Scientists Attempt to Measure Emotional Responses to Boston Symphony

By Vivien Schweitzer
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Conductor Keith Lockhart will soon discover whether his audience is mesmerized or thinking about dinner. A new McGill University study will have Lockhart, Boston Symphony musicians, and audience members wired up in an unusual attempt to monitor emotional responses to music, the university announced.

The participants in the study, which will take place during an April 8 family matinee concert at Boston’s Symphony Hall, will be hooked up to special electrodes to measure the effects of music on the human brain.

Lockhart, the conductor of the Boston Pops, will conduct three pieces, including the overture to Mozart’s *The Marriage of Figaro* and the Finale from his *Jupiter* Symphony while wearing a special electronically equipped jacket that senses heart rate, muscle activation, and other physiological responses.

The equipment was designed by Teresa M. Nakra, a conductor and music technologist. Five members of the orchestra will also be sporting the jackets, while several dozen audience members will wear sensors on their arms and fingers. Following the performance, an audience in Montreal will view a tape of the performance in high-quality digital audio and video and identical measurements will be taken from them.

Dr. Daniel Levitin, a musician and cognitive neuroscientist who is a member of the McGill team, said the project has two aims. "First, we’re hoping to see distinctive physiological signatures of the emotions that Maestro Lockhart is feeling as he conducts, and then see the transmission of them to the musicians and the audience members. Second, we’re hoping to quantify differences in physiological arousal and impact between actually being at a concert versus seeing it on a large screen."

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