FINAL NAE Neuroengineering Session 2017 11 03

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Neuroscience and engineering are poised to work together in the coming century to make breakthroughs in our understanding of the brain, and then to use that understanding to create neuro-devices and therapies that can directly help people. These devices are likely to help those with disabilities or disease at first, but then will affect how we all interact with computers and machines. In this session, we will first learn how we can understand the brain by imaging and measuring signals from the brain, and how data from these techniques can be effectively used to explore new theories in cognitive neuroscience, as well as build models of brain function (Alexandre Gramfort). We will then explore how we may use our understanding of the brain itself, as well as our understanding of materials that can work with the brain to create new sensors, devices, and implants that can live inside the brain (Adam Williamson). We will next explore how neural devices are changing the lives of people today, and the clinical and ethical implications of improved technology in the future (Cameron McIntyre). Finally, we will learn how neurotechnology is being created and brought to market, and the opportunities and challenges of distributing new neuro-devices and neuro-therapies to one day be able to help millions of people worldwide (Tim Dennison).

Session Speakers:

1. Alexandre Gramfort, PhD
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2. Adam Williamson, PhD
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3. Cameron McIntyre, PhD
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4. Tim Dennison, PhD
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