

Research Directions

Office of Research Services

THUMBS UP

Dr Garth Paine, from the School of Contemporary Arts, in collaboration with MARCS Auditory Laboratories, is heading a project involved in the development of a new electronic musical instrument called the Thummer™.



During a musical performance humans identify at least six so-called psychoacoustic variables, including pitch, loudness and timbre in qualitative terms, such as roughness, richness, density, intensity, loudness and spatial position.

'The Thummer™ is considerably more expressive than existing instruments uniquely presenting many more, up to a dozen, possible variations that add a completely new approach to the design of musical instruments' explained Dr Paine.

First though, the researchers want to know whether the variables that have been developed for the Thummer™ are recognisably musical to listeners. The Thummer Mapping Project (ThuMP) will explore the 'playability' of these extra variations by mapping them to recognised musical parameters. A model of these will be developed from what highly trained acoustic musicians currently identify as critical to timbre, pitch and quality. By using the mapping strategies from this research, the instrument design will then be finalised.



Project Title: *The Thummer Mapping Project (ThuMP), modelling playability in a novel, new electronic instrument.*

Funding for this UWS Partnership Grant has been set at \$27,745 with \$30,501 being contributed by industry partner, Thumtronics Pty Ltd.

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