



INSTITUTO DE  
NEUROCIENCIAS  
CASTILLA Y LEÓN



**UBICACIÓN/LOCATION:**

Laboratorio 2 del INCYL

**NOMBRE DEL LABORATORIO/GRUPO; RESEARCH GROUP NAME/ACRONYMS:**

Audición Computacional y Psicoacústica

**BREVE DESCRIPCIÓN DE LA LÍNEA DE INVESTIGACIÓN/ RESEARCH LINE**

Audición humana. Hipoacusia y sordera. Audífonos e implantes auditivos.

**INVESTIGADOR RESPONSABLE O PRINCIPAL DEL GRUPO/GROUP TEAM LEADER**

Dr. Enrique A. López-Poveda

**PERSONAL ADSCRITO/ GROUP MEMBERS**

(indicar nombre completo y cargo o puesto que ocupa):

José L. Blanco  
(Investigador colaborador, Oticon España)

Almudena Eustaquio Martín  
(Investigadora Senior, Contrato Art. 83 MED-EL)

José Manuel Gorospe Arocena  
(Investigador colaborador, Complejo Asistencial Universitario de Salamanca)

Alejandro Hernández Martín  
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Milagros Jerónimo Fumero  
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Dr. Peter T. Johannesen  
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Dr. Thibaud Leclere  
(Investigador postdoctoral, Contrato Art. 83 Oticon Medical)

Miriam I. Marrufo Pérez  
(Investigador predoctoral, Beca Banco Santander-USAL)

### **PROYECTOS VIGENTES/ON-GOING RESEARCH PROJECTS**

(indicar nombre completo, referencia, Investigador principal, financiación y periodo):

1. "Computational models for predicting individualized cochlear-implant outcomes to arbitrary electrical stimulation patterns". Oticon Foundation (Dinamarca). 01/06/19-31/05/21. Investigador principal: Enrique A. Lopez-Poveda.
2. "Mathematical predictors and patient variability in cochlear implants". Oticon Medical (France). 01/06/18-31/07/19. 74,160.00 EUR. Investigador principal: Enrique A. Lopez-Poveda.
3. "Pérdida auditiva oculta y sinaptopatía coclear: Estudio multidisciplinario de modelos animales, diagnóstico clínico, y compensación mediante audífonos." Consejería de Sanidad de Castilla y León. Ref. SA023P17. 01/01/17-31/12/18. Investigador principal: Manuel S. Malmierca.
4. "Mimicking the unmasking benefits of the contralateral medial-olivocochlear reflex in cochlear implants." MED-EL GmbH (Austria). 30/6/16-29/06/2019. Investigador principal: Enrique A. Lopez-Poveda.
5. "Roles of the contralateral medial olivocochlear reflex in human hearing". Ministerio de Economía y Competitividad (Spain). Ref. BFU2015-65376-P. 01/01/2016-31/12/2019. Investigador principal: Enrique A. Lopez-Poveda.

### **PUBLICACIONES/PUBLICATIONS**

(indicar hasta un máximo de las 10 publicaciones más significativas):

1. Johannesen PT, Buzo BC, Lopez-Poveda EA. (2019). Evidence for age-related cochlear synaptopathy unconnected to speech-in-noise intelligibility deficits. *Hearing Research* 374:35-48. <https://doi.org/10.1016/j.heares.2019.01.017>
2. Lopez-Poveda EA, Eustaquio-Martín A. (2018). Objective speech transmission improvements with a binaural cochlear implant sound-coding strategy inspired by the contralateral medial olivocochlear reflex. *J. Acoust. Soc. Am.* 143:2217-2231. <http://doi.org/10.1121/1.5031028>
3. Marrufo-Pérez MI, Eustaquio-Martín A, Lopez-Poveda EA. (2018). Adaptation to noise in human speech recognition unrelated to the medial olivocochlear reflex. *Journal of Neuroscience* 38(17):4138-4145. <http://doi.org/10.1523/JNEUROSCI.0024-18.2018>
4. Lopez-Poveda EA. (2018). Olivocochlear efferents in animals and humans: From anatomy to clinical relevance. *Frontiers in Neurology* 9:197. <http://doi.org/10.3389/fneur.2018.00197>
5. Lopez-Poveda EA, Johannesen PT, Pérez-González P, Blanco JL, Kalluri S, Edwards B. (2017). Predictors of hearing aid outcomes. *Trends in Hearing* 21:1-28. <http://doi.org/10.1177/2331216517730526>

6. Lopez-Poveda EA, Eustaquio-Martín, A, Stohl JS, Wolford RD, Schatzer R, Gorospe JM, Santa Cruz Ruiz S, Benito F, Wilson BS (2017). Intelligibility in speech maskers with a binaural cochlear implant sound coding strategy inspired by the contralateral medial olivocochlear reflex. *Hearing Research* 348:134-137. <http://doi.org/10.1016/j.heares.2017.02.003>
7. Lopez-Poveda EA, Eustaquio-Martin, A, Stohl JS, Wolford RD, Schatzer R, Wilson BS. (2016). A bilateral sound coding strategy inspired by the contralateral medial olivocochlear reflex. *Ear & Hearing* 37:e138-e148. <http://doi.org/10.1097/AUD.0000000000000273>
8. Johannesen PT, Pérez-González P, Kalluri S, Blanco JL, Lopez-Poveda EA. (2016). The influence of cochlear mechanical dysfunction, temporal processing deficits, and age on the intelligibility of audible speech in noise by hearing-impaired listeners. *Trends in Hearing* 20:1-14. <http://doi.org/10.1177/2331216516641055>
9. Lopez-Poveda EA (2014). Why do I hear but not understand? Stochastic undersampling as a model of degraded neural encoding of speech. *Front. Neurosci.* 8:348. <http://doi.org/10.3389/fnins.2014.00348>
10. Lopez-Poveda EA, Barrios P (2013). "Perception of stochastically undersampled sound waveforms: A model of auditory deafferentation," *Front. Neurosci.* 7:124. <http://doi.org/10.3389/fnins.2013.00124>

## PATENTES

11. Lopez-Poveda EA. "Sound enhancement system for cochlear implants." Patent application n°: EP14167487. Priority date: 08/05/14. European Patent Office. PCT number: PCT/EP2015/059230. Extended to the European Union, United States of America, China and Australia.
12. Lopez-Poveda EA. "Medial olivocochlear reflex sound coding with bandwidth normalization". US Patent application n°: 62/525902. Priority date: 28/06/2017.

