

Brian Lithgow heads the Auditory Neurosignal Processing Group which is conducting research in the following areas.

First, in conjunction with industry and Lulea University and is ARC supported:-

1. Tinnitus modeling and Suppression
2. Vestibular Organ Diagnostics for Meniere's Disease and seasickness.
3. Localisation of Superior Olivary Pathologies using Wavelet analysis of Auditory Brainstem Response. Two patents are being sought related to these topics.

- **Second, in conjunction with the Alfred Hospital Neurosurgery and**
- **Psychiatric medicine departments and Lulea University**
- 4. The development of a Parkinsons Disease diagnostic based on
- Vestibular measures.
- 5. The development of a Depression diagnostic based on vestibular
- measures.

- **Other studies include:-**
- 6. Speaker Separation and identification of voiced/unvoiced components
- including intonation. A patent is currently sought on this work.
- 7. Detection of Micro-calcifications in Mammograms
- 8. Effects of LF EMF on Cerebral Heamodynamics
- 9. Cochlear Implant Signal Processing
- 10. Precise measurement of anaesthetic gas uptake.