

CURRICULUM VITAE FORMAT
University of Pittsburgh
School of Medicine

BIOGRAPHICAL

Name: María Eulalia Rubio-Valero

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EDUCATION and TRAINING

UNDERGRADUATE:

<i>Dates Attended of Institution</i>	<i>Name and Location and Year</i>	<i>Degree Received</i>	<i>Major Subject</i>
1980-1984	Inst. Miguel Hernandez Villena, Alicante (Spain)	B.S. 1984	Sciences

GRADUATE:

<i>Dates Attended of Institution</i>	<i>Name and Location and Year</i>	<i>Degree Received and year</i>	<i>Major Subject</i>
1984 - 1990	Univ. Alicante School of Medicine, Alicante, Spain	M.D. 1990	Medicine and Surgery
1988 - 1990	Univ. Alicante School of Medicine, Alicante, Spain	M.S. 1990	Neuroscience
1991 - 1994	Univ. Alicante School of Medicine, Inst. of Neuroscience Alicante, Spain	Ph.D. 1994	Neuroscience

POSTGRADUATE:

<i>Dates Attended</i>	<i>Name and Location</i>	<i>Degree Received</i>	<i>Major Subject</i>
Jan. 1995 –Jul. 1999	National Institute on Deafness and other Communication Disorders (NIDCD) National Institutes of Health (NIH). Bethesda, MD. USA	Fogarty Postdoctoral Fellow	Neuroscience: Glutamate receptor targeting and interacting proteins Mentor: Robert J. Wenthold
August 1999 – Jul. 2001	Dept. Molecular Biology of Neuronal Signals. Max Planck Institute for Experimental Medicine /Alexander von Humboldt Foundation. Göttingen, Germany	Alexander von Humboldt Fellow (Senior Postdoc)	Neuroscience: Localization of P2X ATP receptors and EAG potassium channels Mentor: Walter Stühmer

APPOINTMENTS and POSITIONS

ACADEMIC:

10/1/90 – 12/31/97 **Lecturer** (Profesor Ayudante) of the Department of Histology, Inst. of Neuroscience, Univ. of Alicante, Alicante, Spain.

8/23/01 – 07/31/07 **Assistant Professor in tenure track** of the Department of Physiology and Neurobiology of the Univ. of Connecticut, Storrs, CT, USA.

8/1/07 – 11/30/09 **Associate Professor with tenure** of the Department of Physiology and Neurobiology Univ. of Connecticut, Storrs, CT, USA.

5/15/09 – 08/15/09 **Visiting Scientist** of the Division of Cerebral Structure, National Institute for Physiological Sciences; Okazaki, Aichi, Japan.

12/1/09 – 1/31/11 **Visiting Associate Professor** of Otolaryngology, Univ. of Pittsburgh, Pittsburgh, PA, USA.

1/1/11 – 6/30/17 **Associate Professor** of Otolaryngology (awarded tenure 4/1/14), Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; USA.

2/1/11 – 2/31/15 **Associate Professor** of Neurobiology, secondary appointment, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; USA.

7/1/17 –9/30/2020; **Associate Professor (tenured)** of Neurobiology; Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; USA.

7/1/17 – 9/30/2020; **Associate Professor** of Otolaryngology, secondary appointment, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; USA.

10/1/2020 – present; **Full Professor (tenured)** of Neurobiology; Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; USA.

10/1/2020 – present; **Full Professor** of Otolaryngology, secondary appointment, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; USA.

MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES

Organization	Year
Spanish Neuroscience Association	1991 - present
Society for Neuroscience	1996 - present
American Society for Cell Biology	1996 - 2007
Association for Research in Otolaryngology (A.R.O.)	1996 - present
Connecticut Microscopy Society	2003 - 2004
Cajal Club	2005 - present
New York Academy of Sciences	2008 - 2009
Spanish Association of Audiology (AEDA)	2009 – present
Affiliate of the International Society of Audiology (ISA)	
American Association for the Advancement of Science	2015
Spanish Scientists in E.E.U.U.	2025 - present

HONORS

Title of Award /Year

Visiting Fellowship in the NIH Visiting Program. Fogarty International Center	1995 -1999
Research Fellowship Alexander von Humboldt	1999 - 2001
NIH Fellows Award for Research Excellence	1996
NIDCD Research Excellence Award	1997
Alexander von Humboldt Stipendiat	1999- present
Univ. of Connecticut Physiology and Neurobiology Merit Award	2004 - 2005 2005 - 2006 2006 - 2007
Univ. of Connecticut College of Liberal Art and Sciences Dean's Merit Award	2005 - 2006 2006 - 2007
Univ. of Connecticut Chancellor's Special Achievement Award	2005 – 2006 2006 - 2007
Nominated for the Blavatnik Awards for Young Scientists of the New York Academy of Sciences	2008

PUBLICATIONS

1. Original Refereed articles

*Corresponding Author

#Mentee

1.- Prieto J.J., **Rubio M.E.** and Merchán J.A. (1990) Localization of anionic sulfate groups in the tectorial membrane. *Hearing Research*, 45: 283-294.

Role: *I contributed to the analysis and interpretation of the immunolabeling studies.*

2.- Prieto J.J., Rueda J., **Rubio M.E.** and Merchán M.A. (1991) Pilocarpine elicits the secretory activity of the inner ear's interdental cells. *Hearing Research*, 54: 59-66.

Role: *I contributed to the analysis of the ultrastructural studies at the electron microscopic level.*

3.- Rueda J, Prieto, J.J. **Rubio M.E.**, Gutierrez A. and Merchán A. (1993) Development of the tectal cells in the mouse cochlea. *Developmental Brain Research*, 187: 425-432.

Role: *I contributed to the analysis of the ultrastructural studies at the electron microscopic level.*

4.- **Rubio M.E.**, Rueda J., Prieto J.J. and Merchán J.A. (1994) Pilocarpine-induced changes in the saccharide composition of the tectorial membrane and interdental cells of the organ of Corti: A study with gold-labeled lectins. *Journal Histochemistry and Cytochemistry*, 42: 405-416.

5.- **Rubio M.E.*** and Wenthold R.J. (1997) Glutamate receptors are selectively targeted to postsynaptic sites in neurons. *Neuron*, 18: 939-950. PMID: 9208861

6.- **Rubio M.E.** and Juiz J.M. (1998) Chemical anatomy of excitatory endings in the dorsal cochlear nucleus: synaptic distribution of aspartate amino-transferase, glutamate and zinc. *Journal of Comparative Neurology*, 399: 341-358.

7.- **Rubio M.E.*** and Wenthold, R.J. (1999) Differential subcellular distribution of glutamate receptors in neurons. *Journal of Neuroscience*, 19:5549-5562.

8.- **Rubio M.E.*** and Wenthold R.J. (1999) Calnexin and the immunoglobulin binding protein (BiP) co-immunoprecipitate with AMPA receptors. *Journal of Neurochemistry*, 73:942-948.

9.- **Rubio M.E.*** and Soto F. (2001) Distinct localization of P2X receptors at excitatory postsynaptic specializations. *Journal of Neuroscience* 21:641-653.

10.- Collin C., Vicario-Abejon C, **Rubio M.E.**, Wenthold R.J., McKay R.D.G. and Segal M. (2001) Neurotrophins act at pre-synaptic terminals to activate synapses among cultured hippocampal neurons. *European Journal of Neuroscience* 13:1273-1282.

11.- Soto F. and **Rubio M.E.** (2001) Cloned P2X receptor subunits in cerebellum and hippocampus. *Drug Developmental Research* 52:133-139.

- 12.- Brusés J.L., Chauvet N., **Rubio M.E.** and Rutishauser U. (2002) Polysialic acid and the formation of oculomotor synapses on chick ciliary neurons. *Journal of Comparative Neurology* 446:244–256.
- 13.- Barberi T., Klivenyi P., Calingasan N.Y., Lee H., Kawamata H., Loonam K., Perrier A.L., Bruses J., **Rubio M.E.**, Topf N., Tabar V., Harrison N.L., Beal M.F., Moore A.S. and Studer L. (2003) Neural subtype specification of fertilization and nuclear transfer embryonic stem cells and application in parkinsonian mice. *Nature Biotechnology* 21:1200-1207.
- 14.- **Rubio M.E.*** and Juiz J.M. (2004) Differential distribution of synaptic endings containing glutamate, glycine, and GABA in the rat dorsal cochlear nucleus. *Journal of Comparative Neurology* 477:253-272.
- 15.- Perrier A.L., Tabar V., Barberi T., **Rubio M.E.**, Bruses J., Topf N., Harrison N.L. and Studer L. (2004) Derivation of midbrain dopamine neurons from human embryonic stem cells. *Proceedings of National Academic of Science* 101(34):12543-12548. *Cover Image*.
- 16.- Charych E., Li X., Yu W., Serwanski D., Miralles C., **Rubio M.E.** and de Blas A.L. (2004) The Brefeldin A-Inhibited GDP/GTP Exchange Factor 2, a Protein Involved in Vesicular Trafficking, Interacts with the [[beta]] Subunits of the GABA-A Receptors. *Journal of Neurochemistry* 90:173-189.
- 17.- Matsui K., Jahr C.E. and **Rubio M.E.*** (2005) High concentration rapid transients of glutamate mediates neuron-glia communication via ectopic release. *Journal of Neuroscience* 25:7538-7547. PMID: 16107641.
- 18.- **Rubio M.E.** Curcio C., Chauvet M. and Bruses J. (2005) Assembly of the N-cadherin complex during synapse formation involves uncoupling of p120-catenin and association with presenilin 1. *Molecular and Cellular Neuroscience* 30:611-23.
- 19.- Masin M., Bremm A., Kerschensteiner D., Dümke K., **Rubio M.E.** and Soto F. (2006) Fe65 interacts with P2X2 subunits at excitatory synapses and modulates receptor function. Published online in the *Journal of Biological Chemistry* 281:4100-4108.
- 20.- Steinberg J.P., Shen Y., Takamiya T., Xia J., **Rubio M.E.**, Yu S., Jin W., Thomas G.M., Linden D.J. and Huganir R.L. (2006) Targeted in vivo mutations of the AMPA receptor subunit GluR2 and its interacting protein PICK1 eliminate cerebellar long-term depression. *Neuron* 49:845-860.
- 21.- **Rubio M.E.*** (2006) Redistribution of synaptic AMPA receptors at glutamatergic synapses in the dorsal cochlear nucleus as an early response to cochlear ablation in the rat. *Hearing Research* 216-217:154-167. PMID: 16644159.
- 22.- Hemmerlein B., Weseloh R.M., Fernanda de Queiroz M., Knoetgen H., Sanchez A., **Rubio M.E.**, Martin S., Schliephacke T., Jenke M., Joachim-Radzun H., Stuehmer W. and Pardo L.A. (2006) Overexpression of Eag1 potassium channels in clinical tumors *Mol Cancer* Oct 5;5(1):41 [Epub ahead of print] PMID: 17022810.
- 23.- Ziskin J.L., Nishiyama A., **Rubio M.E.**, Fukaya M.F. and Bergles D.E (2007) Vesicular release of glutamate from unmyelinated axons in white matter. *Nature Neuroscience* 10:321-330 (Published online: 11 February 2007; (doi:10.1038/nn1854). *Cover Image*.
- 24.- Douyard J.[#], Shen L., Huganir R.L. and **Rubio M.E.*** (2007) Differential neuronal and glial expression of GluR1 AMPA receptor subunit, and the scaffolding proteins SAP97 and 4.1N during rat cerebellar development. *Journal of Comparative Neurology* 502:141-156. DOI:10.1002/cne.21310. PMID: 17335044.

- 25.- Tzounopoulos T., **Rubio M.E.**, Keen J.E. and Trussell L.O. (2007) Coactivation of pre- and postsynaptic signaling mechanisms determines cell-specific spike-timing-dependent plasticity. *Neuron* 54:291-301.
- 26.- Gómez-Nieto R., **Rubio M.E.** and López D.E. (2008) Cholinergic input from the ventral nucleus of the trapezoid body to cochlear root neurons in rats. *Journal of Comparative Neurology* 506:452-468 PMID: 18041785)
- 27.- Lu T., **Rubio M.E.** and Trussell L.O. (2008) Fast glycinergic transmission is modified by co-release of GABA in mammalian synapses. *Neuron* 57:524-535. Cover Image: Author (*Rubio M.E.*).
- 28.- **Rubio M.E.***, Gudsnek K.A.#, Smith Y. and Ryugo D.K. (2008) Revealing the molecular layer of the primate dorsal cochlear nucleus. *Neuroscience* 154:99-113 PMID: 18222048)
- 29.- Gómez-Nieto R.#, Horta-Junior J.A.C., Castellano O., Herrero Turrión M.J., **Rubio M.E.** and López D.E. (2008) Neurochemistry of the afferents to the rat cochlear root nucleus: Possible synaptic modulation of the acoustic startle. *Neuroscience* 154:51-64 (PMID: 18384963).
- 30.- Genzen J, Platel J.-C, Yang D., Ravid K., **Rubio M.E.** and Bordey A. (2008). Ependymal cells along the lateral ventricle express functional P2X7 Receptors. *Purinergic Signaling* 5:299-307 PMID: 19274488.
- 31.- Zhao Y., **Rubio M.E.** and Tzounopoulos T. (2009) Distinct architecture of endocannabinoid system in the dorsal cochlear nucleus and its physiological consequences on excitatory and inhibitory inputs. *Journal of Neurophysiology* 10:2434-2446 PMID: 19279154.
- 32.- Gómez-Nieto R.# and **Rubio M.E.*** (2009) A bushy cell network in the rat ventral cochlear nucleus. *Journal of Comparative Neurology* 516:241-263. PMCID: PMC2841288.
- 33.- Whiting B.#, Moiseff A. and **Rubio M.E.*** (2009) Cochlear nucleus neurons redistribute synaptic AMPA and glycine receptors in response to monaural conductive hearing loss. *Neuroscience* 163:1264-1276 PMID: 19646510.
- 34.- Tran T.S., **Rubio M.E.**, Case L., Tessier-Lavigne M., Ginty D.D. and Kolodkin A.L (2009) Secreted Semaphorins Control Spine Distribution and Morphogenesis in the Postnatal CNS. *Nature* 62:1065-1069 PMID: 20010807.
- 35.- Gómez-Varela D., Köhl T., Schmidt M., **Rubio M.E.**, Kawabe H., Nehring R.B., Schäfer S., Stühmer W. and Pardo L. (2010) Direct visualization of the lateral mobility of endogenous Eag1 channels in hippocampal synapses *PlosOne* 5(1): e8858. doi:10.1371/journal.pone.0008858.
- 36.- Platel J.-C., Dave K.A., Gordon V., Lacar B., **Rubio M.E.** and Bordey A. (2010) NMDA receptors activated by glutamate released from astrocyte-like cells are critical for postnatal subventricular zone neurogenesis. *Neuron* 6: 6859-6872. PMCID: PMC2861893.
- 37.- Li Y., Serwanski, D.R., Miralles C.P., Fiondella C.G., LoTurco J.J., **Rubio M.E.** and De Blas A.L. (2010) Synaptic and non-synaptic localization of protocadherin-γC5 in the rat brain. *Journal of Comparative Neurology* 518:3439-3463. PMID: 20589908.
- 38.- Moreau M., Piguel N., Papouin T., Koehl M., Durand C., **Rubio M.E.**, Loll F., Richard E., Mazzocco C., Racca C., Oliet S., Abrous D.N., Montcouquiol M. and Sans N. (2010) The Planar Polarity protein Scribble1 is essential for neuronal plasticity and brain function. *Journal of Neuroscience* 30:9738-9752.

- 39.- Aguirre A., **Rubio M.E.** and Gallo V. (2010) Interaction between Notch and EGFR signaling pathways regulates neural stem cell number and self-renewal in SVZ niche. *Nature* 467:323-327. PMCID: PMC2941915.
- 40.- Gómez-Nieto R.[#] and **Rubio M.E.*** (2011) Ultrastructure, synaptic organization, and molecular components of bushy cell networks in the anteroventral cochlear nucleus of the rhesus monkey. *Neuroscience*. 179:188-207. PMCID: PMC3059371. Cover image. Author (Rubio M.E).
- 41.- Zhao Y., **Rubio M.E.** and Tzounopoulos T. (2011) Mechanisms Underlying Input-Specific Synaptic Plasticity in the Dorsal Cochlear Nucleus. *Hearing Research* 279: 67-73 PMCID: PMC3157579. Cover image. Author (Rubio M.E).
- 42.- Chen Y., Sánchez A., **Rubio M.E.**, Pardo L.A. and Stühmer W. (2011) Functional Kv10.1 channels localize to the internal nuclear membrane. *PlosOne*. 6:e19257. PMCID: PMC3086910.
43. Wang H. [#], Yin G. [#], Rogers K. [#], Miralles C., De Blas A.L. and **Rubio M.E.*** (2011) Monaural conductive hearing loss alters the general expression of the GluA3 AMPA and glycine receptor $\alpha 1$ subunits in Bushy and Fusiform cells of the cochlear nucleus. *Neuroscience*. 199:438-451 PMCID: PMC3237936. doi:10.1016/j.neuroscience.2011.10.021.
44. Saab A.S., Neumeyer A., Jahn H.J., Cupido A., Boele H-J., Simek A.A.M., Scheller A., Le Meur K., Götz M., Monyer H., Sprengel R., **Rubio M.E.**, de Zeeuw C., Deitmer J.W. and Kirchhoff F. (2012) Bergmann glial AMPA receptors are required for fine motor coordination. *Science* 337(6095):749-753. PMID: 22767895. DOI: [10.1126/science.1221140](https://doi.org/10.1126/science.1221140)
45. Gómez-Nieto R.[#], de Anchieta J., Horta-Júnior J., Castellano O., Millian-Morell L., **Rubio M.E.** and López D.E. (2014) Contribution of short-latency auditory inputs to the neuronal substrates underlying the acoustic startle reflex *Frontiers in Neuroscience*. Published: 25 July 2014 doi: 10.3389/fnins.2014.00216. PMID: 25120419. PMCID: PMC4110630.
46. **Rubio M.E.***, Fukazawa Y., Kamasawa N., Clarkson C.[#], Molnár E. and Shigemoto R. (2014) Target- and input-dependent organization of AMPA and NMDA receptors in synaptic connections of the cochlear nucleus. *Journal of Comparative Neurology*. 522:4023-4042. doi: 10.1002/cne.23654. Epub 2014 Jul 29. PMID: 25041792.
47. Mortensen L.S., Schmidt H., Farsi Z., Barrantes-Freer A., **Rubio M.E.**, Ufartes R., Eilers J., Sakaba T., Stühmer W. and Pardo L.A. (2015) KV10.1 opposes activity-dependent increase in Ca²⁺ influx into the presynaptic terminal of the parallel fibre – Purkinje cell synapse. *Journal of Physiology*. 593:181-196. doi: 10.1113/jphysiol.2014.281600. Epub 2014 Nov 25. PMID: 25556795.
48. **Rubio M.E.** and Nagy J.J. (2015) Connexin36 expression in major centers of the auditory system in the CNS of mouse and rat: Evidence for neurons forming purely electrical synapses and morphologically mixed synapses. *Neuroscience*. 303:604- 629. PMID: 26188286. PMCID: PMC4576740.
49. Divito C.B., Williams S-P.G., Stancati J.A., Holmstrand E.C., Case D.T., Zhi L., Yuan C., Cagle N.E., Sun T., **Rubio M.E.**, Sortwell C.E., Collier T.J., Sulzer D., Edwards R.H., Steece-Collier K., Zhang H. and Seal R.P. (2015) Loss of VGLUT3 produces hyperdopaminergia and ameliorates motor dysfunction and L-dopa mediated dyskinesias in a model of Parkinson's disease. *Journal of Neuroscience*. 35(45): 14983-14999; doi: 10.1523/JNEUROSCI.2124-15. PMCID: [PMC4642234](https://doi.org/10.1523/JNEUROSCI.2124-15)
50. Weisz C.J.C., **Rubio M.E.**, Givens R. and Kandler K. (2016) Excitation by axon terminal GABA spillover in

a sound localization circuit *Journal of Neuroscience*. 36(3):911-925. PMID: 26791220. PMCID: PMC4719023.

51. Cai X., Kardon A.P., Snyder L.M., Minestro S., de Souza L., Kuzirian M., **Rubio M.E.**, Maricich S.M. and Ross S.E. (2016) *Bhlhb5:flpo* allele uncovers a requirement for Bhlhb5 for the development of the dorsal cochlear nucleus. *Developmental Biology*. 414(2):149-60. pii: S0012-1606(15)30193-7. doi: 10.1016/j.ydbio.2016.04.028. [Epub ahead of print]. PMID: 27151208. PMCID: PMC4930277.

52. Jeffries M.A., Urbanek K., Torres L.[#], Wendell S.G., **Rubio M.E.**, and Fyffe-Maricich S.L. (2016) ERK1/2 Activation in Pre-Existing Oligodendrocytes of Adult Mice Drives New Myelin Synthesis and Leads to Functional Changes in the CNS. *Journal of Neuroscience*. 36(35): 9186-9200. PMID:27581459. PMCID: PMC5005725.

Featured article in the J of Neuroscience

53. Clarkson C.[#], Antunes F.M.[#], and **Rubio M.E.*** (2016) Conductive hearing loss has long-lasting structural and molecular effects on pre- and post-synaptic structures of the auditory nerve in the cochlear nucleus. *Journal of Neuroscience*. 36(39):10214-10227. PMID: 27683915. PMCID: PMC5039262.

Featured in Biomedical Advances (<http://biomedical-advances.org>) in the latest section of Neuroscience. Link: <http://biomedical-advances.org/neuro-20175-18/>

54. García-Hernández S.[#], Abe M., Sakimura K., and **Rubio M.E.*** (2017) Impaired auditory processing and altered synaptic structure of the endbulb synapse in mice lacking GluA3 AMPA glutamate receptors. *Hearing Research* 344: 284-294. DOI: [10.1016/j.heares.2016.12.006](https://doi.org/10.1016/j.heares.2016.12.006). PMID: 28011083. PMCID: [PMC5240188](https://pubmed.ncbi.nlm.nih.gov/PMC5240188/).

55. **Rubio M.E.***, Matsui K., Fukazawa Y., Kamasawa N., Harada H., Itakura M., Molnár E., Abe M., Sakimura K., and Shigemoto R. (2017) The number and distribution of AMPA receptor channels containing fast kinetic GluA3 and GluA4 subunits at auditory nerve synapses depend on the target cells. *Brain Structure and Function*. 222(8):3375-3393. DOI 10.1007/s00429-017-1408-0. PMID: 28397107. PMCID: PMC5676837.

56. Welty S., Teng Y., Liang Z., Zhao W., Sanders L., Greenamyre JT, **Rubio M.E.**, Thathiah A., Kodali R., Wetzel R., Levine A., and Lan L. (2017) RAD52 is required for RNA-templated recombination repair in post-mitotic neurons. *Journal of Biological Chemistry*. 293(4):1353-1362. doi: 10.1074/jbc.M117.808402. Epub 2017 Dec 7. DOI: 10.1074/jbc.M117.808402. PMCID: PMC5787811.

57. Eaton A.F., Clayton D.R., Ruiz W.G., Griffiths S.E., **Rubio M.E.**, and Apodaca G. (2019) Expansion and contraction of the umbrella cell apical junctional ring in response to bladder filling and voiding *Mol Biol Cell*. 30(16):2037-2052. Doi: 10.1091/mbc.E19-02-0115. PMCID: [PMC6727774](https://pubmed.ncbi.nlm.nih.gov/PMC6727774/).

58. Clarkson C.[#], Smeal R., Gibbons M., White J.A., **Rubio M.E.****, and Wilcox K.S.^{**} (2020) Ultrastructural and functional changes at the tripartite synapse during epileptogenesis in a model of temporal lobe epilepsy. *Experimental Neurology* 326:113196. doi: [10.1016/j.expneurol.2020.113196](https://doi.org/10.1016/j.expneurol.2020.113196). (Cover image). PMCID: PMC7054984

^{**} Co-senior and -corresponding authors

Featured in a commentary in Epilepsy Current:

<https://journals.sagepub.com/doi/full/10.1177/1535759720928377>

59. Antunes F., **Rubio, M.E.**, Kandler, K. (2020) Altered synaptic transmission and plasticity in cochlear nucleus endbulb-bushy cell synapses of mice lacking the GluA3 AMPA receptor subunit. *Journal of Neuroscience* 40(12):2471-2484. doi: 10.1523/JNEUROSCI.2573-19.2020. PMID: 32051325. PMCID: [PMC7083531](https://pubmed.ncbi.nlm.nih.gov/PMC7083531/).

60. Weisz C.J., Williams, S-P., G.Ferreira, D., Eckard C.S., Divito C.B., Fantetti K.N., Dettwyler S.A., Cai H.-M., **Rubio M.E.***, Kandler K., Seal R.P*. (2021). Outer hair cell glutamate signaling through type II afferents activates neurons in the cochlear nucleus in response to non-damaging sounds. *Journal of Neuroscience* 41(13):2930–2943. <https://doi.org/10.1523/JNEUROSCI.0619-20.2021>. PMID: [PMC8018895](https://pubmed.ncbi.nlm.nih.gov/34915397/)

* Co-senior authors

61. García-Hernández S., **Rubio M.E.*** (2022) GluA4 is necessary to elicit acoustic and tactile startle response. *Hearing Research*. 414:108410. PMID: 34915397. DOI: [10.1016/j.heares.2021.108410](https://doi.org/10.1016/j.heares.2021.108410). PMID: 34915397
PMCID: [PMC8776314](https://pubmed.ncbi.nlm.nih.gov/35617926/).

62. Owoc M., M, **Rubio M.E.**, Brockway B.S., Sadagopan S., Kandler K. (2022) Embryonic medial ganglionic eminence cells survive and integrate into the inferior colliculus of adult mice. *Hearing Research*. 420:108520. <https://doi.org/10.1016/j.heares.2022.108520>. PMID: 35617926. PMCID: [PMC11697826](https://pubmed.ncbi.nlm.nih.gov/39827525/)

63. Rutherford M.A., Bhattacharyya A., Xiao M., Cai H.M., Pal I., **Rubio M.E.*** (2023) Postsynaptic GluA3 subunits are required for appropriate assembly of AMPA receptor GluA2 and GluA4 subunits on mammalian cochlear afferent synapses and for presynaptic ribbon modiolar-pillar morphological distinctions. *eLife* 12:e80950. <https://doi.org/10.7554/eLife.80950>. PMCID: [PMC9891727](https://pubmed.ncbi.nlm.nih.gov/4083943/).

This article was chosen as being of special interest in its field and is a recommended article in Faculty Opinions.
<https://facultyopinions.com/article/742494799>.

64.- Lozier N, Muscio S, Pal I, Cai H.M., **Rubio M.E.*** (2023) Sex differences in AMPA Receptor Subunit mRNA with Fast Gating Kinetics in the Mouse Cochlea. *Front Sys Neurosci*. DOI: 10.3389/fnsys.2023.1100505. PMID: 36936507. PMCID: [PMC10017478](https://pubmed.ncbi.nlm.nih.gov/39827525/)

65.- Ruff C.F., F.A., Dienel S., Rakymzhan A., Altamirano-Espinoza A., Couey J., Watson A.M., Fish, K.N., Hooks B.M., **Rubio M.E.**, Su A., Ross S.E., Vázquez A.L. (2024) Long-range inhibitory neurons mediate cortical neurovascular coupling. *Cell Reports*. 43(4): 113970. DOI: [10.1016/j.celrep.2024.113970](https://doi.org/10.1016/j.celrep.2024.113970). PMID: 38512868. PMCID: [PMC11168451](https://pubmed.ncbi.nlm.nih.gov/4083943/).

66.- Pal I., Bhattacharyya A., V-Ghaffari B., Williams E.D., Xiao M., Rutherford M.A., **Rubio M.E.*** (2025) Female mice lacking GluA3 show early onset of hearing loss, synaptopathy, and afferent swellings in ambient sound levels. *iScience*. 28: 111799. DOI: [1016/j.isci.2025.111799](https://doi.org/10.1016/j.isci.2025.111799). PMID: 39935454. PMCID: [PMC11810710](https://pubmed.ncbi.nlm.nih.gov/4083943/)

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2. Other peer-reviews publications (review articles)

1.- Petralia R.S., **Rubio M.E.** and Wenthold R.J. (1998) Selectivity in the distribution of glutamate receptors in neurons. *Cell Biol Inter*, 22:603-608.

- 2.- **Rubio M.E.** (2000) Selective targeting of glutamate receptors in neurons. *Molec Neurobiol* 21(1/2): 1-19.
- 3.- Wenthold R.J., Petralia R.S., Zhao H.M., Wang Y.W., **Rubio M.E.**, Ly C.D. and Roche K.W. (2000) Targeting of receptors to Purkinje cell synapses. *Eu J of Neurosci Suppl. S.*, 12:182-182.
- 4.- Petralia R.S., **Rubio M.E.**, Wang Y.-X. and Wenthold R.J. (2000) Differential distribution of glutamate receptors in the cochlear nuclei. *Hear Res* 3496:1-11.
- 5.- **Rubio M.E.** (2020) Auditory brainstem development and plasticity. Issue: Mammalian Hearing. *Curr Op Physiol.* <https://doi.org/10.1016/j.cophys.2020.07.002>.
- 6.- Williams E.D., **Rubio M.E.** (2024) Associations Between Diabetes Mellitus and Sensorineural Hearing Loss from Humans and Animal Studies. *Hear Res* 450: 109072. <https://doi.org/10.1016/j.heares.2024.109072>. PMID: 38936171. PMID: [38936171](https://pubmed.ncbi.nlm.nih.gov/38936171/).

3. Other non-peer reviewed publications

- 1.- **Rubio M.E.** (2019). #LabHacks: What you need to know about immunolabelling procedures. *Scientifica* <https://www.scientifica.uk.com/neurowire/labhacks-what-you-need-to-know-about-immunolabeling-procedures>.
- 2.- **Rubio M.E.** (2021) Central auditory brainstem plasticity from molecules to behavior. *Brain Sci* 11(5):573. doi: 10.3390/brainsci11050573. PMID: 33946844 PMID: [PMC8145046](https://pubmed.ncbi.nlm.nih.gov/33946844/).
- 3.- **Luján R., Rubio M.E.** (2022) Immunoelectron Microscopy: Placing Molecular Functions Within a Neuronal Context. Editorial. *Front Neuroanat* 16:1043371. doi: 10.3389/fnana.2022.1043371.

4.- Books and book chapters

- 1.- Juiz J.M., **Rubio M.E.**, Helfert R.H. and Alstchuler R.A. (1993). Localizing putative excitatory endings in the cochlear nucleus by quantitative immunocytochemistry. In: "*The Mammalian Cochlear Nuclei: Organization and Function*". M. Merchan, J.M. Juiz, D.A. Godfrey and E. Mugnaini (eds.), Plenum Press, New York, 167-178.
- 2.- Wenthold R.J., Wang Y-X., Petralia R.S., and **Rubio M.E.** (1997). Distribution and targeting of glutamate receptors in the cochlear nucleus. In: *Acoustical Signal Processing in the Central Auditory System*. J. Syka (ed.) Plenum Press, New York 93-107.
- 3.- Wenthold R.J., Hunter C., Petralia R.S., Niedzielski A.S., Wang Y-X., Safieddine S., Zhao H., and **Rubio M.E.** (1997). Receptors in the auditory pathway. In: *Neurotransmission and Hearing Loss*. I. Charles Berlin (ed.). Singular Publishing Group, Inc. San Diego 1-23.
- 4.- Juiz J., **Rubio M.E.**, Campos M.L., and De Cabo C. (1998). Cytomolecular foundations of signal processing in the dorsal cochlear nucleus. In: "*Psychophysical and Physiological. Advances in Hearing*". A.R. Palmer, A. Rees, A.Q. Summerfield and R. Meddis (eds.) Whurr Publishers.
- 5.- Petralia R.S., **Rubio M.E.** and Wenthold R.J. (1999). Cellular and subcellular distribution of glutamate receptors. In: "*Handbook of Experimental Pharmacology: Ionotropic receptors in the CNS*". P. Jonas and H. Monyer (eds.) Springer-Verlag, Berlin pp. 143-171.

- 6.- Petralia R.S., **Rubio M.E.**, Wang Y.-X. and Wenthold R.J. (2000). Regional and synaptic expression of ionotropic glutamate receptors. In: *"Handbook of Chemical Neuroanatomy: Glutamate"*. O.P. Ottersen and J. Storm-Mathisen (eds.) vol 18 pp 145-182. Elsevier Science.
- 7.- Wenthold R.J., **Rubio M.E.** and Petralia R.S. (2001). Distribution and targeting of glutamate receptors in neurons. In: *Excitatory amino acids: Ten years later*. L. Turski, D.D. Schoepp and E.A. Cavalheiro E.A. Volume 45 Biomedical and Health Research IOS Press, Brazil pp. 1-9.
- 8.- **Rubio M.E.** (2018) Microcircuits of the Anteroventral Cochlear Nucleus. Springer Handbook of Auditory Research. Springer International Publishing AG 2018 41. D. L. Oliver et al. (eds.), The Mammalian Auditory Pathways, Springer Handbook of Auditory Research 65, pp.41-71. https://doi.org/10.1007/978-3-319-71798-2_3
- 9.- **Rubio M.E.** (2019). Molecular and structural changes in the cochlear nucleus in response to hearing loss. The Oxford Handbook of the Auditory System. Karl Kandler (ed.). Hearing loss effects in the auditory brainstem news and views, Oxford Press, New York. October 2018, DOI: 10.1093/oxfordhb/9780190849061.013.7.
- 10.- **Rubio, M.E.** (2020). Ultrastructural and molecular features of excitatory and glutamatergic synapses. The auditory nerve synapses. Vitamins and Hormones. Gerald Litwack (ed.). Hormones and Synapse. Elsevier Inc. p. 23-52.

5. Published Abstracts (Scientific Meetings)

- 1.- **Rubio, M.E.**, Prieto, J.J., Rueda, J., Balboa, R., Merchán, J.A. (1991). The interdental cell secretory activity of the inner ear can be elicited by pilocarpine in guinea pig's cochlea. 14th Windwinter ARO Meeting. Florida, U.S.A., February.
- 2.- **Rubio, M.E.**, Rueda, J., Merchán, M.A. (1991). Incorporación de glicoconjugados en la membrana tectoria de la cóclea tras la estimulación con pilocarpina. Un estudio ultraestructural con lectinas. Sociedad Española de Neurociencias. Alicante, September, October.
- 3.- Rueda, J., Esteban, M., **Rubio, M.E.**, Gutierrez, A. (1991). Alteraciones de las neuronas tipo I del ganglio espiral tras la administración de amikacina. VII Congreso Nacional de Histología, Lugo, September 11-13.
- 4.- Rueda, J., Esteban, M., **Rubio, M.E.**, Gutierrez, A. (1991). Cambios en la porción glucídica de la membrana tectoria de la rata tras ototoxicidad por amikacina. VII Congreso Nacional de Histología, Lugo, September 11-13.
- 5.- Rueda, J., Esteban, M., **Rubio, M.E.**, Gutierrez, A. (1991). La administración de amikacina altera los glicoconjugados de las células ciliadas en la cóclea de la rata. VII Congreso Nacional de Histología, Lugo, September 11-13.
- 6.- Rueda, J., Gutierrez, A., **Rubio, M.E.**, Merchán, J.A. (1991). Desarrollo de la membrana tectoria de la cóclea del ratón. VII Congreso Nacional de Histología, Lugo, 1 September 11-13.
- 7.- Rueda, J., Prieto, J.J., **Rubio, M.E.**, Gutierrez, A. (1991). Células tectales del órgano de Corti. VII Congreso Nacional de Histología, Lugo, September 11-13.

- 8.- **Rubio, M.E.**, Rueda, J., Merchán, J.A. (1991). Estudio ultraestructural mediante lectinas del material glucídico secretado por las células interdentes hacia la membrana tectoria en la cóclea del cobaya adulto tras la estimulación con pilocarpina. VII Congreso Nacional de Histología, Lugo, September 11-13.
- 9.- **Rubio, M.E.**, Rueda, J., Merchán, J.A. (1991). Identificación ultraestructural de glicoconjugados en la porción límbica de la membrana tectoria en la cóclea del cobaya adulto mediante lectinas. VII Congreso Nacional de Histología, Lugo, September 11-13.
- 10.- Juiz, J.M., **Rubio, M.E.**, Helfert, R.H., Altschuler R.A. (1991). Localizing putative excitatory endings in the cochlear nucleus by ultrastructural immunocytochemistry and enzyme cytochemistry. The Mammalian Cochlear Nuclei: Organization and Function. Nato-Advanced Research Workshop. Salamanca, September 14-17.
- 11.- **Rubio, M.E.**, Merchan, J.A., Juiz, J.M. (1991). Ultrastructure localization of aspartate aminotransferase activity in the cochlear nucleus of the rat. The Mammalian Cochlear Nuclei: Organization and Function. Nato-Advanced Research Workshop. Salamanca, September 14-17.
- 12.- **Rubio, M.E.**, Juiz, J.M. (1993). Differences in patterns of inhibitory synapses between high and low frequency regions of the cochlear nucleus. 16th Windwinter ARO Meeting, Florida.
- 13.- Rueda, J., Gutierrez, A., **Rubio, M.E.**, Angulo, A., Merchan, M.A. (1993). Naturally occurring neuronal death in the cochlea is interfered by congenital Hypothyroidism. 16th Windwinter ARO Meeting, Florida.
- 14.- **Rubio, M.E.**, Juiz, J.M. (1993). Unraveling the synaptic microcircuits of the dorsal cochlear nucleus: neurotransmitter specificity and distribution of synaptic endings. 16th Annual Meeting of the European Neuroscience Association, Madrid.
- 15.- Lopez, D.E., Ludena, M.D., **Rubio, M.E.**, Juiz, J.M. (1994). Projection from the lateral superior olive to the dorsal cochlear nucleus in the rat. 17th Annual meeting of the European Neuroscience Association, Vienna.
- 16.- **Rubio, M.E.**, Campos, M.L., Juiz, J.M. (1994). Anatomía química de los terminales sinápticos en el núcleo coclear dorsal de la rata. Taller Nacional de Neurobiología de la audición. Salamanca, November.
- 17.- Wenthold, R.J., Petralia, R.S., Hunter, C., Wang, Y.-X., Niedzielski, A.S., Safieddine, S., **Rubio, M.E.**, Park, H.-J., Blahos, J., Zaho, H.-M. (1995). Glutamate receptors in the auditory system. The Molecular Biology of Hearing and Deafness. October, Bethesda, MD.
- 18.- Campos, M.L., **Rubio, M.E.**, Juiz, J.M. (1995). Acido glutámico en terminaciones sinápticas identificadas: Relación con vesículas sinápticas. Sociedad Española de Neurociencias. Valladolid, September.
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- 20.- Wenthold, R.J., Wang, Y.-X., Petralia, R.S., **Rubio, M.E.** (1996). Distribution and targeting of glutamate receptors in the cochlear nucleus. An Acoustical Signal Processing in the Central Auditory System. Prague, September 4-7.
- 21.- **Rubio, M.E.**, Manis, P.B., Wenthold, R.J. (1996). Types and subunits of glutamate receptors can differ in their distribution in neurons. 26th Annual Meeting Society of Neuroscience Abst. 22, Washington D.C., November 16-22.

- 22.- Wenthold, R.J., Petralia, R.S., Wang, Y-X., Zhao H-M., **Rubio, M.E.**, Huh, K.H. (1997). Targeting and turnover of glutamate receptors in neurons. EEA Symposium 97. ISN/ASN Satellite Symposium and aspet colloquium on excitatory amino acids. Waterville Valley, NH, July 16-20.
- 23.- **Rubio, M.E.**, Wenthold, R.J. (1997). Calnexin and BiP co-immunoprecipitate with AMPA receptors. 27th Annual Meeting Society for Neuroscience, Abst. New Orleans, LA, October 25-30.
- 24.- **Rubio, M.E.**, Beurone, F., Stevens, C.A., Wenthold, R.J. (1998). Visualization of native AMPA receptor complexes. 28th Annual Meeting Society for Neuroscience, Abst. Los Angeles, CA, November 7-12.
- 25.- **Rubio, M.E.**, Ly C.D., Wenthold, R.J. (1999). Targeting of the glutamate receptor delta 2, in HeLa cells and neurons. 29th Annual Meeting Society for Neuroscience, Abst. Miami Fl., October 23-29.
- 26.- Soto, F., **Rubio, M.E.** (2000). Cloned P2X receptors in the nervous system. 3rd International Symposium of Nucleosides and Nucleotides. Biochemical, Pharmacological and Clinical Perspectives. Madrid, Spain, July 9-13.
- 27.- **Rubio, M.E.**, Soto, F. (2000) Distribution of P2X₂ and P2X₄ receptor subunits at excitatory synapses in cerebellum and hippocampus. 30th Annual Meeting Society for Neuroscience, Abst. New Orleans, La, November 4-9.
- 28.- Vicario-Abejon, C., Collin, C., **Rubio, M.E.**, Wenthold, R.J., McKay, R.D.G., Segal, M. (2000). BDNF and NT-3 act at presynaptic terminals to promote formation on functional synapses among cultured hippocampal neurons. 30th Annual Meeting Society for Neuroscience, Abst. New Orleans, La, November 4-9.
- 29.- Wenthold R.J., Petralia R.S., Zhao H.M., Wang Y.W., **Rubio M.E.**, Ly C.D., Roche K.W. (2000) Targeting of receptors to Purkinje cell synapses. Eu. J. Neurosci. Suppl. S., 12:182-182.
- 30.- **Rubio M.E.** (2002) Balance between excitation and inhibition in the dorsal cochlear nucleus. Neuroscience at Storrs, CT, USA.
- 31.- Douyard J., Shen L., Hugarir R.L., Wenthold R.J., **Rubio M.E.** (2003) Distribution of AMPA receptors, SAP97 and 4.1N on Purkinje cells and Bergmann glia during development. 33th Annual Meeting Society for Neuroscience, Abst. New Orleans, La, November 7-13.
- 32.- Charych E., Li X, Yu W., Serwanski D., Miralles C., **Rubio M.E.**, de Blas A.L. (2003) The Brefeldin A-Inhibited GDP/GTP Exchange Factor 2, a Protein Involved in Vesicular Trafficking, Interacts with the [[beta]] Subunits of the GABA-A Receptors. 33th Annual Meeting Society for Neuroscience, Abst. New Orleans, La, November 7-13.
- 33.- Perrier A.L., Tabar V., Barberi T., **Rubio M.E.**, Bruses J., Topf N., Harrison N.L., Studer L. (2003) Derivation of midbrain dopamine neurons from human embryonic stem cells. 33th Annual Meeting Society for Neuroscience, Abst. New Orleans, La, November 7-13.
- 34.- Nishiyama A., Zhu X., Wang H., Bergles D., **Rubio M.E.** (2004) Extensive contact between NG2 cell processes and myelinated and unmyelinated axons in NG2-DsRed transgenic mice. 34th Annual Meeting Society for Neuroscience, Abst. San Diego, CA, October 23-27.
- 35.- Boren B., Alevras C.; Friedman T., Panjwani A., Miralles C., de Blas A.L., Moiseff A., Wenthold R.J., **Rubio M.E.** (2004) Effects of auditory nerve damage on the expression of excitatory and inhibitory neurotransmitter

receptors in the dorsal cochlear nucleus. 34th Annual Meeting Society for Neuroscience, Abst. San Diego, CA, October 23-27.

36.- Molchanov M.L., **Rubio M.E.** Glutamate-induced morphological changes in Bergmann glia processes surrounding excitatory synapses. (2004) 34th Annual Meeting Society for Neuroscience, Abst. San Diego, CA, October 23-27.

37.- Masin M., Bremm A., Kerschensteiner D., Borchardt K., **Rubio M.E.**, Soto S. (2004) Identification of Proteins Interacting with P2X Receptors in Rat Brain. 34th Annual Meeting Society for Neuroscience, Abst. San Diego, CA, October 23-27.

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42.- Egan K.A., Lacar B., Huang F., **Rubio M.E.**, Bordey A. (2005). Astrocytes manage glutamatergic signaling and NR2B NMDA receptor activity in neuroblasts of the postnatal forebrain 35th Annual Meeting Society for Neuroscience, Abst. Washington, DC November 12-16.

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44.- Tzounopoulos T., **Rubio M.E.**, Mackie K., Trussell L.O. (2005). Endocannabinoid signaling in the dorsal cochlear nucleus. 35th Annual Meeting Society for Neuroscience, Abst. Washington, DC November 12-16.

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47.- Serwanski D.R., Rasband M.N., **Rubio M.E.**, Nishiyama A. (2006) Both NG2 glia and astrocytes contribute to the nodal unit in myelinated axons 36th Annual Meeting Society for Neuroscience. Atlanta, GA, October 14-18.

48.- Tzounopoulos T., **Rubio M.E.**, Trussell L.O. (2006) Synaptic learning rules are shaped by convergent signaling pathways. 36th Annual Meeting Society for Neuroscience. Atlanta, GA, October 14-18.

- 49.- Dave K.A., Platel J.C., Lacar B., Huang F., **Rubio M.E.**, Bordey A. (2006) Rapid glutamatergic signaling from astrocytes to neuroblasts in the neurogenic forebrain via NR2B NMDA receptors). 36th Annual Meeting Society for Neuroscience. Atlanta, GA, October 14-18.
- 50.- Zhang Y., Bouchard G., Lassiter C., Orabone J., Molchanov M.L., **Rubio M.E.** (2006) Do morphological changes in the Bergmann glia processes ensheathing parallel fiber synapses affect the anatomy of Purkinje cell spines? 36th Annual Meeting Society for Neuroscience. Atlanta, GA, October 14-18.
- 51.- Dlugolenski K., Finco R., Patel L., Moiseff A., **Rubio M.E.** (2007) Conductive Hearing loss leads to changes in the expression of excitatory and inhibitory neurotransmitter receptors in cochlear nucleus neurons 30th Annual meeting of the Association for Research in Otolaryngology, Denver, CO, February 10-15.
- 52.- Tzounopoulos T., Trussell L., **Rubio M.E.** (2007) Cell-specific endocannabinoid signaling in the dorsal cochlear nucleus. 30th Annual meeting of the Association for Research in Otolaryngology, Denver, CO, February 10-15.
53. Dlugolenski K., Finco R., Patel L., Moiseff A., **Rubio M.E.** (2007) Conductive Hearing loss leads to changes in the expression of excitatory and inhibitory neurotransmitter receptors in cochlear nucleus neurons. 10th Neuroscience at Storrs Meeting, Storrs, CT April 5.
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- 56.- Rudolph S., Saab A.S., Hirrlinger P.G., Zhang Y., Kirchhoff F., **Rubio M.E.** (2007) Astroglial-specific deletion of AMPA receptor subunit GluR1 and GluR4 causes cerebellar dysfunction. 10th Neuroscience at Storrs Meeting, Storrs, CT April 5.
- 57.- Masin M., Bremm A., Kerschensteiner D., Dümke K., **Rubio M.E.**, and Soto S. (2007) Molecular complex formed by the P2X2 receptor and Fe65 at excitatory synapses. Satellite Symposium of the European Biophysic Congress, Leeds, Great Britain, July 13-14.
- 58.- Zhang Y., Bouchard G., Bellerose D., Orabone J., Garcia M., **Rubio M.E.** (2007) Ca⁺⁺-permeable AMPA receptors in Bergmann glia regulate the glial cell ensheathment around parallel fiber/Purkinje cell synapses. 7th Euroglia Meeting, London, Great Britain, September 4-8.
- 59.- Rudolph S., Saab A., Hirrlinger P.G., Scheller A., **Rubio M.E.**, Kirchhoff F. (2007) Compromised ultrastructure of Bergmann glial processes and Purkinje cell dendrites in mice with induced, Bergmann glia selective ablation of AMPA-type glutamate receptors. 7th Euroglia Meeting, London, Great Britain, September 4-8.
- 60.- Tran T.S., **Rubio M.E.**, Case L., M. Tessier-Lavigne M., D.D. Ginty D.D., Kolodkin A.L (2007) Secreted semaphorins and their receptors modulate dendritic morphology and synapse formation in the adult mouse CNS. Neural Circuit Meeting. Ascona, Switzerland, September 2007.

- 61.- Zhao Y., **Rubio M.E.**, Tzounopoulos T. (2008) Molecular Components and Synaptic Functions of the Endocannabinoid System in the Dorsal Cochlear Nucleus (DCN). 31st Annual meeting of the Association for Research in Otolaryngology, Phoenix, AZ, February 16-21.
- 62.- Gomez-Nieto R., Maltezos N., **Rubio M.E.** (2008) Proximal and distal dendrites of bushy cells of the anteroventral cochlear receive excitatory and inhibitory synaptic inputs. 31st Annual meeting of the Association for Research in Otolaryngology, Phoenix, AZ, February 16-21.
- 63.- Gomez-Nieto R., Maltezos N., Donal G. Sinex, **Rubio M.E.**, Dolores E. Lopez (2008) The role of the cochlear root nucleus in the modulation of the acoustic startle reflex by sounds. 31st Annual meeting of the Association for Research in Otolaryngology, Phoenix, AZ, February 16-21.
- 64.- **Rubio M.E.**, Gudsruk K.A., Smith Y., Ryugo D.K. (2008) Revealing the molecular layer of the primate dorsal cochlear nucleus. 31st Annual meeting of the Association for Research in Otolaryngology, Phoenix, AZ, February 16-21.
- 65.- Carballosa Gonzalez M., Castro Horta Junior J.A., Gómez-Nieto R., Castellano O., **Rubio M.E.**, Herrero-Turrión M.J., Arji M. and López D.E. (2008) Neurochemistry of the afferents to the rat cochlear root nucleus: Possible synaptic modulation of the acoustic startle. 6TH FENS FORUM of European Neuroscience. Geneve, Switzerland, July 2008.
- 66.- Zhao Y., **Rubio M.E.**, Tzounopoulos T. (2008) Molecular Components and Synaptic Functions of the Endocannabinoid System in the Dorsal Cochlear Nucleus (DCN). Washington DC, November 15-19.
- 67.- Gomez-Nieto R., **Rubio M.E.** (2008) Multisensory integration of bushy cell dendrites. 38th Annual Meeting Society for Neuroscience. Washington DC, November 15-19.
- 68.- Gomez-Nieto R., **Rubio M.E.** (2009) Bushy Cell Network in the Ventral Cochlear Nucleus of the Rhesus Monkey. 32nd Annual meeting of the Association for Research in Otolaryngology, Baltimore, MD, February 14-19.
- 69.- Aguirre A., **Rubio M.E.**, V. Gallo V. (2009) Interaction between Notch and EGFR signaling pathways regulates neural stem cell number and self-renewal in the subventricular zone niche. 39th Annual Meeting Society for Neuroscience. Washington DC, October 15-21.
- 70.- **Rubio M.E.**, Kamasawa N., Fukazawa Y, Molnar E., Itakura M., Takahashi M., Watanabe M., Sakimura K., Shigemoto R. (2010) New Insights of the Ionotropic Glutamate Receptor Subunits Composition in Cochlear Nuclei. A SDS-Freeze Fracture Immunogold Labeling Study. 33rd Annual meeting of the Association for Research in Otolaryngology, Anaheim, CA, February 6-10.
- 71.- Wang H., Lu S., Emily Cote E., **Rubio M.E.** (2011) Expression of astrocytic proteins in cochlear nucleus during normal hearing and conductive hearing loss. 34rd Annual meeting of the Association for Research in Otolaryngology, Baltimore, MD, February 19-23.
- 72.- **Rubio M.E.** (2011) Glutamatergic Synapses in the cochlear nucleus? Do we know all? 34rd Annual meeting of the Association for Research in Otolaryngology, Baltimore, MD, February 19-23.
- 73.- Wang H., Lu S., Cote. E, Penderville J, **Rubio M.E.** (2011) Response of cochlear nucleus astrocytes to monaural conductive hearing loss. 8th IBRO World Congress of Neuroscience. Florence, Italy, July 14-18.

- 74.- Wang H., Lu S., Cote. E, Penderville J, **Rubio M.E.** (2011) Cochlear Nucleus Astrocytes Respond to Monaural Conductive Hearing loss. 41st Meeting of the Society of Neuroscience, Washington DC November, 12-16.
- 75.- Clarkson C., **Rubio M.E.** (2012) Enwrapping of perisynaptic astrocytes around endbulb synapses of the rat ventral cochlear nucleus. 35th Annual Association for Research in Otolaryngology MidWinter Meeting. San Diego, CA Feb 24-29.
- 76.- Clarkson C., **Rubio M.E.** (2012) Morphological plasticity at a tripartite cochlear nucleus synapse in response to sound reduction. 8th FENS Forum of Neuroscience, Barcelona, Spain, July 14-18.
- 77.- **Rubio M.E.**, Fukazawa Y., Kamasawa N., Shigemoto R. (2013) Synapse Size, AMPA and NMDA Receptor Numbers, and their Distribution are Regulated in an Input-Specific Manner in the Cochlear Nucleus. 36th Annual Association for Research in Otolaryngology MidWinter Meeting. Baltimore MD, February 16-23.
- 78.- Clarkson C., Wang H., **Rubio M.E.** (2013) Effects of Unilateral Conductive Hearing Loss On Auditory Brainstem Responses in Rats. 36th Annual Association for Research in Otolaryngology MidWinter Meeting. Baltimore MD, February 16-23.
- 79.- Clarkson C., **Rubio M.E.** (2014) Auditory Experience Regulates the Expression of AMPA Receptors and VGlut1 in Auditory nerve-Bushy Cells synapses and GLT1 in Astrocyte Processes. 37th Annual Association for Research in Otolaryngology MidWinter Meeting. San Diego, CA, February 22-26.
- 80.- Clarkson C., **Rubio M.E.** (2014) Conductive hearing loss regulates AMPA receptor and glutamate transporters expression in auditory nerve synapses 9th FENS Forum of Neuroscience, Milan, Italy, July 5-9.
81. Clarkson C., Gibbons M., White J., Wilcox K.S., **Rubio M.E.** (2014) Ultrastructural changes in astrocyte enwrapping and excitatory synapses in the hippocampal CA1 stratum radiatum following kainic acid induced status epilepticus. Gordon Research Conference: Mechanisms of Epilepsy & Neuronal Synchronization. Mount Snow Resort in West Dover, VT, USA, August 17-22
82. Clarkson C., Gibbons M., White J., Wilcox K.S., **Rubio M.E.** (2014) Ultrastructural changes in astrocyte enwrapping and excitatory synapses in the hippocampal CA1 stratum radiatum following kainic acid induced status epilepticus. 44th Meeting of the Society of Neuroscience, Washington DC November, 15-19.
83. Weisz C.J.C., Givens R., **Rubio M.E.**, Kandler K. (2015) Excitation by axon terminal GABA spillover in a sound localization circuit. 38th Annual Association for Research in Otolaryngology MidWinter Meeting. Baltimore, MD, February 21-25.
84. **Rubio M.E.**, Nagy J.J. (2015) Connexin36 expression in major centers of the auditory system in the CNS of mouse and rat: Evidence for neurons forming purely electrical synapses and morphologically mixed synapses. 45th Meeting of the Society of Neuroscience, Chicago, IL, October 17-21.
85. Adhikusuma M, Urbanek K, Torres L, **Rubio ME**, Fyffe-Maricich S.L. (2015) ERK1/2 activation in oligodendrocytes of adult mice leads to enhanced myelin production. Multiple sclerosis Society Conference Dallas, TX, November 4-7.
86. Weisz C.J., Eckard C.S., Divito C.B., Fantetti K.N., Shenin A. Dettwyler S.A., **Rubio M.E.**, Kandler K., Seal R.P. (2016). OHC Glutamate Signaling: Identity of OHC VGLUTs and Cochlear Nucleus Neurons Activated by Type-II Afferents in Response to Sound. 39th Annual Association for Research in Otolaryngology MidWinter Meeting. San Diego, CA, February 20-24.

87. Antunes F., Kandler K., **Rubio M.E.** (2016) Synaptic Transmission in the Endbulb Synapse of Mice Lacking GluA3 AMPA receptor subunit. 39th Annual Association for Research in Otolaryngology MidWinter Meeting. San Diego, CA, February 20-24.
88. **Rubio ME**, Matsui K, Fukazawa Y, Kamasawa N, Harada H, Itakura M, Molnár E, Abe M, Sakimura K, Shigemoto R (2016) The number and distribution of AMPA receptor channels containing fast kinetic GluA3 and GluA4 subunits are target-cell-dependent at auditory nerve synapses. Auditory System Gordon Research Conference, Bates College in Lewiston, ME, July 10-15.
89. Antunes F., Kandler K., **Rubio M.E.** (2016) Lack of GluA3 AMPA receptor subunit alters synaptic transmission in the auditory nerve endbulb of Held synapse. Auditory System Gordon Research Conference, Bates College in Lewiston, ME, July 10-15.
90. García-Hernández S., **Rubio M.E.** (2016) Impaired auditory processing and altered synaptic structure in mice lacking GluA3 AMPA glutamate receptors. Auditory System Gordon Research Conference, Bates College in Lewiston, ME, July 10-15.
100. García-Hernández S., **Rubio M.E.** (2017) Impaired auditory processing and altered synaptic structure in mice lacking GluA3 AMPA glutamate receptors. 40th Annual Association for Research in Otolaryngology MidWinter Meeting. Baltimore, MD, February 11-15.
101. Skobel S., Cai H.-M., Rutherford M.A., **Rubio M.E.** (2018) Altered AMPAR subunit expression and sex-specific vulnerability to noise-induced synapse loss and deafness in GluA3 KO mice. Auditory System Gordon Research Conference, Bryant University, Smithfield, RI, July 8-13.
102. Skobel S., Cai H.-M., Rutherford M.A., **Rubio M.E.** (2019) Altered AMPAR subunit expression and sex-specific vulnerability to noise-induced synapse loss and deafness in GluA3 KO mice. 43rd Annual Association for Research in Otolaryngology MidWinter Meeting. Baltimore, MD, February 10-14.
103. Owoc M., Brockway B, **Rubio M.E.**, Sadagopan S, Kandler K (2022) Embryonic medial ganglionic eminence cells survive and integrate into the inferior colliculus of adult mice. 45rd Annual Association for Research in Otolaryngology MidWinter Meeting. San José, CA, February 5-9.
104. Lozier N, Muscio S, Cai H.M., **Rubio M.E.** (2022) Sex differences in AMPA Receptor Subunit mRNA with Fast Gating Kinetics in the Mouse Cochlea. 45rd Annual Association for Research in Otolaryngology MidWinter Meeting. San José, CA, February 5-9.
105. Rutherford M.A., Bhattacharyya A., Xiao M., Cai H.M., Pal I., **Rubio M.E.** (2022) GluA3 subunits are required for the appropriate assembly of AMPA receptors at cochlear afferent synapses and for presynaptic modiolar-pillar features. 43rd Annual Association for Research in Otolaryngology MidWinter Meeting. San José, CA, February 5-9.
106. Rutherford M.A., Bhattacharyya A., Xiao M., Cai H.M., Pal I., **Rubio M.E.** (2022) GluA3 subunits are required for the appropriate assembly of AMPA receptors at cochlear afferent synapses and for presynaptic modiolar-pillar features. Molecular Biology of Hearing and Deafness (MBHD). Iowa City, IA, May 24-27.
107. Rutherford M.A., Bhattacharyya A., Xiao M., Cai H.M., Pal I., **Rubio M.E.** (2022) GluA3 subunits are required for the appropriate assembly of AMPA receptors at cochlear afferent synapses and for presynaptic modiolar-pillar features. Midwest Auditory Research Conference (MARC). Ann Arbor, MI, June 23-25.

108. Lozier N, **Rubio ME** (2023) Ovary-Derived 17 β -Estradiol Leads to Higher ABR Wave1 Amplitude and AMPA Receptor Subunit Transcription in the Female Mouse Cochlea. 46th Annual Association for Research in Otolaryngology MidWinter Meeting. Orlando, FA, February 11-14.
109. Pal I, Rutherford MA, Bhattacharyya A., Xiao M, **Rubio ME** (2023) GluA3 Subunit of AMPA Receptors Are Required to Prevent Synaptopathy at Inner Hair Cell Ribbon Synapses in Female Mice. 46th Annual Association for Research in Otolaryngology MidWinter Meeting. Orlando, FA, February 11-14.
110. Mukhopadhyay M, Yang-Hood A, Ohlemiller KK, Xiao M, Warchol M, Lee SJ, Seal RP, **Rubio ME**, Rutherford M (2023) Glutamatergic Quantal Transmission in Peripheral Vestibular Function. 44th Annual Association for Research in Otolaryngology MidWinter Meeting. Orlando, FA, February 11-14.
111. Pal I, Rutherford MA, Bhattacharyya A., Xiao M, **Rubio ME** (2023) GluA3 Subunit of Ampa Receptors Are Required to Prevent Synaptopathy at Inner Hair Cell Ribbon Synapses in Female Mice. Auditory SPLASH Meeting, University of Pennsylvania, PA, April 23, 2023.
112. Lozier N, Aizenstein M, **Rubio ME** (2024) Hormone-Dependent Sex Differences in the Auditory Brainstem Response in Mice. Society for Endocrinology (SBN) 30th Annual Meeting. Columbus, OH, June 23-26.
113. Lozier N, Aizenstein M, Essence D. Williams, **Rubio ME** (2025) Gonad-derived hormones mediate sex differences in the maturation of peripheral auditory sensitivity in C57BL/6J mice from adolescence to adulthood. 48th Annual Association for Research in Otolaryngology MidWinter Meeting. Orlando, FA, February 22-26.
114. Pal I, Mir BA, Aizenstein M, **Rubio ME** (2026)
49th Annual Association for Research in Otolaryngology MidWinter Meeting. San Juan, PR, February 7-11.
115. **Rubio ME** (2026) The Yin and Yang of AMPA Glutamate Receptors at Auditory "Nerve" Synapses Donal Caspary honorary symposia. 49th Annual Association for Research in Otolaryngology MidWinter Meeting. San Juan, PR, February 7-11.

Highlights in Local Journals and Websites

- Featured article in "Sight + Sound" newsletter from the Eye & Ear Foundation, Pittsburgh, PA. Fall, 2016.
- Featured article in the "Revista del Ilustre del Colegio de Médicos de la Provincia de Alicante" (Official Journal of the Association of Clinical Doctors of the Province of Alicante", Alicante, Spain. N° 200, page 41. January 2019, <http://www.informeco.es/revista/200/index.html>.
- University of Pittsburgh School of Medicine. **Researcher Spotlight: Making Gains in Understanding Hearing Loss.** <https://www.health.pitt.edu/news/researcher-spotlight-making-gains-understanding-hearing-loss>

PROFESSIONAL ACTIVITIES

TEACHING:

Courses Taught

University of Alicante (Spain) 1990-1994

School of Medicine: Human Histology. 1990-1994.

- Average Hours of lectures/lab: 20; Average Number of students: 100.

University of Connecticut 2001- Nov 2009

Graduate Courses

- PNB 301 Fundamentals of Neurobiology; Basic Neuroanatomy; Fall 2002, 2003
Average Hours of lectures: 20; Average Number of students: 20.
- PNB 5396 Neuroanatomy; Fall 2002, 2003, 2004, 2005, 2006, 2007, 2008
Average Hours of lectures: 25; Average Number of students: 14.
- PNB 5397 Research; Since Spring of 2003- 2009
PhD research
- PNB 5495 Research; Fall 2004
PhD research

Undergraduate Courses

- PNB 2265 Human Anatomy and Physiology; Spring 2002, 2003, 2004, 2005, 2007
Average Hours of lectures: 20; Average Number of students: 150.
- PNB 2275 Human Anatomy and Physiology; Spring 2002, 2003, 2004, 2005, 2007
Average Hours of lectures: 20; Average Number of students: 70.
- PNB 3276 Molecular Neuroanatomy; Fall 2003, 2005, 2007, 2009
Average Hours of lectures: 12; Average Number of students: 40.
- PNB2292W Honors Thesis, Spring 2002, 2004, 2005, 2006, 2008
Average hours: 20; Average number of students: 8.
- PNB 2299 Independent Study; All the semesters since Fall 2001- 2009
Average hours: 20; Average number of students: 27.
- PNB 2298 Specific Topics, Spring 2004, 2005, 2006; Fall 2006, Spring 2008
Average hours of lectures: 5; Average number of students: 27.
- PNB 2297 Brain Cytoarchitecture and Function; Spring 2006
Hours of lectures: 22; Number of students: 20.

University of Pittsburgh December 2009 - present

Medical Students (including MSTP/PST students)

- RBMK2 - Physician Scientist Training Program "Research Basis of Medical Knowledge" participant/lectured; Spring 2010. Hours of lectures: 2; Number of students: 8.
- MS1 Neuroscience course (neuroanatomy laboratories; problem-based learning sessions; workshops). Spring 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.
- MS1 Neuroscience course (Lecture). Spring 2019, 2020. Hours of lectures: 1 ½; Number of students: 125.
- RBMK2 - Physician Scientist Training Program "Research Basis of Medical Knowledge" Course. Co-Director; Spring Semester 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023. Hours of lectures: 4-5 ½; Number of students: 15-20.

Graduate Courses

- *CNUP Journal Club*; Spring 2011; hours: 11; Number of Students: 10.
- *CNUP Pro-Seminar course*; January 2011; September 2011; February 2013; April 2014; February 2015; October 2015; November 2016; October 2017; October 2018. Number of Students: 10-20.
- Audiology Seminar Series. February 2015. Audiology students (1-4 year) and faculty.
- CNUP Journal Club; Fall 2021; Spring 2022; Course Co-Director; hours: 15 per semester; Number of Students: 13-17.
- CNUP Ethics Course; Spring 2022; 2 lectures; 3 hours; Number of Students: 13.
- CNUP Journal Club; Fall 2022; Spring 2023; Course Co-Director; hours: 15; Number of Students: 11-17.
- CNUP Ethics Course; Spring 2023; 2 lectures; 3 hours; Number of Students: 11
- CNUP Journal Club; Fall 2023; Spring 2024; Course Co-Director; hours: Spring: 15, Fall: 34; Number of Students: 17.
- CNUP Ethics Course; Spring 2024; 1 lecture; 1 and 1/2 hours; Number of Students: 18
- CNUP Ethics Course; Spring 2025; 1 lecture; 1 and 1/2 hours; Number of Students: 21

International Courses

University of Salamanca (Spain)

Graduate Courses

- Techniques in Neuroanatomy, PhD Neuroscience Program, University of Salamanca, Spain, May 2004. Hours of lectures: 8; Number of students: 8.
- MEDS 5377 – Neurobiology of Hearing; University of Salamanca, Spain, June 2010. Hours of lectures: 4; Number of students: 24.

Postdocs, and graduate and undergraduate students whom I have supervised in my lab

Postdoctoral Fellows:

- | | |
|--|--------------------------------|
| - Moriana García (fellow supported by CNPq-Brazil) | February 2004 – February 2005 |
| - Ricardo Gómez-Nieto | September 2006 – December 2008 |
| - Hongning Wang | May 2009 - October 2012 |
| - Mohammad Shyful Islam | May 2009 - 2010 |
| - Cheryl Clarkson | August 2010 – July 2015 |
| - Sofía García-Hernández PhD | August 2013 - June 2017 |
| - Flora Antunes PhD | January 2014 - June 2017 |
| - Nicholas Lozier PhD | October 2020 – February 2025 |
| - Indra Pal PhD | December 2020 - present |
| - Bilal Mir PhD | June 2025 - present |

T32 (postdoctoral committee member)

- | | |
|--|------------|
| - Jason Castro | 2012 |
| - Eva Bach | 2014- 2016 |
| - Tamara Perez-Rosello (NRSA/F32/DC011664) | 2015 |
| "Neuromodulatory effects of zinc in an auditory brainstem" | |
| Role: Co-Sponsor (Rubio) | |

Graduate Students:

University of Connecticut

- | | |
|---|-------------------------|
| - Theodora Papanikolau | Fall 2003 |
| - Babette de Boer | Fall 2003 - Spring 2004 |
| - Amy Coleman | Fall 2005 - Spring 2006 |
| - Andrew Pagano | Fall 2005 - Spring 2006 |
| - Stephanie Rudolph; Foreign visiting student | Spring 2007 |
| - Jason Randal | Fall 2008 – Spring 2009 |
| - Katerina Ikonomu | Fall 2008 – Summer 2009 |

University of Pittsburgh

- | | |
|--|-----------------------|
| - Kevin Zitelli (rotating student) | Fall 2015 |
| - Samantha Skobel (rotating student) | Spring 2017 |
| - James Elliot Lawler (TRANSLATES Program) | Fall 2025-Spring 2026 |

PhD (Committee member; Mentor*)

- | | | |
|-------------------------------|----------------------------------|-----------------------------|
| - Mark Larsen* | (University of Connecticut) | Fall 2002-2005 |
| - Ricardo Gómez-Nieto | (University of Salamanca, Spain) | 2005 |
| - Jessica Lenington | (University of Connecticut) | 2008 - 2012 |
| - Xuenjing Li | (University of Connecticut) | 2002 - 2008 |
| - Faez Siddiqi | (University of Connecticut) | 2004 - 2010 |
| - Yan-Fang Wang | (University of Connecticut) | 2004 - 2010 |
| - Peter Adelman | (University of Pittsburgh) | 2011 - 2012 |
| - Emily Parker | (University of Pittsburgh) | 2017 - present |
| - Samantha Skobel* | (University of Pittsburgh) | 2017 - 2018 |
| - Shang Ma | (University of Pittsburgh) | 2019 |
| - Yizhi (Nick) Li | (University of Pittsburgh) | 2020 - 2024 |
| - Mahmoud Khalil | (University of Pittsburgh) | Spring 2021 |
| - Alessandra Larimer-Picciani | (University of Pittsburgh) | Fall 2023 – present (Chair) |
| - Megan Arnold | (University of Pittsburgh) | Fall 2024 - present |

T32 (Committee member)

- | | | |
|--------------------|----------------------------|-------------|
| - Merissa Remus | (University of Pittsburgh) | 2013 |
| - Samantha Skobel* | (University of Pittsburgh) | 2017 - 2018 |
| - Emily Parker | (University of Pittsburgh) | 2017 - 2019 |

International PhD Thesis Reviewer

- | | | |
|------------------------|--|------|
| - Sara Pulido | (Universidad Autónoma, Madrid, Spain) | 2019 |
| - Cristian A. Aedo | (Universidad de Salamanca, Salamanca, Spain) | 2020 |
| - Carmen Morais Moreno | (CEU San Pablo University (Madrid, Spain) | 2023 |
| - Mario Gómez-Martinez | (Universidad de Salamanca, Salamanca, Spain) | 2025 |

Master (Committee member; Mentor*)

- | | | |
|------------------------|-----------------------------|---------------------|
| - Heather Brainsbridge | (University of Connecticut) | M.S. Spring of 2003 |
| - Christina Alevras* | (University of Connecticut) | M.S. Spring of 2003 |

- Sowmya Sridharan*	(University of Connecticut)	M.S. Spring of 2006
- Gregory Bouchard*	(University of Connecticut)	M.S. Fall of 2006
- Keith Dlugolenski*	(University of Connecticut)	Fall 2006 – Spring 2007
- Yuanye Zhang*	(University of Connecticut)	M.S. Dec. 2008

Visiting Scholars

Sandy Hui-Oin Lu MD	Department and Graduate Institute of Biology and Anatomy National Defense Medical Center, Taiwan	Feb. 2010 – Aug. 2010
Carolina Campagnola MD	Policlinico Universitario A. Gemelli, Rome, IT	Aug. 2016 – Nov. 2016

Undergraduate Students Research (Senior Thesis*)

University of Connecticut (PNB298/299 Independent Study and 292W/ senior thesis)

- Katharine R. Cecchini	Fall 2001 and Spring 2002
- Rebecca A. Ross	Fall 2002
- Jessica L. Douyard*	Summer 2002; Fall 2002; Spring 2003; Fall 2003; Spring 2004
- Leslie V Clermont	Summer 2003; Fall 2003
- Keith Dlugolenski*	Summer 2003; Fall 2004; Spring 2005; Fall 2005; Spring 2006
- Israel Cordero	Fall 2003
- Torrey B Trzcienski	Fall 2003; Spring 2004
- Tamir Friedman*	Spring 2004; Fall 2004; Spring 2005
- Ashraf Panjwani*	Spring 2004; Fall 2004; Spring 2005
- Deepti Nagaraja	Summer 2004
- Joshua A. Orabone	Fall 2004; Spring 2005
- Bina Patel*	Spring 2005
- Ukti P. Gohel	Summer 2005
- Rebecca Finco	Fall 2005; Spring 2006; Fall 2006; Spring 2007
- Ilva Dautaj	Fall 2005; Spring 2006
- Cameron B Lassiter	Spring 2006; Summer 2006
- Nicole Ennis	Spring 2006
- Brittany Hirth	Spring 2006
- Daniel Bellerose*	Summer 2006; Fall 2006; Spring 2007
- Lina Patel*	Summer 2006; Fall 2006; Spring 2007
- Leah Kirychuk	Fall 2006
- Kathryn Gudsruk*	Fall 2006; Spring 2007; Fall 2007
- Victoria Tofield	Fall 2006; Spring 2007
- Nathan Maltezos*	Summer 2007; Fall 2007; Spring 2008
- Kristin Slegle	Summer 2007 (RUI student; NSF)
- Paula Lucuara	Spring 2008
- Irene Kannyo	Summer 2008 (RUI student; NSF)

University of Pittsburgh

- Joshua Penderville*	Fall 2010- Spring 2012, Neuroscience Major Thesis
- Humza Salim	Spring 2010 - 2011
- Denisse Sequeira	Fall 2011; Spring 2012
- Jasmine Kashkoush	Fall 2012; Spring 2013

- Noor Moin*	Spring 2013-2014
- Nuria Marquez	Fall 2013, Spring 2014
- Minyoung Park (Jenny)*	Fall 2014 - Spring 2016; Neuroscience Major Thesis
- Varun Rao	Spring 2017; Fall 2017; Spring 2018; Fall 2018; Spring 2019
- Jacob Beckman	Summer 2017; Fall 2017
- Mason Trinkle	Spring 2019 (B.S. committee; official Thesis reader)
- Julia Coakley	Summer 2019
- Ashely Bang	Spring 2021 – Spring 2022
- Isabell Gesner	Fall 2021
- Mare Kaulakis	Summer 2022; Summer Premedical Academic Enrichment Program (SPAEP)
- Mathew Smith	Fall 2022 – present
- Max Aizenstein	Summer 2023 - Spring 2024 Summer Undergraduate Research Program
- Olivia Andrews	Summer 2023 Summer Premedical Academic Enrichment Program (SPAEP)
- Rhheaa Mheta	Fall 2023 - Spring 2024
- Ningberi Tchontchoko	Summer 2024 Summer Premedical Academic Enrichment Program (SPAEP)
- Joey Mantena	Summer 2024 Summer Undergraduate Research Program
- Maya Sivakumar	Fall 2024, Spring 2025 Center for Neuroscience Summer Research Program 2025

Honors Undergraduate Students (Research and Thesis* PNB292W; 299)

University of Connecticut

- Benjamin T. Brown*	Spring 2002
- Chantelle Garzone*	Fall 2003; Spring 2004
- Kristine A. Coppola*	Spring 2005; Fall 2005; Spring 2006
- Maura Temchim*	Fall 2006; Spring 2007; Fall 2007; Spring 2008
- Emily Cote*	Fall 2006; Spring 2007; Summer 2007; Fall 2007; Spring 2008
- Laura Macca*	Fall 2008; Spring 2009; Summer 2009
- Lauren Cunninham*	Fall 2008; Spring 2009

University President Scholars Undergraduate Students (Research and Thesis* PNB 299)

University of Connecticut

-Megan Joilecour*	Fall 2007; Spring 2008
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Undergraduate Advisees

Univ. of Connecticut

Adebamowo, Tob; Bellerose, Daniel A; Brady, Caitlyn Elizabeth; Brotz, Christina; Chawla, Amrita; Chimileski, Scott; Dlugolenski, Keith Michael; Finco, Rebecca Ann; Finnengan, Kyle; Garrinson, Gregory; Goldsmith, Andre; Hovanes, Mark Anthony; Huizerga, Megan; Irons, Michael Joseph; Jensen, Emily Joy; Laizer, Tiffany Leanne; Lazo, Elizabeth Nicole; Lee, Kwang Lok; Kwok, Jenny; Molaver, Alex; Lessard, Mark Joseph; Lones, Alison; Malastras, Cara Elisa; Mcdonald, Cara Frances; Orabone, Joshua A.; Porter, George; Rich, Chana; Richardson, Brie; Roach, Daniel; Salazer-Reid, Caitlin; Scheer, Brittany; Shiromiya, Akira; Smith, Ryan Marie; Sulewski, Katherine Marie; Sundeen, Jason; Szejewski Jr, Thomas Robert; Tran, Duyen; Ulstad, Ryan Joseph; Weshake, Mark; Whiting, Brittany Lee

Undergraduate Honors Students Advisee

Univ. of Connecticut

Abraham, Aron; Akella, Padmastuti; Pruitt, Candyce; Parihh, Shan; Rich, Chana

Undergraduate President Scholar Student Advisee

Univ. of Connecticut

- Jolicoeur, Megan Elizabeth; Epsilon of Connecticut, Phi Beta Kappa

Undergraduate research awards

Univ. of Connecticut

- Lina Patel; Outstanding Senior Undergraduate in PNB Award; Spring 2005

- Emily Cote; Outstanding Senior Undergraduate in PNB Award; Spring 2008

Medical Scientist Student Career Advisor

University of Pittsburgh

- Marianna Owoc	2016 - 2021
- Amy Sentis	2017 – 2025
- Megan Arnold	2022 - present
- Nadine Oury	2023 - present
- Collin Lehman	2024 - present
- Madison Chew	2025 - present

RESEARCH

1. Current Grant Support:

R01 DC 013048-11 (Rubio)	2/1/2025 – 1/31/2030	60%
NIDCD/NIH	Total award: \$3,913,274	

Title: Mechanisms of hypersensitivity to sound-induced cochlear damage

The goal of this study is to determine sex differences in the structure and molecular components of the first sensory synapse in the auditory pathway in adolescence.

NIH S10 Shared Instrumentation Grant Program	(Stoltz).	10/1/2013 - present	10%
Title: JEOL Freeze Fracture (JFDII) System		\$317,445 Total Direct Costs	

Role: Co-Investigator (**Rubio**; unpaid)

This was a one-time equipment grant to get a JEOL Freeze Fracture (JFDII) System for CBI, University of Pittsburgh School of Medicine. I do not get any money but I share 10% of effort.

R01 DC014712 (Rutherford)	04/01/2022-03/31/2027	2.5%
NIH/NIDCD		

Title: Excitability and excitotoxicity in Type-I cochlear afferent: synapse structure and function.

Role: Co-Investigator; Subaward PI (**Rubio**)

2P01AG051443-06A1 (Yamoah)	09/01/2023– 08/31/2028	10%
PPG - NIA/NIH		

Title: Determinants of age-induced hearing loss and reversal strategies

Role: P3 Project Leader (**Rubio**)

Title: Alterations and mechanisms of auditory information processing in the aging auditory pathway

Pending

Parkinson's Investigator-Initiated Research Award (Seal, Hooks) 9/25-8/30 5%
DoD
Title: Protection Against Striatal Circuit Changes to Prevent PD Pathology and Disease Progression
Role: **Co-I**

2. Prior Grant Support:

2R01 R01DC013048-06 (**Rubio**) 3/1/2013-1/31/2025 60%
NIDCD/NIH \$2,940,142 Total Direct Costs
\$1,070,605 Total Indirect Costs

Title: Mechanisms of hypersensitivity to sound-induced cochlear damage
The goal of this study is to determine at the first sensory synapse in the auditory pathway, the important question of how changes in AMPA receptor subunit composition lead to sex differences in hearing loss.

1K99NS126569-01 (Sheahan) 04/01/2022 - 03/31/2024
NIH/ NINDS
Title: Understanding spinal neuropeptide signaling in itch
Role: Co-mentor (**Rubio**; unpaid)

Tobacco Funds (Kandler) 06/01/2018- 05/31/2022 8.5%
Commonwealth of PA Dep. Of Heath \$20,136/Year Direct Costs
Tobacco Phase 17 Formula Funds
Role: Co-Investigator (**Rubio**)

The Pennsylvania Lions Hearing Research Foundation (**Rubio**) 8/01/2021 – 7/31/2022
Title: Effect of sex chromosomes on the molecular mechanism of sex differences in peripheral auditory processing.

5R01DC04199 (Kandler) 7/1/2016 – 6/30/2022 5%
NIH/NIDCD \$18,972/Year Direct Costs

Title: Development of Neuronal Circuits in the Auditory System
Role: Co-Investigator (**Rubio**)

The long-term objective of this research is to understand the mechanisms by which auditory circuits in the mammalian brainstem become functionally and anatomically organized.

1R56DC013048 (Rubio) 8/1/2018 – 31/7/2019 25%
NIH/NIDCD \$200,000/Year Direct Costs
\$103,960/Year Indirect Costs

Title: Mechanisms of hypersensitivity to sound-induced cochlear damage
This is a bridge funding award and will address the important question of whether changes in AMPA receptor subunit composition at the first sensory synapse in the auditory pathway, contribute to sex differences in hearing loss in females and males.

1R01DC013048 (Rubio) 1/3/2013 – 31/7/2018 60%
NIH/NIDCD \$1,876,324 Total Direct Costs
\$955,153 Total Indirect Costs

Title: Anatomical and functional properties of auditory nerve synapses
The major role is to determine anatomically and functionally auditory nerve in response to experience.

3R01DC013048-02S1 3/1/2014 – 2/28/2016
NIH/NIDCD \$116,912 Total Direct costs

Title: Anatomical and functional properties of auditory nerve synapses

Diversity supplement

UPP Foundation (PI: Rubio)
UPMC

7/1/2016 – 6/30/2017
\$50,000 Total Direct costs

Title: Response of glial cells to conductive hearing loss
The goal of this study is to determine the response of astrocytes to conductive hearing loss.

1R01NS078331 - 01A1 (Wilcox)
NINDS/NIH

6/1/2012 – 5/31/2015 8%
\$61,819 Total Direct Costs (Subaward)
\$31,837 Total Indirect Costs

Title: Calcium signaling in a model of epilepsy.
Role: Co-Investigator; Subcontract PI (Rubio)
The major goal is to investigate the morphological and molecular response of reactive astrocytes in the hippocampus in a model of epilepsy.

The Pennsylvania Lions Hearing Research Foundation (Rubio)
\$20,000 Total Direct Costs

7/01/2014 – 6/30/2015 2%

Title: Binaural Effects of unilateral hearing loss in the cochlear nucleus.
The major goal is to investigate how unilateral hearing loss affect the sound processing and excitatory synapses of the contralateral cochlear nucleus

RO1 DC007905-01 (PI: Tzounopoulos)
NIDCD/NIH

2/1/2012 - 01/31/2014 7.5%
\$25,000 (salary support)

Cell-specific synaptic plasticity in auditory brainstem.
Role: Co-Investigator (Rubio)

University of Pittsburgh Intramural Funding (Rubio)

12/1/2012- 2/28/ 2013
\$50,000 Total Direct Cost

RO1 DC006881-01A2 (Rubio)
NIH/NIDCD

12/31/2005 – 11/30/2012 25%
\$985,000 Total Direct Costs
\$492,000 Total Indirect Costs

Molecular neuroanatomy of the cochlear nucleus in deafness
The major goal is to analyze the effects of deafness on the expression of excitatory and inhibitory neurotransmitter receptors in the cochlear nuclei.

The Pennsylvania Lions Hearing Research Foundation (Rubio)

6/30/2010 – 5/31/2011 5%
\$19,000 Total Direct Costs

Title: Molecular and morphological changes of reactive astrocytes in response to monaural conductive hearing loss.
The major goal is to investigate basic aspects of astrogliosis at the light microscopic level in cochlear nucleus.

RO1 NS038752-07 (De Blas)
NIH/NINDS

02/01/2005 - 01/31/2011 0.4%

GABA_A receptor-interacting proteins
The major goal is to study the relationship between subunit composition and synaptic localization of the GABA_A receptors.
Role: Co-investigator (no cost associated)

RO1 NS39287-08 (De Blas)
NIH/NINDS

02/01/2005 - 01/31/2010 5%

Localization of GABA_A receptors and subunit composition

The major goal is to study the relationship between subunit composition and synaptic localization of the GABA_A receptors.

Role: Co-investigator (no cost associated)

R01 DC007681 (Bordey)	07/01/2007– 04/30/2009	5%
NINDS/NIH	\$106,542 Total Direct Costs (Subaward)	

Title: Glial cell function on SVZ neurogenesis.

The major goal is to investigate the mechanisms of neuron-glia interaction in the SVZ.

Role: Co-investigator; Subcontract PI (Rubio).

R01 DC007905-01 (Tzounopoulos)	02/07/2006 – 1/31/2008	15%
NIH/NIDCD	\$51,411 Total Costs (Subaward)	

Cell-specific synaptic plasticity in auditory brainstem

The major goal is to study the differences in the plasticity of neurons and their connections in the auditory pathway.

Role: Co-investigator; Subcontract PI (Rubio)

NO4-012 (Rubio)	04/01/2004- 05/31/2007
DOD/Nursing	\$22,083 Total Cost

The effects of heat acclimation on the expression of glutamate receptors, Fos and CREB in the rat hypothalamus.

The goals were to identify the hypothalamic regions involved in heat acclimation.

Research Foundation (Rubio)	7/1/2002-6/30/2004
University of Connecticut	\$18,160 Total direct costs

Title: Glial cells, synaptic function and receptor targeting during development and in adult brain.

Goal: to determine the distribution of AMPA receptors in Purkinje cells and Bergmann glia in the brain.

Alexander von Humboldt Foundation Fellowship (Rubio)	10/1/1999-7/31/2001	%100
Alexander von Humboldt Foundation (Germany)	DM74,000 (\$34,568) Total Direct Costs	

Title: Distribution of P2X receptors in the brain.

Goal: to determine the subcellular localization of P2X receptors.

Consultant

U24 NS109113-01 (Trimmer)	9/30/2018 – 6/30/2024
NIH/NINDS Brain Initiative	

Title: Recombinant Immunolabels for Nanoprecise Brain Mapping Across Scales

Role: Scientific Steering Group (SSG) member (**Rubio**; unpaid)

4. Journal Editor

- December 2016 – present. Review Editor in Frontiers in Molecular Neuroscience.
- September 2019- 2021. Guest Editor in The Journal of Brain Sciences.
- March 2019 – present. Associate Editor in Frontiers in Molecular Neuroscience.
- August 2019 - present. Board Editor in The Journal of Brain Sciences.
- November 2020 – October 2022. Guest Editor in Frontiers in Neuroanatomy.

5. Journal Refereeing

- Auditory and Neurotology
- Brain Behavior and Evolution
- Brain Behavior and Immunity

- Brain Research
- Brain Research Reviews
- Brain Research Bulletin
- Brain Sciences
- Brain Structure and Function
- Cerebral Cortex
- Cerebellum
- Current Opinion in Investigational Drugs
- European Journal of Neuroscience
- Experimental Cell Research
- Frontiers in Aging Neuroscience
- Frontiers in Cellular Neuroscience
- Frontiers in Molecular Neuroscience
- Frontiers in Neuroscience
- Frontiers in Neurology
- Frontiers in Neuronal Circuits
- Frontiers in Neuroanatomy
- Journal of the Association for Research in Otolaryngology (JARO)
- Journal of Cell Science
- JCI insight
- Journal of Comparative Neurology
- Journal of Physiology
- Journal of Neurochemistry
- Journal of Neuroscience
- Journal of Neuroscience Methods
- Journal of Neurophysiology
- Journal of Visualized Experiments (JoVe)
- Hearing Research
- Hippocampus
- Neuroscience
- Neuroscience Letters
- Neuron Glia Biology
- Neural Plasticity
- PlosOne
- Scientific Reports
- Trends in Anatomy and Physiology
- The Anatomical Records

6. Grant Reviewer

- 2006. National Science Foundation (Ad Hoc)
- Spring 2008. External PTR reviewer Tulane University, New Orleans, LO
- Fall 2008. National Science Foundation, Panel: Organization within Neural Systems Cluster
- 2009. National Science Foundation (Ad Hoc)
- 2012. The Earth and Life Sciences division of Netherlands Organisation for Scientific Research (NWO/ALW)
- March 2013. NIH Special Emphasis Panel/Scientific Review Group
- March 2013. MRC Medical Research Council; External reviewer
- March 2013. University of Pittsburgh Clinical and Translational Science Institute: Kaufman Pilot Project Program in Pain Research

- June 2013. NIDCD HB Fellowship Applications NIH Special Emphasis Panel/Scientific Review Group, (Ad Hoc)
- January 2014. Clinical Collaborative Research Pilot Program (BaCCoR), University of Pittsburgh Clinical and Translational Science Institute
- February 2014. AUD Study Section NIH RO1, RO21, R03 (Ad Hoc)
- July 2014 - June 2020. AUD Study Section NIH RO1, RO21, R03 (Regular)
- July 2014 - June 2022. Scientific Advisory Committee (SAC) of the American Tinnitus Association
- June 2016. ZRG1 MDCN-R (86) Academic Research Enhancement Award (AREA) (Ad Hoc)
- March 2017. ZRG1 MDCN-R (86) Academic Research Enhancement Award (AREA) (Ad Hoc)
- March 2018. ZRG1 MDCN-R (86) Academic Research Enhancement Award (AREA) (Ad Hoc)
- March 2019. German Research Foundation (Ad Hoc)
- June 2019. ZRG1 MDCN-R (86) Academic Research Enhancement Award (AREA) (Ad Hoc)
- May 2020. German Research Foundation (Ad Hoc)
- November 2020. Action on Hearing Loss (The Royal National Institute for Deaf People), UK.
- October 2021. ZDC1 SRB-X (66) 1 NIDCD Clinical Research Center Review (Ad Hoc)
- March 2022. NIH Special Emphasis Panel/Scientific Review Group 2022/05 ZRG1 IFCN-E (02) M (Chair) (Ad Hoc)
- March 2023. NIH Special Emphasis Panel/Scientific Review Group 2023/05 ZRG1 ICN-B (02) M (Ad Hoc)
- March 2023. NIDCD LRP- ZDC1 SRB-Y (54)

7. List of current research interests

- Sensory experience synaptic plasticity
- Synaptic scaling/homeostasis plasticity
- Neuron-glia interaction
- Deafness, conductive hearing loss
- Mechanisms of hypersensitivity to sound-induced cochlear damage
- Sex differences in hearing and hearing loss
- GRIA disorders

8. Seminars and invited lectureships related to your research.

Local Presentations

- April 2008. Dept. Otolaryngology, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA
- February 23, 2010. The Neurotransmitter Seminar Series, Department of Neurobiology, Univ. of Pittsburgh, School of Medicine, Pittsburgh, PA
- June 27, 2012. Department of Communication Science and Disorders, Univ. of Pittsburgh, Pittsburgh, PA
- July 31 – August 2, 2018. 6th annual iGluR Retreat, Pittsburgh, PA
- September 20, 2019. Auditory and Vestibular T32 Seminar, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA
- October 10, 2022. Department of Neurobiology, University of Pittsburgh School of Medicine, Pittsburgh, PA
- October 14, 2024. Auditory and Vestibular T32 Seminar, Univ. of Pittsburgh School of Medicine, Pittsburgh, PA
- August 18, 2025. Center for Neuroscience University of Pittsburgh Summer Undergraduate Research Program, University of Pittsburgh, Pittsburgh, PA

- November 8, 2025. Department of Neurobiology, University of Pittsburgh School of Medicine, Pittsburgh, PA
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Regional Presentations

- August 1, 2014. Pennsylvania Lions Research Foundation Annual Meeting, Harrisburg, PA

National Presentations

- September 1998. Hearing and Balance Seminar Series, Department of Otolaryngology, John Hopkins, Baltimore, USA
- May 1999. Interest Neurobiology Group, NIH, Bethesda, USA
- January 2001. Neuroscience Seminars, Department of Physiology and Neurobiology, Univ. of Connecticut, Storrs, CT
- February 2001. Synapse Structure and Function, Biology Department, Boston University
- February 2002. Biology Seminar Series, Univ. of Connecticut, Storrs, CT
- February 2003. Neuroscience and Behavior Program Colloquium, Univ. of Massachusetts, MA.
- March 2003. Neuroscience Seminars, Univ. of Connecticut, Psychology Department, Storrs, CT
- March 2003. PNB187 Physiology and Neurobiology Univ. of Connecticut, PNB187 Physiology and Neurobiology, Storrs, CT
- June 25 - 27, 2004. 3rd Symposium on Molecular Mechanisms in central auditory function, plasticity and disorders, Jackson Hole, WY
- February 2006. Symposium: Activity dependent plasticity in the auditory brainstem. 29th Annual MidWinter Meeting of the Association for Research in Otolaryngology (ARO), Baltimore, MD
- January 2007. Neuroscience Series, Rosalind Franklin Medical School, Chicago, IL
- April 2, 2008. Hearing and Chemical Senses Program, Kresge Hearing Research Institute. Univ. of Michigan, Ann Arbor, MI
- February 2009. Neuroscience Seminars, Department of Neuroscience, UConn Health Center, Farmington, CT
- March 8 - 10, 2009. Synapses: Postsynaptic Mechanisms of Plasticity; Airlie Conference Center, Warrenton, VA
- March 2010. Hearing and Balance Seminar Series, Department of Otolaryngology, John Hopkins, Baltimore, MD
- July 9, 2010. Neurons and Glia Seminar Series, Department of Pharmacology & Toxicology, Univ. of Utah, Salt Lake City, UT
- February 19, 2011. Symposium: Amino Acid Transmitter Receptors: Development, Trafficking, Function and Plasticity. 34th Annual MidWinter Meeting of the Association for Research in Otolaryngology (ARO). Anaheim, CA
- October 20, 2011. Neuroscience Seminar Series, Department of Anatomy and Neurobiology, Northeast Ohio Medical University, OH
- December 4, 2012. NIDCD Seminar Series, NIH, Bethesda, MD
- April 2013. Neuroscience Seminars, Department of Neuroscience, UConn Health Center, Farmington, CT.
- April 30, 2015. Neurons and Glia Seminar Series, Department of Pharmacology & Toxicology, University of Utah, Salt Lake City, UT
- January 2016. Cellular Signaling Seminar Series, Departments of Neuroscience and Cell Biology Seminar Series, UConn Health Center, Farmington, CT
- July 10-15, 2016. Auditory System Gordon Research Conference, Bates College in Lewiston, ME
- April 12, 2018. Neuroscience Seminar Series, Department of Otolaryngology-Head and Neck Surgery, Washington University School of Medicine, Saint Louis, MO
- April 23, 2018. Neuroscience Seminar Series, University of Texas, Austin, TX

- April 6-9, 2019. Annual Meeting of the American Association of Anatomists (AAA), in conjunction with Experimental Biology, EB, Orlando, FL
- July 1, 2019. Hearing and Chemical Senses Program, Department of Otolaryngology Head and Neck, Kresge Hearing Research Institute. Univ. of Michigan, Ann Arbor, MI.
- September 2023. Center for Hearing and Balance Seminar Series JHU School of Medicine, Baltimore, MD
- September 2025. Neuroscience Seminar Series, Department of Neuroscience, UConn Health Center, Farmington, CT

International Presentations

- March 1998. Glutamate Receptors Seminar, Max Plank Institute for Medical Research, Heidelberg, Germany
- March 1998. Molecular Biology of Neuronal Signals, Max Plank Institute for Experimental Medicine, Göttingen, Germany
- February 2000. Department of Physiology, UCL London, UK
- May 2004. Institute of Neuroscience of Castilla y Leon, University of Salamanca, Salamanca, Spain
- December 2004. Experimental Biology Seminar Series, Univ. of Alicante, Alicante, Spain
- June 2006. Seminar Series, Institute of Biomedical Research “Alberto Sols”, Madrid, Spain.
- August 19-24, 2007. Satellite Symposium “Glutamate Receptors and Transporters as Scaffolding Proteins in Cell Signaling cascades”, within the joint Meeting of the International Society for Neurochemistry and the American Society for Neurochemistry, Cancún, México
- September 2007. Pharmacology and Neuroscience Seminars. Department of Pharmacology, UCL London, UK
- September 4-8, 2007. Symposium: “Functional role of Bergmann glia-Purkinje cell signaling” at the Euroglia Meeting London, UK
- July 18-20, 2008. Kirsten Kjelsberg Osen Symposium 2008 “Advances in Auditory Neuroscience”, Oslo, Norway
- July 2008. Max Plank Institute for Experimental Medicine, Göttingen, Germany
- May 2009. Division of Cerebral Structure, National Institute for Physiological Sciences; Okazaki, Aichi, Japan
- May 2010. Division of Cerebral Structure, National Institute for Physiological Sciences; Okazaki, Aichi, Japan
- August 28-September 2, 2011. International Workshop on Auditory Processing in Cody, Wyoming
- June 2015. Molecular Neuroscience, Institute for Science and Technology (IST), Vienna, Austria
- August 23-28, 2015. International Workshop on Auditory Processing in Cody, Wyoming
- August 18 - 25, 2019. International Workshop on Auditory Processing, Cody, Wyoming
- May 12, 2021. Ribbon Synapse Seminar Series 2021. Univ. of Göttingen, DE & Washington University Saint Louis, MO, USA (virtual)
- May 26, 2021. Garvan Institute of Medical Research, Sidney, AUS (virtual)
- June 8-9, 2023. Symposium: A tribute to Prof. Miguel A. Merchán. The roots of auditory neuroscience in Spain. From Past to Future. Instituto de Neurociencias de Castilla y León, University of Salamanca, Salamanca, Spain
- August 20 - 25, 2023. International Workshop on Auditory Processing, Cody, Wyoming
- December 5 - 2024. CureGrin Research Roundtable (Virtual)
- July 5-7-2025 CureGrin Research Conference; Orlando, FL
- August 17 - 23, 2025. International Workshop on Auditory Processing, Cody, Wyoming
- February 7-11, 2026. Donald Caspary honorary symposia. 49th Annual Association for Research in Otolaryngology MidWinter Meeting. San Juan, PR, February 7-11.

Outreach

- August 2013. Community, nose and throat specialists (CENTS); Eye and Ear Institute, Univ. of Pittsburgh, Pittsburgh, PA
- May 18, 2015. Community, nose and throat specialists (CENTS); Eye and Ear Institute, University of Pittsburgh; Pittsburgh, PA
- December 2019. Radio interview at MRQ; Villena, Alicante, Spain
- April 2025. Mind Over Matter Podcast. A platform dedicated to inspiring and educating young minds about the fascinating field of neuroscience.

Invited talks by members of Rubio laboratory

- September 2013. Cheryl Clarkson (postdoctoral fellow): CNUP 2013 Annual Retreat, Oglebay, VA.
- April 2018. Samantha Skobel (graduate student): Friday Seminars, BST3, Univ. of Pittsburgh, Pittsburgh, PA
- April 2023. Nicholas Lozier (postdoctoral fellow) *Molecular contributions to sex differences in auditory nerve physiology*. Auditory SPLASH Meeting, University of Pennsylvania

Invited Career Advice Seminars

- October 18, 2012. Discussion facilitator at the “Responsible Conduct of Research for Emerging Investigators” Symposium Univ. of Pittsburgh, Pittsburgh, PA
- December 4, 2012. NIDCD Postdoc Career Series, NIH, Bethesda, MD
- May 14, 2013. Invited Panelist at the NIH Career Symposium, NIH, Bethesda, MD

Participation in University Outreach

- 2014 - present. Participation in the Women in Medicine and Science Forum, Univ. of Pittsburgh, School of Medicine, Pittsburgh, PA
- 2023. Career Planning Guidance Panelist. Women in Medicine and Science Forum, Univ. of Pittsburgh, School of Medicine, Pittsburgh, PA
- 2024. Career Planning Guidance Panelist. Women in Medicine and Science Forum, Univ. of Pittsburgh, School of Medicine, Pittsburgh, PA

SERVICE

Scientific Societies

- March 2018 - February 2021. Association for Research in Otolaryngology (A.R.O.) Travel Awards Committee Member.
- June 2018 - present spARO (Association for Research in Otolaryngology) mentorship program, Mentor.
- March 2019 - February 2022. Association for Research in Otolaryngology (A.R.O.) Program Committee Member.
- April 2023 - April 2026. Association for Research in Otolaryngology (A.R.O.) Awards Committee Member and Co-Chair (2025-2028).

Professional

- 1996 - 1999. Council member of the Chesapeake Society for Microscopy
- 1996 - 1999. Newsletter Editor and Chief of the Chesapeake Society for Microscopy
- 2008 - 2009. Council Member of the Connecticut Chapter for the Society for Neuroscience

University and Medical School

Academic

Department of Physiology and Neurobiology, University of Connecticut; (2001-2009)

- 2001-2009. Lab coordinator for PNB 265
- 2002-2003. Graduate Awards, Admissions, and Affairs
- 2004-2005. Chair, Graduate Awards, Admissions, and Affairs
- 2002-2009. Gender and Minorities Issues
- 2003-2009. Emergency Coordinator
- 2001-2009. Honors Advisors
- 2002- 2009. Honors Biology Committee
- 2008-2009. Chair, Honors Biology Committee
- 2004-2005. Graduate Qualifying Exam Committee
- Spring 2006 – 2009. Diversity Plan Committee
- Fall 2006- Spring 2007. Physiology and Neurobiology Merit Committee
- Spring 2007. (elected) Physiology and Neurobiology Headship Search Committee
- Fall 2007. Physiology and Neurobiology Faculty Search Committee
- Fall 2007 (elected) Physiology and Neurobiology Promotion, Tenure and Reappointment Committee

University of Connecticut (2001-2009)

- 2001- 2009. Honors Advisors
- Fall 2005-2007. Laboratory Safety Committee
- Fall 2005- 2009. Neuroscience Steering Committee
- Spring 2007-2009 (elected). Graduate Faculty Council
- 2003-2009. Women in Math, Science and Engineering (WIMSE) (Co-organizer)
- January 2008- August 2009. Institutional Animal Care and Use Committee (IACUC)
- Fall 2007 – 2009. Women's Center Board Advisory Committee
- Fall 2007 – 2009. Annual Report on the Status of Women (Women's Center)
- July 2008- 2009 (elected) University of Connecticut Senate
- July 2008 – June 2009. Faculty Standards Committee of the University Senate, Univ. Connecticut.
- Spring 2008. Reviewer NSF (IGERT) UConn internal competition
- July 2008-June 2009 (elected). American Association of University Professors (AAUP) Executive Committee, Connecticut Chapter
- Spring 2008. Work/life specialist search committee
- Summer 2008. Internal Screening Reviewer for the Beckman Foundation Young investigators Award; Univ. Connecticut

Department of Neurobiology (2017-present) University of Pittsburgh School of Medicine

- July 2017 - present. Department of Neurobiology, Promotion and Tenure Committee
- 2025 – present. Faculty Affairs Lead

University of Pittsburgh School of Medicine (2009 - present)

- October 2009 – present. Training Faculty. Center for neuroscience University of Pittsburgh (CNUP)
- 2011-present. Member of the CNUP Medical Science Training Program (MSTP) Recruitment Committee.
- October 2011 – present. Faculty Member of the Center for the Neural Basis of Cognition (CNBC)
- 2011 – present. Participating Faculty Medical Scientist Training Program (MSTP)
- 2013-present. Chair of the CNUP Medical Science Training Program (MSTP) Recruitment Committee
- 2014 – present. Participating Faculty Physician Scientist Training Program (PSTP)

- July 2015 – present. Career Advisor, Medical Scientist Training Program (MSTP)
- 2018-2019. Fulbright U.S. Student Program campus interview committee
- January 1, 2018 - December 31, 2020 (elected). Member of the Tenured Faculty Promotions and Appointments (TFPA) Committee
- July 2020 – present. CNUP Faculty member of the Diversity and Inclusion Committee
- May 2021 – present. Medical Science Training Program (MSTP) curriculum committee.
- February 2022 - January 2024. UPSOM Promotions Committee
- January 2022 - present. Physician Scientist Training Program (PSTP) recruitment committee
- July 2023 – 2026. Pitt Scientist Well-being Steering Committee
- June 2024. Students Promotions -Appeal Committee
- 2024 (August-December)- SOM ILS Course Curriculum Course for Medical Students (MS4) (Co-Chair)
- April 2025 – present. Pitt Scientist Well-being Award Committee (Chair)

Junior Faculty Mentoring Committee

- 2023 - present. Melissa McGovern Ph.D. -Dept. of Otolaryngology, Univ. of Pittsburgh School of Medicine, PA, USA.
- 2024 - present. Alice Burghard Ph.D. Dept. of Neuroscience, Univ. of Connecticut Health Center, CT, USA.