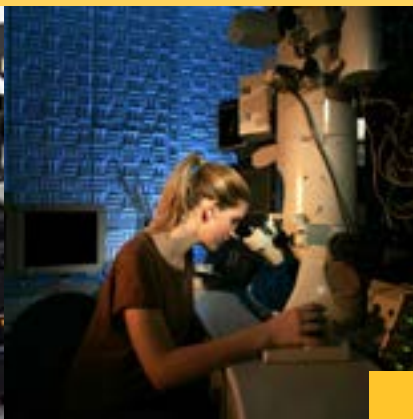


Core Research Facilities

Strategize • Access • Create



The Core Research Facilities at Arizona State University provide access to advanced equipment, in-depth consultation and individualized services to help you achieve your research goals on any budget, scale or timeline.

EXPLORE

- **Superior service.**
- **State-of-the-art equipment.**
- **Specialized solutions.**

Uniting Arizona State University's **transdisciplinary expertise** and vast array of **advanced equipment** under a streamlined, pay-for-use model, ASU Core Research Facilities provide **cost-effective solutions** to your most pressing research needs.

Whether you seek unique fabrication, project development, sample processing, assistance with proposals and grant writing, or workforce development, **we have the right tools – and people – for every job.** Offering unparalleled experience, our scientists and technicians deliver individualized guidance and consultation to clients ranging from academic researchers and two-person startups all the way to Fortune 500 companies.

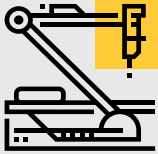
Our **distinct focus areas** support research and development spanning microelectronics, biosciences, advanced manufacturing, materials sciences, clinical research and computing and data services.



Access to the Core Facilities has really helped Swift Coat to grow and gain more customers. Some of our early growth was spurred on by grants from NSF and the Department of Energy, and when we were applying for these grants as a two-person company, a lot of the questions we got from the program directors were, 'Can you do this test? Are you able to do this development work?' And we were able to respond with 'yes', which gave both the program directors and NSF and DOE and our future customers confidence we were able to do the work we said we were going to."

Peter Firth,
Co-founder, Swift Coat Inc.

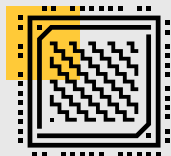
ASU Core Facilities



**Instrument Design
and Fabrication**



**Materials Characterization
and Synthesis**



**Semiconductor
Device Processing**



Biosciences



Research Computing



**Clinical Research
Services**

Instrument Design and Fabrication

Whether it's machining an out-of-production bolt or wholesale designing and building something new, the IDF core is fully equipped for the job, big or small. Capable of designing, building, modifying or repairing instruments, our goal is to keep your research progressing.

Instruments produced in the IDF core facilities have been used to search for hydrogen on Mars, test air quality in the Deepwater Horizon oil spill, explore a sub-glacial lake beneath Antarctica and detect contaminants in drinking water sources.

Offering electronics, machining, prototyping and avenues for glassblowing services, IDF also features a self-service machine shop for trained users to use industry-grade equipment for ASU-related research projects.



Materials Characterization and Synthesis

Providing premier analytical, characterization, modeling and synthesis services, this core and its component facilities support research across a range of disciplines, including physics, chemistry, life sciences, earth and space sciences, environmental sciences and engineering. Three primary facilities comprise the core:

The Eyring Materials Center, a top-of-the-line electron and optical microscopy facility with decades of experience in materials characterization; surface, optical and structural analysis; elemental composition; and high-resolution electron microscopy.

The Adaptive Intelligent Materials and Systems (AIMS) Center, a materials research center utilizing combined experimental and modeling techniques to advance materials characterization, multiscale methods, damage detection and assessment, and structural health monitoring.

The Metals, Environmental and Terrestrial Analytical Laboratory (METAL), a dual-location facility conducting high quality nutrient, elemental and isotopic measurements with a range of sample types. METAL supports research in anthropology, chemistry, biology, forensics, geology, environmental studies, ecology and more.



Semiconductor Device Processing

With more than 45,000 combined square feet of clean room space, the Semiconductor Device Processing core encompasses a range of capabilities, including nanofabrication, nanoscale processing and electronics design, solar cell fabrication and testing, and more.

The core is home to the NanoFab, Advanced Electronics and Photonics Core Facility (AEP) and the Solar Fab, each possessing specialized capacities for semiconductor processing, fabrication, development and testing. Together, these facilities offer clients a range of services, including:

- Thin film deposition and characterization.
- Optical and electron-beam lithography.
- Dry etching.
- Thermal and wet chemical processing.
- Start-to-finish solar cell fabrication, characterization and testing.
- Screen printing and electroplating.
- Backplane electronics design.

“ We do nontraditional semiconductors. Where the majority of companies in the United States are doing semiconductors on silicon wafers, we are doing semiconductors on large glass panels and flexible substrates. ASU has critical technology that has been extremely vital to our ability to advance that.”

Lindsay Pack,
CEO, InnovaFlex

“ The relationship between ASU and ASM is very synergistic, and in this state of semiconductor revolution, where we are right at the edge of going to nanometer-scale development, it becomes very vital to have a community partner so that we both can mutually grow and benefit from this.”

Dorai Iyer,
Senior Metrology Engineer II, Advanced Semiconductor Materials

“ We’ve delivered flight hardware to NASA that was 10 times better than anyone has been able to do in terms of precision, and it was the combination of the IDF and the Eyring Materials Center that allowed us to not only build that structure, but then prove we made it correctly.”

Christopher Groppi,
Professor, ASU’s School of Earth and Space Exploration

Biosciences

The nine facilities within the Biosciences core provide services, equipment and expertise across the breadth of life sciences. Underpinning vital research at the Biodesign Institute at Arizona State University and serving clinical partners such as the Barrow Neurological Institute, the united Biosciences core is capable of providing clients with support across the entire lifespan of a project.

Services and capabilities from the Biosciences core include:

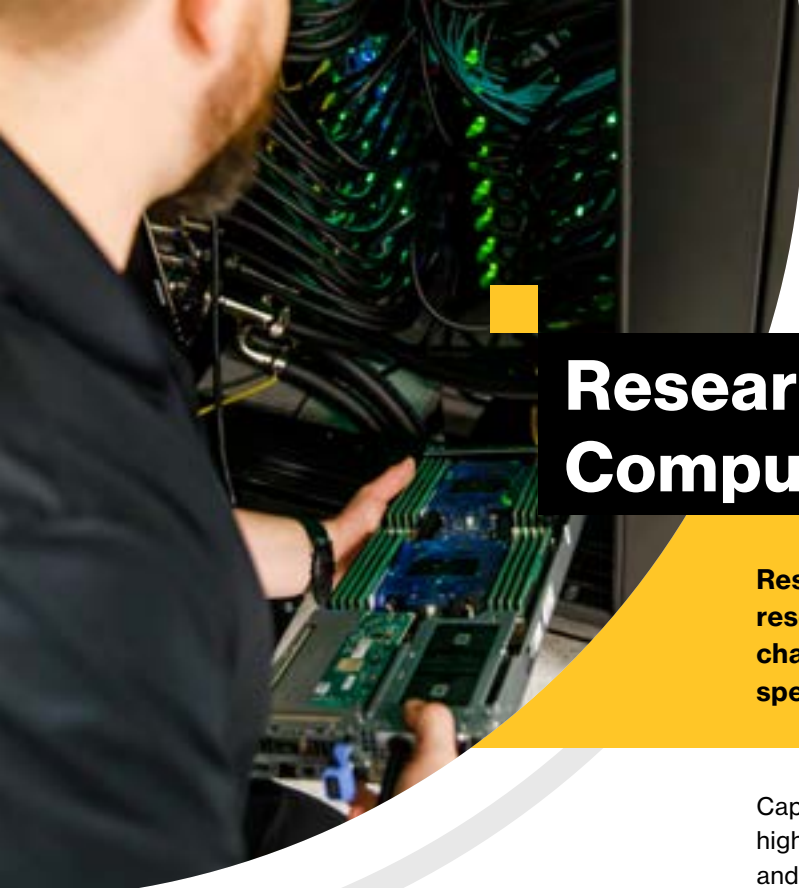
- Genomics and bioinformatics.
- Mass spectrometry.
- Advanced light microscopy.
- Flow cytometry.
- Regenerative medicine.
- Preclinical imaging.
- Ultra-fast laser spectroscopy.
- Magnetic resonance research.

Clinical Research Services

Our Clinical Research Services core provides a full-service suite of facilities, staff and equipment to support or conduct high-quality human clinical research. Services can be provided off-site or at three locations across the Phoenix metro area: the ASU Health Futures Center at Mayo Clinic, 850 PBC or the Arizona Biomedical Collaborative.

Our facilities and capabilities support research to positively impact health challenges in our community and include: clinical exam rooms and sample prep labs, a research and teaching kitchen, nutritional services, state-of-the-art instrumentation for human imaging and body composition testing, an array of sample collection services and an exercise and physiology laboratory.





Sol supercomputer among the top performing globally

ASU ranked above Harvard,
NYU and Johns Hopkins
—TOP500 list June 2023

Research Computing

Research Computing leverages advanced computational resources and data management to address large-scale challenges in science, engineering and health with speed and precision.

Capabilities include artificial intelligence and machine learning, high performance computing, parallel computing, big data storage and analytics, scientific visualization, high-speed networking and cybersecurity. Research Computing supports over 1,700 software modules representing over 600 applications, including more than 130 Python environments.

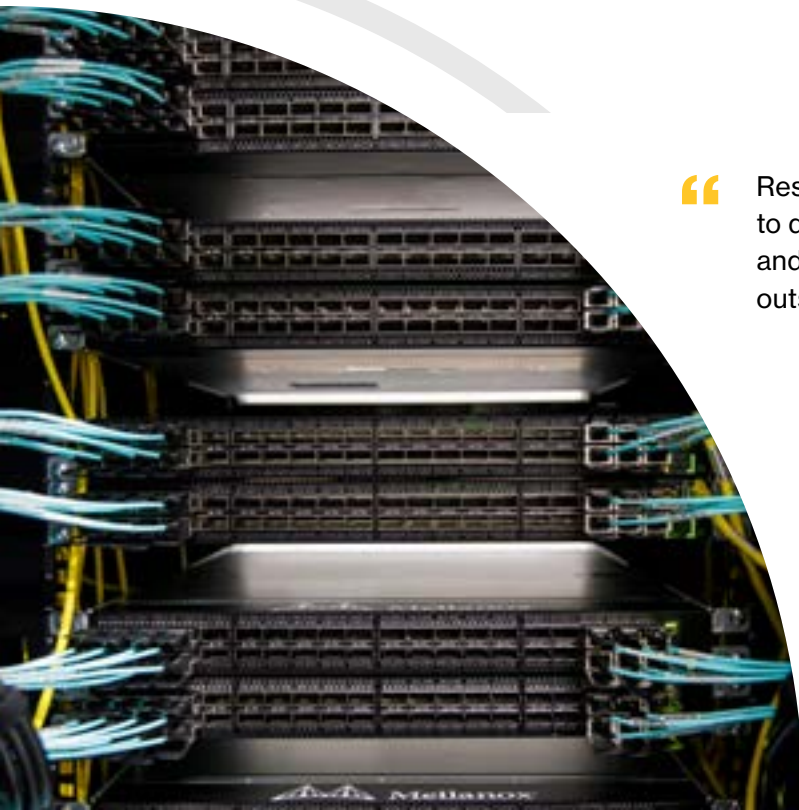
Research Computing is home to a versatile supercomputing infrastructure, including the recently launched Sol supercomputer. Sol contains over 18,000 CPU cores, including more than 240 A100 and 15 A30 GPUs, and five high-memory nodes equipped with 2TB of RAM each.



Research Computing has been the most useful resource to develop my research starting day one. The ease of use and resources provided by the personnel have been outstanding to kickstart my research at ASU.”

Anita Sanchez,

Assistant Professor, ASU's Department of Physics



Explore opportunity at
cores.research.asu.edu
or cfsales@asu.edu



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