

## Bob Wisniewski – HPE – Session 1

**Title:** An update on PEZ focusing on the experience of "E" Exascale

**Bio:**

Dr. Robert W. Wisniewski is an HPE Fellow and Chief Architect in the HPC and AI Solutions Organization at HPE. He is an IEEE Fellow and ACM Distinguished Scientist. He has published over 81 papers in the area of high performance computing, computer systems, and system performance, has filed over 67 patents with over 46 issued, has an h-index of 42 with over 7800 citations, has given over 88 external invited presentations, and generated over 18 press articles. Prior to joining HPE, he was a Senior Vice President at Samsung, Chief Architect of HPC, President of Samsung Federal Incorporated, and head of Samsung's SAIT Systems Architecture Lab. The Systems Architecture Lab's mission was innovating technology to overcome the memory and communication walls for HPC and AI applications. Before Samsung, he was an Intel Fellow and CTO and Chief Architect for High Performance Computing at Intel. He was the technical lead and PI for Aurora, the supercomputer delivered to Argonne National Laboratory as one of the world's first exascale computers. He was also the lead architect for Intel's cohesive and comprehensive software stack that was used to seed OpenHPC, and served on the OpenHPC Governance Board as chairman. Before Intel, he was the chief software architect for Blue Gene Research and manager of the Blue Gene and Exascale Research Software Team at the IBM T.J. Watson Research Facility, where he was an IBM Master Inventor and led the software effort on Blue Gene/Q, which received the National Medal of Technology and Innovation, was the most powerful computer in the world in June 2012, and occupied 4 of the top 10 positions on the Top 500 list.

**Abstract:**

As a community we started on the path to exascale in the late 2000s shortly after having achieved petascale. Today, shortly after achieving exascale, we are starting on the path to take the next step. In this talk I will take a look at what it took to get to exascale, focusing on the partner perspective. I will discuss the challenges we thought we would encounter and the actual challenges we encountered both technical and ecosystem. Then I will address the current state of affairs and whether we achieved what we set out to accomplish. What the next step should be is less clear today than what it was a decade and a half ago, but orthogonal to the next step, there are key technologies we need to focus on. I will finish by describing many of those key critical technologies and how they would fit together in an overall system to help us on that next step.