

# Cloud Computing for Science

Kate Keahey

Argonne National Laboratory  
keahey@mcs.anl.gov

Infrastructure-as-a-Service (IaaS) style cloud computing is emerging as a viable alternative to the acquisition and management of physical resources. This raises several questions. How can we take advantage of the opportunities it offers? Are the current commercial offerings suitable for science? What cloud capabilities are required by scientific applications? What additional infrastructure is needed to take advantage of cloud resources?

In this talk, I will describe several application projects using cloud computing in commercial and academic space and discuss the challenges and benefits of this approach in terms of performance, cost, and ease-of-use. I will also discuss our experiences with configuring and running the Science Clouds – a group of clouds in academic domain available to scientific projects configured using the Nimbus Toolkit. Finally, I will discuss the emerging trends and innovation opportunities in cloud computing.