

## **Transitioning to the Fourth Paradigm of Discovery**

*Wednesday, 3 April 2019 09:45 (45 minutes)*

We have now entered the era of big data. Few know what this truly entails but those of us that are confronted with it know that it means we need to do our work differently. Indeed, scholars across disciplines as diverse as ecology, social science, medicine, and physics understand that addressing big data challenges requires entirely new approaches. One visionary that contemplated the impact that big data has on society – Jim Gray of Microsoft – suggested that our approach to science and engineering must require new thinking that is transformative – that we need to enter into a new, fourth paradigm of discovery. Is it possible for us to transition to this this new paradigm? What is necessary for us to achieve this? I outline an approach that I believe that is needed to confront, head on, the enormous challenges of big data. I argue that we cannot retreat either, as the potential that this era has to address grand challenges problems in society are boundless.

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**Session Classification:** Keynote Speech