

$$Vm = \sum_{i=1}^n \frac{CFi}{(1+r)^i}$$

$$S = \frac{P}{1-n \cdot d}$$

$$A = \frac{P}{r}$$

GRANVILLE SEMINAR SERIES ON COMPUTING, MATHEMATICS, AND DATA

Bruce Hendrickson

Associate Director for Computing
Lawrence Livermore National Lab



The Day After Tomorrow: The Looming Crises of the Exascale Era

High-performance computing is entering an era of great promise but also great peril. The power of exascale computers will drive the frontiers of science, national security, and industrial competitiveness. But the technology advances that have driven the field for decades have run their course, and the path for future progress is highly uncertain. In this talk I will provide a perspective on these challenges and some thoughts on possible futures. I will argue that dramatic changes in computer architecture are unavoidable, and that these changes will be highly disruptive for our approach to algorithms and software. I will describe some of the research challenges that will need to be overcome to enable continued progress.

Bruce Hendrickson is Associate Director for Computing at Lawrence Livermore National Lab in Livermore California. In this role, he leads an organization of more than 1300 computing professionals with responsibility for the full breadth of the Laboratory's computational needs including research, platforms, and services. He led the Center for Computational Research and managed the Advanced Simulation and Computing program at the Sandia National Laboratories before coming to LLNL. Hendrickson has a Ph.D. in Computer Science from Cornell University. His research interests include computational science, parallel algorithms, combinatorial scientific computing, linear algebra, data mining, graph algorithms and computer architecture. He is a highly published and cited scientist, and his research has garnered a number of international awards. Hendrickson is a former Hertz Foundation Fellow and is a Fellow of the Society for Industrial and Applied Mathematics and of the American Association for the Advancement of Science.

Thursday, August 12

10:00 – 11:00am

Zoom

All staff are invited

About Evelyn Boyd Granville: Dr. Granville was the second African American woman to receive a Ph.D. in mathematics from an American University. Her pioneering work in applied mathematics and computing was key in America's early space programs. She is also a strong advocate for women's STEM education (To learn more about Dr. Granville: https://en.wikipedia.org/wiki/Evelyn_Boyd_Granville)

Host: Mahantesh Halappanavar
Admin POC: Galina Reimann

$$\sum_{i=1}^n (1+r)^i$$