne, Switzerland  
**Start-End date:** 15/11/2013 - 30/06/2018  
**Goals of the stay:** Post-doctoral  
**Provable tasks:** 13C and 1H MRS of the mouse brain in vivo
- 2 **Entity:** Imperial College London **Type of entity:** University  
**Faculty, institute or centre:** Molecular and Metabolic Imaging Group  
**City of entity:** London, United Kingdom  
**Start-End date:** 30/09/2011 - 22/12/2011  
**Goals of the stay:** Guest  
**Provable tasks:** DWI of ghrelin-induced activity in mouse hypothalamus

### Obtained grants and scholarships

- 1 **Name of the grant:** Travel award International Conference on Brain Energy Metabolism (ICBEM)  
**Aims:** Travel grant  
**Awarding entity:** International Conference on Brain Energy Metabolism **Type of entity:** Associations and Groups  
**Conferral date:** 2018  
**Entity where activity was carried out:** International Conference on Brain Energy Metabolism (ICBEM)
- 2 **Name of the grant:** Travel award International Society for Magnetic Resonance in Medicine  
**Aims:** Travel award  
**Awarding entity:** International Society for Magnetic Resonance in Medicine **Type of entity:** Associations and Groups  
**Conferral date:** 2016  
**Entity where activity was carried out:** Singapore



- 3** **Name of the grant:** Travel award International Society for Magnetic Resonance in Medicine  
**Aims:** Travel award  
**Awarding entity:** International Society for Magnetic Resonance in Medicine **Type of entity:** Associations and Groups  
**Conferral date:** 2013  
**Entity where activity was carried out:** Salt Lake City
- 4** **Name of the grant:** Travel award International Society for Magnetic Resonance in Medicine  
**Aims:** Travel award  
**Awarding entity:** International Society for Magnetic Resonance in Medicine **Type of entity:** Associations and Groups  
**Conferral date:** 2011  
**Entity where activity was carried out:** Montreal
- 5** **Name of the grant:** Formación Personal Investigador (FPI)  
**Awarding entity:** Ministerio de Ciencia e Innovación (MICINN)  
**Conferral date:** 01/09/2009 **Duration:** 4 years  
**Entity where activity was carried out:** Consejo Superior de Investigaciones Científicas  
**Faculty, institute or centre:** Instituto de Investigaciones Científicas "Alberto Sols"

### Editorial councils

- 1** **Name of the editorial council:** Editorial Advisory Board Frontiers in Neuroscience: Neuroenergetics, Nutrition and Brain Health  
**Affiliation entity:** Frontiers **Type of entity:** Business  
**Start date:** 17/12/2018
- 2** **Name of the editorial council:** Ad hoc reviewer of Brain Research  
**Affiliation entity:** Elsevier

### Prizes, mentions and distinctions

**Description:** Summa Cum Laude for Oral Communication Paper  
**Awarding entity:** International Society of Magnetic Resonance In Medicine  
**City awarding entity:** Singapore, Singapore  
**Conferral date:** 09/05/2016

### Obtained accreditations/recognitions

**Description:** Profesor Ayudante Doctor  
**Accrediting entity:** Agencia Nacional de Evaluación de la Calidad y Acreditación **Type of entity:** ANECA  
**Date of recognition:** 29/11/2019