



# SC Education Program

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## The Metaverse for Computational Science and HPC EOT

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# Metaverse

- **Overview**
  - What is a metaverse?
  - Why do we care about metaverses?
  - What's out there now?
    - Second Life
    - Qwaq
    - Croquet SDK
  - Where are we going to start? Why?
  - Limitations of current metaverses
  - Qwaq demonstration
  - Qwaq experience

# Metaverse

- **What is a metaverse?**
  - **Virtual reality environment based on Neal Stephenson's Snowcrash. They allow you to be immersed in an online learning environment in a way that hasn't been seen before. The ability to move freely throughout a three dimensional space and interact with objects in the same way that you might given physical access to them is something that couldn't be done in previous virtual learning environments.**

# Metaverse

- **Why do we care about metaverses?**
  - **Attractor**
  - **Education**
  - **Outreach**
  - **Training**
  - **The ability to simulate real life events, while you control the conditions. Imagine rather than reading about the factors that play a part in various natural disasters being able to control which of those factors is present, and then being able to see the effects that they have, and experience how things could have played out given different conditions.**



# Metaverse

- **What's out there now?**
  - **Second Life**
  - **Qwaq**
  - **Croquet SDK**

# Metaverse

- **Where we are going to start? Why? How?**
  - Qwaq, better tools for content development
  - Attractors
  - Island with weather simulations
  - Visualized molecular dynamics
  - Visualized galaxy creation

# Metaverse

- **Limitations of current metaverses**
  - The lack of interaction, and variety in tools available for developing educational materials. Chat rooms and message boards do a little to compensate for this, but they are no replacement for personal contact between an instructor and their students. In virtual worlds you have a virtual classroom, where you can interact directly with your students, and are limited only by your imagination when creating new tools to be used collaboratively. Along with this comes the benefit of using voice chat to hold an actual conversation with your students as you would in a classroom.



# Metaverse

- Qwaq demonstration and experience