



James Ahrens

NITRD Human Computer Interaction &
Information Management Coordinating Group

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Who are you and what are you doing with visualization?



- Worked for Los Alamos, Department of Energy for 17 years
 - Originator and lead designer for ParaView, an open source large data visualization and analysis package
 - Leadership roles in DOE including exascale planning, OSTP and White House white papers on Big Data and High Performance Computing

What are you passionate about?

- Enabling scientific understanding...
 - Expertise in large scale visualization and analysis of massive scientific simulations

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Slide 2

What are your current challenges in your work?

- A. Relentless increase in data sizes
 - 3 orders of magnitude every ten years
- B. Adapting to changing software & hardware infrastructure (shared memory, clusters, threading, data-oriented)
- C. Advancing the fundamentals
 - Improved end-to-end visualization and analysis workflow and cognitive understanding
- Current challenge: Shepherding fundamental change from post-processing to *in situ* approaches
 - Automated techniques and new representations required

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What is on your wish list?

- Leveraging *data intensive approaches* and creating synergy with *compute intensive (HPC) approaches*
 - For large data visualization and analysis problems
 - Examples: Use hadoop distributed filesystem, databases
- End-to-end sampling-oriented view of scientific process including visualization and analysis
 - Using experimental design techniques
 - Improve quality of science
 - Inputs, processes, outputs
 - Uncertainty and bias quantification

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