Abstract:
My research in recent years has focused on understanding the auditory system’s role as the brain’s ‘early warning system’. Hearing is sensitive to a wider space than the other senses (above, below, behind, in the dark…) and is therefore often hypothesized to serve as a monitor - continuously scanning the unfolding acoustic scene for behaviourally-relevant events, e.g. those that could indicate the approach of predators or prey, even when attention is focused elsewhere. A key issue in this context is understanding how auditory processing depends on listeners’ focus of attention – which processes proceed automatically and which depends on the availability of attentional/computational resources? I will review recent EEG and MEG-based work in my laboratory concerning the effect of attentional focus on brain responses to unattended acoustic information and demonstrate that many auditory processes, including complex scene analysis, proceed automatically, independently of the listener’s perceptual state. However, in certain, (extreme) conditions, attention focused elsewhere can have serious implications for hearing.