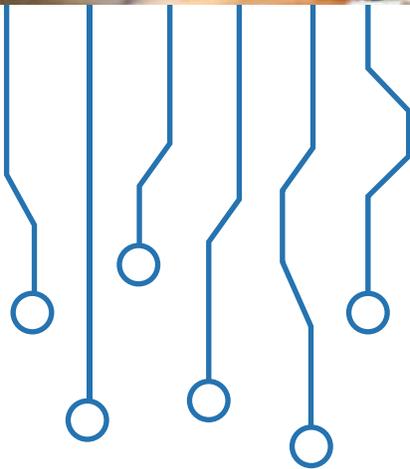
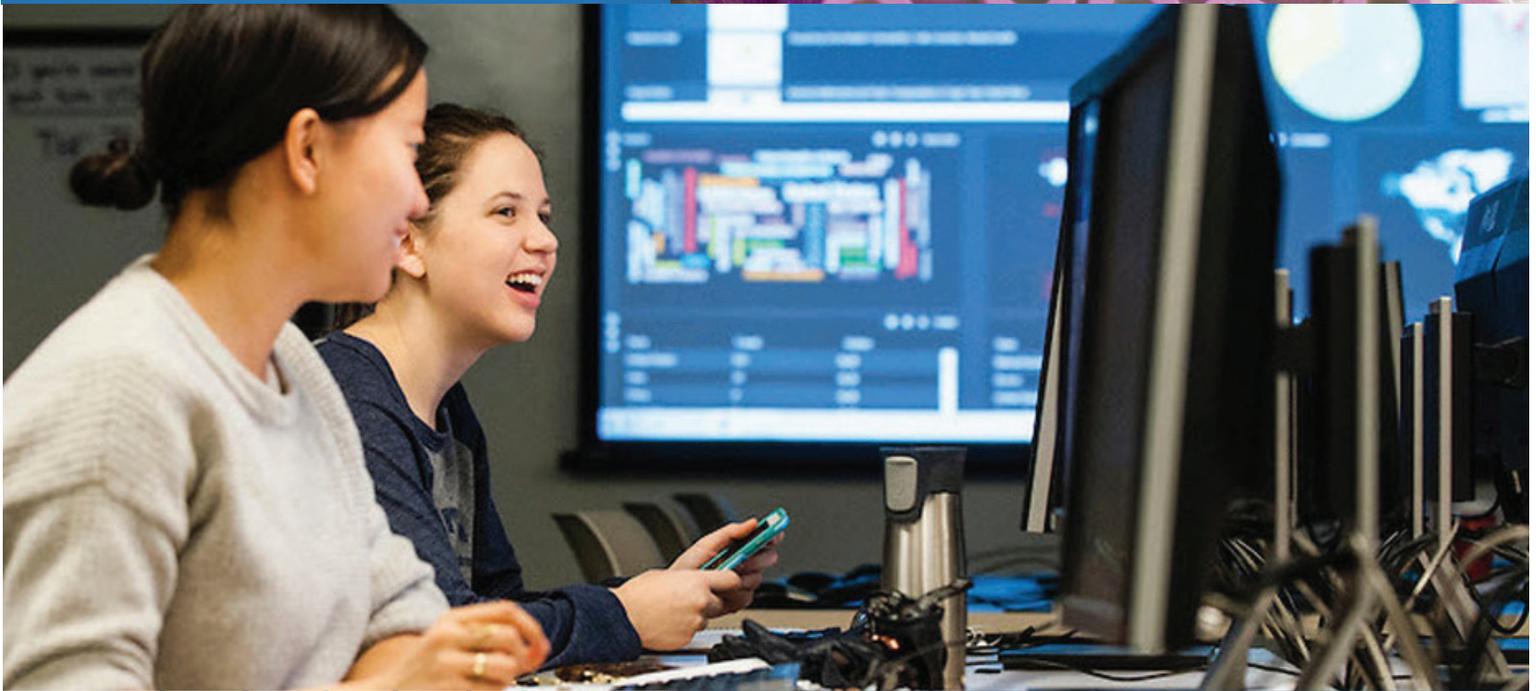


# Research Technology



## High-Quality IT Services for the Tufts Research Community

Research Technology (RT) is a directorate of Tufts Technology Services (TTS). RT enables the university and its diverse academic communities to realize their vast potential in research through the innovative design and meaningful integration of technology to meet broad and local goals.

# Research Technology Infrastructure and Tools

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## Research High Performance Computing

A RedHat Linux High-Performance Computing cluster (HPC) is available to researchers in need of computing power. Large scale computing in Sciences, Engineering and Bioinformatics is supported. The cluster has 7636 CPU cores, 41216 GPU cores and 32TB of RAM, and additional capacity is added yearly. This central service is offered at no cost to clients. A model for faculty contributed nodes is available. HPC cluster accounts can be requested at <http://research.uit.tufts.edu> and please visit <http://go.tufts.edu/cluster> for more details.

## Research Storage

Researchers who need backed-up network-accessible storage for their research data can request storage shares from 50GB to several TBs. Our current capacity is 1.6 PB. This is exclusively for research storage and it does not overlap with existing personal (P:) and departmental (Q:) drives or Box storage where non-research documents should be stored. This central service is offered at no cost to clients. Multiple research storage shares can be requested at <http://research.uit.tufts.edu>

## Software Licensing

RT provides access to many public domain and commercial software packages on our research cluster as well as network concurrent licensing for the desktop on a per product basis. This central service is offered at no cost to clients. To use the cluster, an account is required. Please visit <https://access.tufts.edu/software> for more details.

## Research Data Management Service (RDMS)

The Research Data Management Service provides the research community with a comprehensive research data management solution including 1) collecting & managing data from multiple streams, 2) providing a complete, lasting and searchable record of discovery, 3) delivering local/remote easy, safe & secure access to data, 4) meeting federal research data management plan requirements, and 5) protecting Intellectual Property (IP).

## XSEDE

The Extreme Science and Engineering Discovery Environment (XSEDE), funded by the NSF (National Science Foundation) is the next generation replacement for TeraGrid. Its goal is to provide access to supercomputer resources for US based researchers including training, education, and outreach activities. TTS Research Technology is available for consultation to better help potential users understand how XSEDE compliments the Tufts High-Performance Computing Cluster. Visit <https://access.tufts.edu/xsede> for more details.

## Technology Consulting

We assist faculty and departments with research, information, and recommendations concerning appropriate technologies for research. This includes research technologies such as high-performance computing, statistics, bioinformatics, specialized software, storage, research data management. It also includes IT support specific to research operations (e.g., web, applications, storage, databases, instrumentation, networking, documentation, integration, security) and configuration & lifecycle management.

## Monitoring, design, implementation and application of emerging technologies for research applications

We constantly investigate how Tufts researchers can excel in their fields by leveraging new technologies.

# Research Technology Areas of Specialization

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**The DataLab** The Data Lab is a teaching and research computing lab designed to foster collaboration and innovation across all campuses and departments. The Data Lab provides methodological and technological service and support for data reference, analysis, and visualization. Visit <http://datalab.tufts.edu> for more details.

**Instructional and Research Services** At the Data Lab and throughout the university, we offer several geospatial services including GIS training for faculty and students through workshops and courses, assistance with incorporating GIS modules into Tufts' courses, and individual and project-based research consulting.

**GIS Specialty Services** We also provide specialty services such as map design, geo-processing, spatial analysis, application development, data conversion and development, software licensing, etc.

**Bioinformatics** Research Technology is in the process of expanding services to support researchers and students with bioinformatics analysis, focusing on:

- Bioinformatics tools on the HPC cluster and Tufts Galaxy Server
- Secondary analysis pipelines for NGS data including DNA-seq, RNA-seq, ChIP-seq
- Data visualization
- Training and consultation

Please visit <https://sites.tufts.edu/biotools/> to see a list of Bioinformatics tools accessible from the HPC cluster. Please send us your feedback at [tts-research@tufts.edu](mailto:tts-research@tufts.edu).

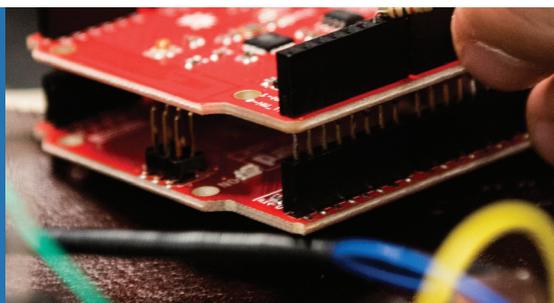
**Statistical Services** Research Technology can help faculty and students with the selection of appropriate statistical and mathematical procedures, modeling strategies for research designs, research database management issues, interpretation of results, visualizing results, and offer suggestions for the best use of a particular software package ([datalab-support@elist.tufts.edu](mailto:datalab-support@elist.tufts.edu)).

**Digital Humanities** Digital Humanities services focus on consultations, instruction, and community building including text mining, data visualizations, and digital archives & editions. We consult with faculty and students to help produce innovative projects, tools, and digital assignments. We provide instruction through hands-on workshops and classroom visits. We build community by hosting events that actively engage debates about the vital issues in the field.

**GeoData@Tufts** Tufts is collaboratively developing, with several universities and organizations, an open source, federated web app to discover, preview, and retrieve geospatial data. GeoData@Tufts combines an intuitive, map-based search interface along with traditional text-based metadata search tools for rapid data discovery and for use in teaching, learning, and research. Visit <http://geodata.tufts.edu/> for more details.

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*These tools and services are offered at no cost to clients. Research Technology (RT) is a directorate of Tufts Technology Services (TTS) at Tufts University.*