Curriculum Vitae

Alberto Recio Spinoso

PERSONAL DATA

First name:	Alberto	*Family name:*	Recio Spinoso
Spanish ID No.:	49907484Z	*Nationalities:*	Spanish and Mexican

CURRENT POSITION

Position:	Scientist
Responsibilities:	Director of the Laboratory for Auditory Neuroengineering
Employer:	Fundación Parque Científico y Tecnológico de Castilla-La Mancha
Faculty, School, or Institute:	Instituto de Investigación en Discapacidades Neurológicas, Universidad de Castilla-La Mancha
Address:	Calle Almansa 14, 02006 Albacete, Spain.
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Fax:	(+34) 967 599 327
E-mail:	alberto.recio@uclm.es
Date of start:	19/04/2010
Web site:	https://scholar.google.com/citations?user=sBpBoPwAAAAJ&hl=en&oi=ao

RESEARCH INTERESTS

Auditory Neuroscience. Cochlear mechanics. Auditory brainstem physiology. Speech processing.

ACADEMIC DEGREES

1987-1993	**Ph.D.** University of Minnesota, Minneapolis, Minnesota, USA.
1984-1987	**M.Sc.** Electrical Engineering. University of Minnesota, Minneapolis, Minnesota, USA.
1977-1981	**B.Sc.** Computer Engineering. Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM). Monterrey, Mexico.

PREVIOUS SCIENTIFIC OR PROFESSIONAL ACTIVITIES

Sept. 1981-Jun. 1983	**Programmer.** Computer Center. ITESM (Monterrey, Mexico).
Aug. 1983-June 1984	**Trainee.** Communication Research Centre (Ottawa, Ontario, Canada).

Jan. 1985-June 1985	**Teaching assistant.** Dept. of Electrical Engineering. University of Minnesota (Minneapolis, Minnesota, USA).
Jan. 1986-Dec. 2003	**Research Assistant.** Dept. of Otolaringology. University of Minnesota (Minneapolis, Minnesota, USA).
Jan. 1994 - Apr. 1997	**Postdoctoral fellow**. School of Communication. Northwestern University (Evanston, Illinois, USA).
May 1997 – Aug. 2005	**Research scientist**. Medical School. University of Wisconsin (Madison, Wisconsin, USA).
Sept.2005 – Jan. 2010	**Senior Researcher.** Otolaringology Dept. Leiden University Medical Center (Leiden, The Netherlands).

LANGUAGES

Spanish	Native language
English	Fluent

INDICATORS OF RESEARCH VALUE

Number of citations	**2070** (Ref.: Google Scholar)
h index	**20** (Ref.: Google Scholar)
Average number of citations per year (2012-2016)	**118** (Ref.: Google Scholar)
Average number of citations per paper	**59.14** in peer-reviewed journals and book chapters (Ref. Google Scholar)
Percentage of publications on Q1	**85.18%** (23/27, Ref.: Web of Science) in peer-reviewed journals.
Percentage of publications on first decile	**25.9%** (7/27, Ref.: Web of Science) in peer-reviewed journals.

SCIENTIFIC PUBLICATIONS AND TECHNICAL DOCUMENTS

Journal (peer-reviewed) articles (Number of citations: 1899)

1. **Recio-Spinoso A***, Rhode WS (2015). Fast waves at the base of the cochlea. PLoS One. 10(6) e0129556. DOI: http://dx.doi.org/10.1371/journal.pone.0129556. (Impact Factor= 3.057. First quartile, Rank= 11/63. Category= Science edition – Multidisciplinary sciences. Number of citations: 3)
2. **Recio-Spinoso A***, Joris PX (2014). Temporal properties of responses to sound in the ventral nucleus of the lateral lemniscus. J. Neurophysiol. 111(4), 817-835. DOI: http://dx.doi.org/10.1152/jn.00971.2011. (Impact Factor= 2.887, Second quartile, Rank=29/83, Category= Science edition – Physiology. Number of citations=8)
3. **Recio-Spinoso A***, Cooper NP (2013). Masking of sounds by a background noise–cochlear mechanical correlates. J. Physiol.-London 591(10): 2705 – 2721. DOI: http://dx.doi.org/10.1113/jphysiol.2012.248260. (Impact Factor= 4.544. First quartile, Rank= 11/80. Category= Science Edition - PHYSIOLOGY. Number of citations: 5)

4. **Recio-Spinoso A*** (2012). Enhancement and distortion in the temporal representation of sounds in the ventral cochlear nucleus of chinchillas and cats. PLoS One. 7(9) e44286. DOI: http://dx.doi.org/10.1371/journal.pone.0044286. (Impact Factor= 3.73. First quartile, Rank= 7/56. Category= Science edition – Multidisciplinary sciences. Number of citations: 7)

5. Temchin AN, **Recio-Spinoso A**, Cai H, Ruggero MA (2012). Traveling waves on the organ of Corti of the chinchilla cochlea: spatial trajectories of inner hair cell depolarization inferred from responses of auditory-nerve fibers. J. Neurosci. 32(31): 10522-10529. DOI: http://dx.doi.org/10.1523/JNEUROSCI.1138-12.2012. (Impact Factor= 6.908. First quartile, Rank= 22/252. Category= Science edition – Neurosciences. Number of citations: 14)

6. **Recio-Spinoso A**, Fan J-H, Ruggero MA (2011). Basilar-membrane responses to broadband noise modeled using linear filters with rational transfer functions. IEEE Trans. Biomed. Eng. 58(5): 1456-1465. DOI: http://dx.doi.org/10.1109/TBME.2010.2052254. (Impact Factor= 2.278. Second quartile, Rank= 22/72. Category= Science edition – Biomedical engineering. Number of citations: 12)

7. Temchin AN, **Recio-Spinoso A**, Ruggero MA (2011). Timing of cochlear responses inferred from frequency-threshold tuning curves of auditory-nerve fibers. Hear. Res. 271(1): 178:186. DOI: http://dx.doi.org/10.1016/j.heares.2010.10.002. (Impact Factor= 2.696. First quartile, Rank= 2/41. Category= Science edition – Otorhinolaryngology. Number of citations: 9)

8. Rhode WS, Roth GL, **Recio-Spinoso A** (2010). Response properties of cochlear nucleus neurons in monkeys. Hear. Res. 259(1): 1-15. DOI: http://dx.doi.org/10.1016/j.heares.2009.06.004. (Impact Factor= 2.428. First quartile, Rank= 2/41. Category= Science edition – Otorhinolaryngology. Number of citations: 14)

9. **Recio-Spinoso A**, Nayaran SS, Ruggero MA (2009). Basilar membrane responses to noise at a basal site of the chinchilla cochlea: quasi-linear filtering. JARO 10(4): 471-484. DOI: http://dx.doi.org/10.1007/s10162-009-0172-0. (Impact Factor= 2.436. First quartile, Rank= 1/36. Category= Science edition – Otorhinolaryngology. Number of citations: 19)

10. **Recio-Spinoso A***, van Dijk P (2006). Analysis of responses to noise in the ventral cochlear nucleus using Wiener kernels. Hear. Res. 216: 7-18. DOI: http://dx.doi.org/10.1016/j.heares.2006.03.003 (Impact Factor= 1.584. First quartile, Rank= 7/30. Category= Science edition – Otorhinolaryngology. Number of citations: 6)

11. Joris PX, van de Sande B, **Recio-Spinoso A**, van der Heijden M (2006). Auditory midbrain and nerve responses to sinusoidal variations in interaural correlation. J. Neurosci. 26(1): 279 – 289. DOI: http://dx.doi.org/10.1523/JNEUROSCI.2285-05.2006. (Impact Factor= 7.453. First quartile, Rank= 15/200. Category= Science edition – Neurosciences. Number of citations: 34)

12. **Recio-Spinoso A**, Temchin AN, van Dijk P, Fan J-H, Ruggero MA (2005). Wiener-kernel analysis of responses to noise of chinchilla auditory-nerve fibers. J. Neurophysiol. 93(6): 3615-3634. DOI: http://dx.doi.org/10.1152/jn.00882.2004. (Impact Factor= 3.853, First quartile, Rank=16/75, Category= Science edition – Physiology. Number of citations=94)

13. Siegel JH, Cerka AJ, **Recio-Spinoso A**, Temchin AN, van Dijk P, Ruggero MA (2005). Delays of stimulus-frequency otoacoustic emissions and cochlear vibrations contradict the theory of coherent reflection filtering. J. Acoust. Soc. Am. 118(4): 2434-2443. DOI: http://dx.doi.org/10.1121/1.2005867. (Impact Factor= 1.677, First quartile, Rank=6/27, Category= Science edition – Acoustics. Number of citations=118)

14. Temchin AN, **Recio-Spinoso A**, van Dijk P, Ruggero MA (2005). Wiener kernels of chinchilla auditory-nerve fibers: verification using responses to tones, clicks, and noise and comparison with basilar-membrane vibrations. J. Neurophysiol. 93(6): 3635-3648. DOI: http://dx.doi.org/ 10.1152/jn.00885.2004. (Impact Factor= 3.853, First quartile, Rank=16/75, Category= Science edition – Physiology. Number of citations=44)

15. **Recio A***, Rhode WS, Kiefte, M, Kluender KR (2002). Responses to cochlear normalized speech stimuli in the auditory nerve of cat. J. Acoust. Soc. Am. 111(5): 2213-2218. DOI: http://dx.doi.org/10.1121/1.1468878. (Impact Factor= 1.310, First quartile, Rank=5/28, Category= Science edition – Acoustics. Number of citations=21)

16. Rhode WS, **Recio A** (2001). Multicomponent stimulus interactions observed in basilar-membrane vibration in the basal region of the chinchilla cochlea. J. Acoust. Soc. Am.110(6): 2024-2033. DOI: http://dx.doi.org/10.1121/1.1416198. (Impact Factor= 1.440, First quartile, Rank=4/27, Category= Science edition – Acoustics. Number of citations=24)

17. **Recio A*** (2001). Representation of harmonic complex stimuli in the ventral cochlear nucleus of the chinchilla. J. Acoust. Soc. Am.110(4): 3140-3154. DOI: http://dx.doi.org/10.1121/1.1397356. (Impact Factor= 1.440, First quartile, Rank=4/27, Category= Science edition – Acoustics. Number of citations=5)

18. Rhode WS, **Recio A** (2001). Basilar-membrane response to multicomponent stimuli in chinchilla. J. Acoust. Soc. Am.110(2): 981-994. DOI: http://dx.doi.org/10.1121/1.1377050. (Impact Factor= 1.440, First quartile, Rank=4/27, Category= Science edition – Acoustics. Number of citations=22)
19. **Recio A***, Rhode WS (2000). Basilar membrane responses to broadband stimuli. J. Acoust. Soc. Am.108(5): 2281-2298. DOI: http://dx.doi.org/ 10.1121/1.1318898. (Impact Factor= 1.366, First quartile, Rank=5/27, Category= Science edition – Acoustics. Number of citations=107)
20. **Recio A***, Rhode WS (2000). Representation of vowel stimuli in the ventral cochlear nucleus of the chinchilla. Hear. Res. 146(1): 167-184. DOI: http://dx.doi.org/10.1016/S0378-5955(00)00111-8. (Impact Factor= 1.753, First quartile, Rank=3/29, Category= Science edition – Otorhinolaryngology. Number of citations=23)
21. Rhode WS, **Recio A** (2000). Study of mechanical motions in the basal region of the chinchilla cochlea. J. Acoust. Soc. Am.107(6): 3317-3332. DOI: http://dx.doi.org/10.1121/1.429404. (Impact Factor= 1.366, First quartile, Rank=5/27, Category= Science edition – Acoustics. Number of citations=147)
22. Ruggero MA, Narayan SS, Temchin AN, **Recio A** (2000). Mechanical bases of frequency tuning and neural excitation at the base of the cochlea: comparison of basilar-membrane vibrations and auditory-nerve-fiber responses in chinchilla. Proc. Natl. Acad. Sci. U. S. A. 97(22): 11744-11750. DOI: http://dx.doi.org/10.1073/pnas.97.22.11744. (Impact Factor= 10.789. First quartile, Rank= 3/49. Category= Science edition – Multidisciplinary sciences. Number of citations: 103)
23. **Recio A**, Rich NC, Narayan SS, Ruggero MA (1998). Basilar-membrane responses to clicks at the base of the chinchilla cochlea. J. Acoust. Soc. Am. 103(4): 1972-1989. DOI: http://dx.doi.org/10.1121/1.421377. (Impact Factor= 1.213, First quartile, Rank=3/25, Category= Science edition – Acoustics. Number of citations=164)
24. Narayan SS, Temchin AN, **Recio A**, Ruggero MA (1998). Frequency tuning of basilar membrane and auditory nerve fibers in the same cochleae. Science 282(5395): 1882-1884. DOI: http://dx.doi.org/10.1126/science.282.5395.1882. (Impact Factor= 24.386. First quartile, Rank= 2/62. Category= Science edition – Multidisciplinary sciences. Number of citations: 154)
25. Ruggero MA, Rich NC, **Recio A**, Narayan SS, Robles L (1997). Basilar-membrane responses to tones at the base of the chinchilla cochlea. J. Acoust. Soc. Am.101(4): 2151-2163. DOI: http://dx.doi.org/10.1121/1.418265. (Impact Factor= 1.166, First quartile, Rank=5/20, Category= Science edition – Acoustics. Number of citations=623)
26. Ruggero MA, Rich NC, **Recio A** (1996). The effect of intense acoustic stimulation on basilar-membrane vibrations. Auditory Neurosci. 2:329-345. (Number of citations: 58).
27. Ruggero MA, Robles L, Rich NC, Recio A (1992). Basilar membrane responses to two-tone and broadband stimuli. Philos. Trans. R. Soc. Lond. Ser. B-Biol. Sci. 33(1278): 307-315. DOI: http://dx.doi.org/10.1098/rstb.1992.0063. (Number of citations=61)

Book chapters **(Number of citations: 171)**

1. **Recio-Spinoso A*,** Temchin AN, Ruggero MA (2015). Effects on auditory-nerve fibers of opening the otic capsule at the apex of the chinchilla cochlea. In *Mechanics of hearing: protein to perception*, KD Karavitaki and DP Corey (Eds.). American Institute of Physics. DOI: http://dx.doi.org/10.1063/1.4939341. ISBN: 978-0-7354-1350-4.
2. **Recio-Spinoso A***, Lopez-Poveda EA (2010). Basilar membrane responses to simultaneous presentations of white noise and a single tone. In *The Neurophysiological Bases of Auditory Perception.* Lopez-Poveda EA, Meddis R, Palmer AR (Eds.). pp. 15-23. Springer-Verlag, New York. ISBN: 978-1-4419-5686-6 (Number of citations=8)
3. Rhode WS, **Recio A** (2003). Cochlear mechanical distortion products from complex stimuli in the chinchilla basal region. *In Biophysics of the Cochlea: from Molecules to Models.* Gummer AW (Ed.). World Scientific, New Jersey. pp. 220 – 227. DOI: http://dx.doi.org/10.1142/9789812704931_0032. ISBN: 978-981-238-304-4.
4. **Recio A***, Narayan SS, Ruggero MA (1996). Wiener-kernel analysis of basilar-membrane responses to white noise. In *Diversity in Auditory Mechanics*, Lewis ER, Long GR, Leake PA, Narins PM, and Steele CR (Eds.). World Scientific, Singapore. pp. 325-331. ISBN: 9810227124. (Number of citations=23)
5. Ruggero MA, Rich NC, Robles L, **Recio A**. (1996). The effects of acoustic trauma, other cochlear injury and death on basilar-membrane responses to sound. In *Scientific Basis of Noise Induced Hearing Loss*. Axellson A, Borchgrevink H, Henderson D, Hamernik RP, Salvi R. Thieme Medical Publishers, Stuttgart. pp. 325-331. ISBN: 978-3131026811. (Number of citations= 51)

6. Ruggero MA, Rich NC, **Recio A** (1993). Alteration of basilar membrane responses to sound by acoustic overstimulation. In *Biophysics of Hair Cell Sensory Systems*. Duifhuis H, Horst JW, van Dijk P, van Netten SM. World Scientific Publishing, Singapore. pp. 258 – 264. ISBN: 978-981-4552-55-4. (Number of citations= 34)
7. Ruggero MA, Rich NC, **Recio A** (1992). Basilar membrane responses to clicks. In *Auditory Physiology and Perception*. Cazals Y, Demany L, Horner K, Pergamon Press, London. pp. 85-91. DOI: http://dx.doi.org/10.1016/B978-0-08-041847-6.50015-0. ISBN: 978-0-08-041847-6. (Number of citations=40)
8. Viemeister NF, Shivapuja BG, **Recio A** (1992). Physiological correlates of temporal integration. In *Auditory Physiology and Perception*. Cazals Y, Demany L, Horner K, Pergamon Press, London. pp. 323– 330. DOI: http://dx.doi.org/10.1016/B978-0-08-041847-6.50042-3. ISBN: 978-0-08-041847-6. (Number of citations=15)

Articles submitted for publications

1. **Recio-Spinoso A**, Oghalai JS (2016). Mechanical tuning and amplification within the apex of the guinea pig cochlea. Submitted for publication to J. Physiol.-London.
2. **Recio-Spinoso A***, Oghalai JS (2016). Differences between mechanical and neural tunings at the apex of the intact guinea pig cochlea. Submitted to the Mechanics of Hearing Meeting 2017.

RESEARCH GRANTS AS PRINCIPAL INVESTIGATOR

Project title:	Estimulación eléctrica de las vías auditivas (PPII-2014-012-P).
Funding body:	Junta de Comunidades de Castilla-La Mancha (Spain).
Duration:	Sept. 2014-Sept. 2017
Amount:	90.000,00 EUROS

Project title:	Peripheral mechanisms of hearing (UCTR130258).
Funding body:	Subcontract (Article 83) to National Institutes of Health grant R01 DC000419 (USA)
Duration:	2013-2016
Amount :	23.192,65 EUROS

Project title:	Laser Interferometer setup for in vivo cochlear-mechanical measurements. (CO-PI).
Funding body:	Netherlands Organization for Scientific Research (NWO).
Duration:	2010
Amount:	123.000,00 EUROS

ACADEMIC ACTIVITIES - MEMBERSHIP IN EXAMINING COMMITTEES

- Ph. D. final examination. Ana Alves Pinto Lopes Silva. University of Salamanca, Spain. June 2007.
- Ph. D. final examination. Peter T. Johannesen. University of Salamanca, Spain. November 2013.
- Ph. D. final examination. Joaquín Tomás Valderrama Valenzuela. University of Granada, Spain. November 2014.

ACADEMIC ACTIVITIES - TEACHING

- Undergraduate courses in electrical circuits, electronics and digital systems (in Spanish). 1981-1983. Dept. of Electrical Engineering. ITESM, Monterrey, Mexico.
- Lecturer of the international degree Audiology Expert, University of Salamanca, 2006-present.

- Graduate level course in pattern recognition (in Spanish). Dec. 2016-Jan. 2017. Maestría en Sistemas Computacionales. Instituto Tecnológico Superior de Misantla. Misantla, Mexico.

ON-SITE COLLABORATIONS ABROAD

2002 Visiting professor. Katholieke Universiteit Leuven (Belgium). Duration: 3 months.
2004 Visiting professor. Katholieke Universiteit Leuven (Belgium). Duration: 3 months.
2010 Short-term scholar. Northwestern University (USA). Duration: 1.5 months.
2010 Short-term scholar. Northwestern University (USA). Duration: 1 month.
2011 Short-term scholar. Northwestern University (USA). Duration: 1 month.
2012 Short-term scholar. Northwestern University (USA). Duration: 1 month.
2013 Short-term scholar. Northwestern University (USA). Duration: 1 month.
2014 Short-term scholar. Northwestern University (USA). Duration: 1 month.
2015 Short-term scholar. Northwestern University (USA). Duration: 1 month.
2016 Short-term scholar. Northwestern University (USA). Duration: 1 month.

AD-HOC JOURNAL REVIEWING

- European Journal of Neuroscience
- Hearing Research
- Journal of the Acoustical Society of America
- Journal of the Association for Research in Otolaryngology
- Journal of Neurophysiology
- Proceedings of the National Academy of Sciences.

AWARDS AND MERITS

- *1983-1984*. Consejo Nacional de Ciencia y Tecnología Fellowship (Mexico)
- *2002*. Human Frontier Science Program (France) Short-Term Fellowship
- *2002* and *2004*. Katholieke Universiteit Leuven Fellowship (Belgium)
- *2014-2016*. Member of the *Sistema Nacional de Investigadores* Level 1, Consejo Nacional de Ciencia y Tecnología (Mexico)
- *2017-2020*. Member of the *Sistema Nacional de Investigadores* Level 1, Consejo Nacional de Ciencia y Tecnología (Mexico)