



Riccardo Marrocchio

Postdoctoral Scholar, Otolaryngology - Head & Neck Surgery

Bio

BIO

Riccardo Marrocchio received his BSc in Physics from the Sapienza University of Rome and his MSc in Physics from the University of Rome Tor Vergata. During his master, he had the opportunity to study and develop analytical and computational techniques to build mathematical models of complex biological systems, in particular of neuronal networks and the hearing system. He then joined the Institute of Sound and Vibration Research as a Ph.D. researcher at the University of Southampton. During his Ph.D., he worked on the development of a model of active cochlear micromechanics. After his PhD he continued at the University of Southampton joining the DigiTwin project as a Research Fellow, to work on the generalization of the biological feedback system of the cochlea to the design of control systems. To pursue his interests in hearing research, he joined Dr. Ó Maoiléidigh Lab, where he is working on stochastic fluctuations in hair bundles.

HONORS AND AWARDS

- FGSA Award for Excellence in Graduate Research, American Physical Society (2021)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Association for Research in Otolaryngology (2021 - present)
- Member, UK Acoustic Network (2020 - present)
- Member, American Physical Society (2020 - present)

PROFESSIONAL EDUCATION

- PhD, University of Southampton , Engineering and Physical Sciences (2022)
- MSc, University of Rome Tor Vergata , Physics (2018)
- BS, Sapienza University of Rome , Physics (2014)

STANFORD ADVISORS

- Daibhid O Maoileidigh, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Links regulate deflection fluctuations in the sensory cells of hearing.** *Physical review. E*
Marrocchio, R., Ó Maoiléidigh, D.
2025; 111 (3-1): 034403
- **Links regulate deflection fluctuations in the sensory cells of hearing** *Physical Review E*

Marrocchio, R., Ó Maoiléidigh, D.
2025; 111: 034403

- **Forms of Longitudinal Coupling in the Organ of Corti**

Elliott, S., Marrocchio, R., Grosh, K.
edited by Dong, W., Epp, B.
AMER INST PHYSICS.2024

- **The coherency of motion of two stereocilia depends on the viscoelastic properties of their link** *15th International Mechanics of Hearing Workshop*

Marrocchio, R., Ó Maoiléidigh, D.
Zenodo.2024

- **Wave motion in the longitudinally coupled cochlea**

Marrocchio, R., Grosh, K., Elliott, S.
edited by Dong, W., Epp, B.
AMER INST PHYSICS.2024

- **Inferring Excitatory and Inhibitory Connections in Neuronal Networks** *ENTROPY*

Ghirga, S., Chiodo, L., Marrocchio, R., Orlandi, J. G., Loppini, A.
2021; 23 (9)

- **Waves in the cochlea and in acoustic rainbow sensors** *WAVE MOTION*

Marrocchio, R., Karlos, A., Elliott, S.
2021; 106