

Editorial

Sounding Science: Exploring Music in Science and Science in Music

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Musical study has its origins as a branch of philosophy, and has developed historically in conjunction with mathematics and astronomy, *etc.* In modern universities, however, a music department is usually found in the faculty for arts or humanities and, due to funding structures, especially where public funding is divided into arts- and science-based study, collaborative research projects are often restricted. There is much potential in such projects, and a genuine interest and lively debate to be had between musicians and scientists. This special issue invites contributions from musicians and scientists that show the influence of scientific study upon music and *vice versa*, and document collaborative work. The Special Issue papers will be published online at www.mdpi.com, and accompanied by an interactive blog that enables the publication of video and audio links, and encourages further discussion from interested readers.

Contributions could fall into the following categories:

Instrument building and modification, and expanded sound possibilities on acoustic instruments

- Collaboration between instrument makers and instrumentalists to build new instruments (e.g., microtonal keyboard instruments, double-bass-bassoons, *etc.*),
- Work with instrument makers to extend instrumental possibilities (e.g., double-belled brass instruments, *glissando* headjoint for flute, *etc.*)
- Construction of new instruments by composers and instrumentalists historically, in recent history and currently (e.g., Adolphe Sax, Mauricio Kagel, Harry Partch, *etc.*)
- Reconstruction of historical instruments using traditional and modern techniques (such as 3D printing)
- Collaboration between performers and acousticians to expand the possibilities of instrumental playing and to explain and categorise new sound phenomena (e.g., multiphonics)

The use of technology to record, amplify, create new instruments, and interact with performers

- Historical and recent developments in recording techniques
- Development of equipment and techniques for amplification
- The building of electronic/sensor instruments for solo and ensemble performance
- The use of programmes such as MaxMSP to interact with live performance
- Composition using pre-recorded and modified sound

Psychological and Physiological research

- Developments in the understanding of music perception

-Developments in the understanding of the psychology of performers (e.g., learning and rehearsal techniques, memorising techniques and performance anxiety)

-Understanding of the physiology of performance (e.g., healthy practice, injury)

We welcome inputs from active practitioners (performers, composers, acousticians, psychologists, *etc.*) describing their current research, and reviews that offer a historical perspective.



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