

Institutional Models, Challenges, and Opportunities

Anthony Mezzacappa

**Newton W. and Wilma C. Thomas Chair in
Theoretical and Computational
Astrophysics**

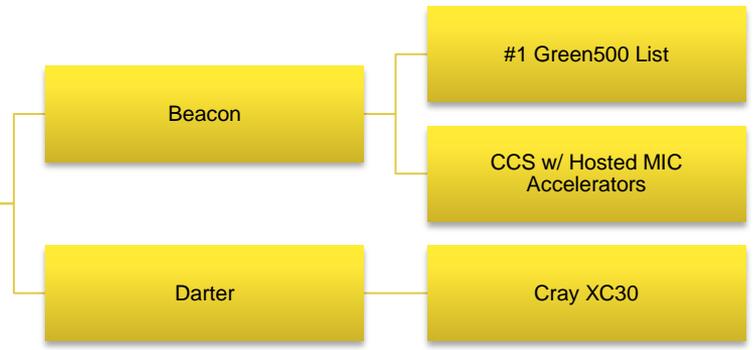
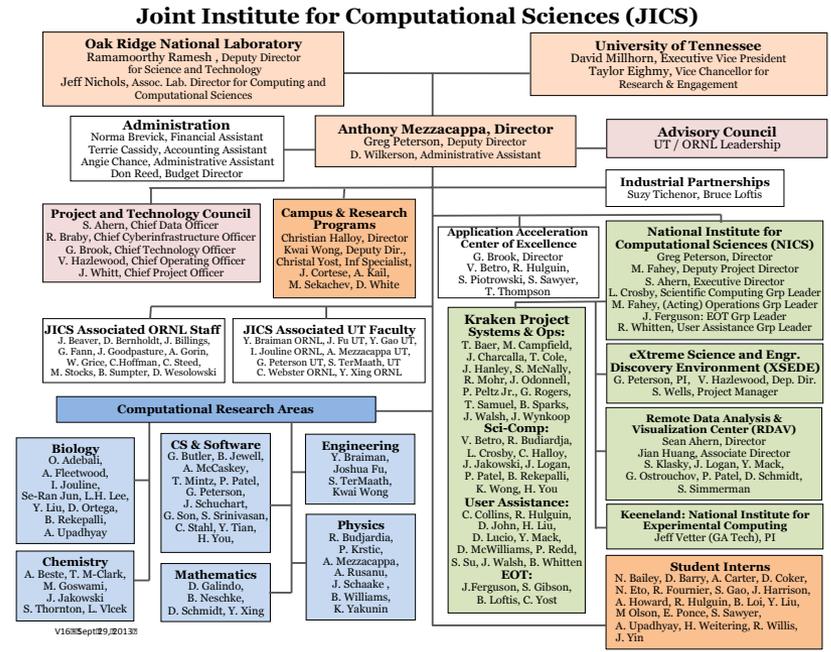
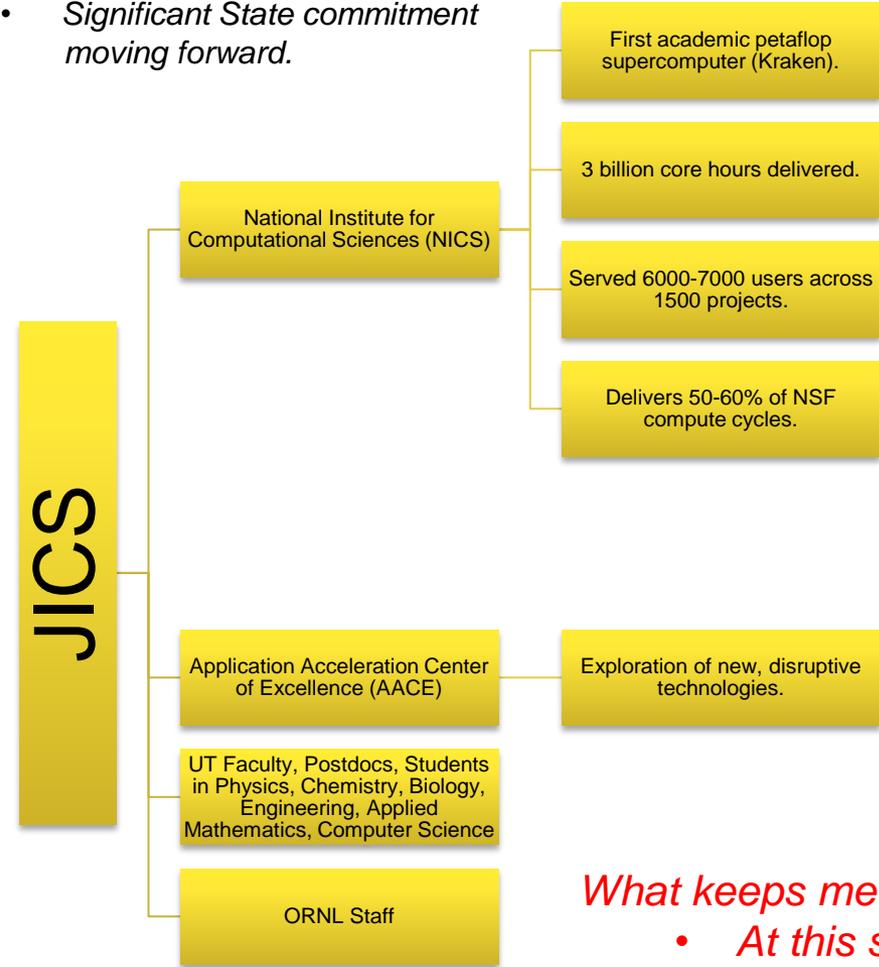
**Professor, Department of Physics and
Astronomy**

Director, JICS



Joint Institute for Computational Sciences

- Plugged in at the level of the Vice Chancellor/
Vice President at UT and the ALD/Deputy Director
at ORNL.
- Significant UT/State investment.
- 14:1 ROI relative to Kraken investment.
- Foundation for other major UT awards.
- Significant State commitment
moving forward.



What keeps me up at night? Sustaining all of this.

- At this scale, federal, state, and, likely, private resources will be needed.*



Why sustain JICS?

Role JICS has played for the national user community
(unprecedented track record).

Role JICS has played for the State of Tennessee.

Role JICS has played for the University of Tennessee.

Unique

- Components at all levels, university to national.
- Partnership across a university and a national laboratory, across federal agencies.

JICS is positioned to serve the UT community, to serve as a regional catalyst for academe and industry, and to serve the national user community because it serves on all three levels already.

Tennessee Institutions Benefiting from NICS/Kraken

- Oak Ridge High School and the Tennessee Governor's Academy
 - high school students exposed to HPC computing



TENNESSEE GOVERNOR'S ACADEMY
MATHEMATICS SCIENCE

- Historically Black Colleges and Universities (HBCU) such as Fisk University and Tennessee State University



- Private universities such as Vanderbilt University and Belmont University



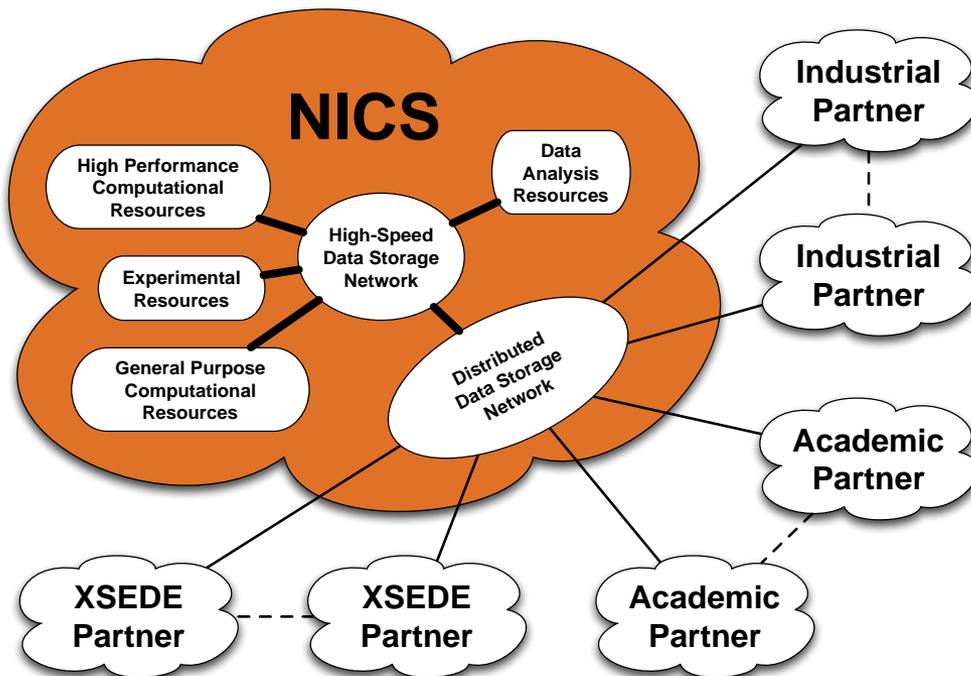
- Tennessee Board of Regents universities such as Middle Tennessee State University and East Tennessee State University



- The University of Tennessee system members such as UTK, UTC, and UTHSC



Vision and Challenges



Industry

- Recruiting each partner is labor intensive, and not scalable.
- Establishing the business case is not easy for industry.
- Staffing is a challenge.
 - Need a sizeable staff pool from which to draw on short notice.

Academia

- Crossing state lines.
- Each academic partner wishes to establish its own identity/leadership.
- Shrinking state dollars.

National Centers

- Way centers are competed.
 - Competed every few years.
 - Counter to long-term stability needed.
 - Process may not capture complexity of/dimensions to such centers.
 - Budgets fluctuate.
 - Significant institutional investments made.
- Coordination of center opportunities.

A Regional Model?

