



Advanced Computing - Santa Fe-

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Advanced Computing

❖ High Performance Computing (HPC)

- Physics and Materials Science
- Climate & Earth Science
- Astrophysics simulations

❖ AI Computing - supports all the above + includes:

- Model training
- Inference
- Deploy and manage: integrations, agents, etc..

❖ Quantum - supports all the above +:

- Augments, adds optimization characteristics
- NM target capability



LANL ATS System Crossroads

Installed 2023 - power consumption is a maximum of 18 MW, 6,144 compute nodes



Advanced Computing Needs

❖ Large Data Centers - Hyperscalers

- Power - 30 - 50 MW per site
- Cooling - large water usage
- Space
- Data Storage/ Network Integration
- Serving remote users

❖ Research / Testbed Centers

- Fraction of above
- Broader Industry / Lab interaction
- Diverse technology



Unique Regional Assets

- ❖ **Los Alamos National Laboratory**
- ❖ **Sandia National Laboratory**
- ❖ **UNM – Center for Advanced Research Computing**
- ❖ **NMC – Collaborations, Supercomputing Institute**
- ❖ **Santa Fe Institute - SFI**
- ❖ **Other computing organizations and startups**

Past Events:

- ❖ HPC User Forum 2025
- ❖ BRICCs Workshop – 2023
- ❖ HPCMASPA - 2023
- ❖ others...



Why Santa Fe

❖ Location

- Collaboration - middle ground for National laboratories
- Grounding point for startups working with labs

❖ Culture / Technical Environment

- Sizable technologically savvy population
- Computing can be done from anywhere in the world, can we entice people to work in Santa Fe where there is a technologically focused vibe and cultural draw.
- Build on the Arts and cultural diversity to provide energy to start-ups and collaborations. Age of Innovation thinking.

❖ Size

- The right size for an Innovation Hub with close association to regional assets

-Impact-

Increases demand for local educational programs, workforce training, and talent attraction/retention.

Fosters an ecosystem of startups, service providers, data infrastructure firms, consulting, software development, etc.



Possibilities or not..

❖ **Large Data Center**

- Probably not - space, power, communication needs for hyperscalers.

❖ **Test bed and Innovation Center**

- Good fit. Ties to collaborations and projects out of the labs, SFI, etc.. Pulls in companies with research projects. Smaller in size but broader in breadth.
- Santa Fe can leverage the “innovation hub” brand, attract high-value individuals and firms who contribute to the local economy (housing, services, etc.).



Discussion....

❖ **Collaborations**

- NMAIC - NM State

❖ **Quantum efforts - NM and Santa Fe**

- State driven efforts

❖ **LANL Industry collaborations**

- SK Hynix, others