

Innovation in research



Highlights

- Instrumented—use high-performance computing systems and tools to accelerate innovation
 - Interconnected—create a shared research infrastructure that leverages cloud computing
 - Intelligent—work with other institutions, businesses and governments to use scientific breakthroughs to complement economic initiatives
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For academic research institutions, innovation is the key to achieving breakthroughs which help position them to compete effectively for faculty and grant funding. These breakthroughs also position the university to participate in economic development efforts by bringing new cures or products to market, encouraging entrepreneurial activity, attracting new business investment and creating jobs.

The building blocks for innovation

Basic and applied research, clinical studies and grant funds management all require an optimized infrastructure to accelerate the creation of new knowledge and science. High-performance computing (HPC) solutions from IBM can enable supercomputing capabilities for data and compute-intensive applications, achieving petascale computation and beyond.

Highly scalable and built on open standards, our HPC solutions can grow and adapt to future computing needs while remaining mindful of the environment and your budget. With our HPC solutions, we provide advanced technology to perform more calculations faster and tackle problems of greater complexity. The key components of our HPC infrastructure include:

- Computing on Demand (CoD) Services
 - Flexible, scalable, cloud-based computing computational and storage resources for research
 - Global access to secure CoD centers so you only pay for the resources you need
- Computational servers
 - IBM System Blue Gene®—a massively parallel computing platform
 - IBM BladeCenter® family of servers—flexible, scalable servers that support IBM POWER®, Intel® and AMD processors

- Storage systems
 - High-performance storage for streaming I/O applications
 - Archival storage subsystems for cost effective and efficient management of large datasets
- Data management systems
 - IBM General Parallel File Systems
 - High-performance storage systems (HPSS)
 - IBM data lifecycle management tools for data access, analysis, visualization, moving, staging, storage and archival
- Consulting and planning services
 - Economic stimulus programs from IBM Global Business Services and the IBM Systems and Technology group

Enable collaboration

University research depends on collaboration—within and across institutions—for sharing knowledge, insights, resources, data and findings. A shared research infrastructure based on cloud computing enables universal access to resources and the integration of cross-research disciplines, domains and silos. IBM helps create research cloud infrastructures in shared centers and provides access to resources through our computing on demand public cloud service.

Making your research even smarter

To speed the advancement of science, knowledge and innovation—while contributing to economic development efforts in regions and states—universities need to adopt smarter approaches. At its core, smarter research requires processes that are instrumented, interconnected and intelligent.

Instrumentation is achieved by collecting, integrating and analyzing research data from real-world, clinical and laboratory sources across your ecosystem by leveraging the power of an IBM HPC infrastructure. By interconnecting your research institution with partner institutions, government agencies and businesses through a shared infrastructure based on cloud computing, researchers can access the same resources virtually anytime, anywhere. This shared infrastructure also helps institutions integrate cross-research disciplines, domains and silos for a more holistic view and greater collaboration. With intelligent investments in targeted research, a university can contribute to long-term economic sustainability. Investments in strategic research disciplines can help differentiate a region and improve its competitiveness and attractiveness for public and private industry.

For More Information

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