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### **The development of new signal processing strategies taking account of auditory scene analysis**

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What degree of amplification and assistance from adaptive filtering functions do wearers prefer? Are these preferences dependent on location or even time? These two questions alone result in a multitude of follow-up questions. It seems all the more important that research is always using state-of-the-art technology to approach the mysteries of different soundscapes and their effects on people. For example, a recording made in a café has a different effect on test subjects when played back later, depending on whether they are in a sterile laboratory or a café environment. This is precisely one of the keys to optimally combining the complex auditory scene analysis of hearing aids with that of humans. An audiovisual replica can be used to optimise the effect of signal processing strategies live, highlighting the smallest differences on the way to the best possible sound from a technical perspective. In this presentation, viewers will learn all the details about a novel laboratory called "Wonderful SoundLab" that creates a kind of acoustic "holodeck". I shall also show how its use can create future improvements in signal processing incorporating new technologies.