

## Center for Statistical Training and Consulting

The Center for Statistical Training and Consulting (CSTAT) was established in 2004 by the MSU Foundation. It is a professional service and research unit located within the Office of Research and Innovation as a core facility dedicated to facilitating excellence in research (<https://cstat.msu.edu>). CSTAT leads efforts to increase scientific rigor and reproducibility that improve the quality and impact of research to help MSU scholars thrive. Our statisticians collaborate with MSU researchers on study design, collection, management, and analysis of research data and support more than 350 faculty, staff, and graduate students each year. CSTAT provides training in state-of-the-art statistical methods, statistical software, and research data management. CSTAT's Advisory Board members represent Deans for Research from multiple colleges who collaborate to advise and promote CSTAT's mission and services.

### Staffing

CSTAT's collaboration and consulting team consists of a director, four additional PhD statisticians, plus a team of 3-6 research assistants (advanced graduate students) or research associates (postdoctoral scholars). Team members have professional networks that link them to faculty experts in a wide range of statistical and methodological topics, located both at MSU and national or international organizations. A research administrator, an administrative business analyst, and an information technology analyst support the unit's work.

### Physical facilities

CSTAT's offices are located in Giltner Hall on the main MSU campus with a gated parking lot at 293 Farm Lane, East Lansing, MI. All full-time CSTAT employees have individual offices suitable for small group meetings and technology for virtual conferences. The administrative business analyst sits at a reception desk, and there are four shared workstations available for use by the graduate research assistants. Videoconferencing equipment and a computer are available in CSTAT's conference room. Office equipment (whiteboards, telephones, copier, scanner, printers, lockable filing cabinets) and a breakroom are part of the office environment. CSTAT maintains a private library of research design and statistical methodology books to supplement materials available through the university's library system. CSTAT offices and workspaces are locked when not occupied by CSTAT personnel. Building doors are automatically locked after normal business hours, with after-hours access electronically controlled by a proximity card reader system and permissions assigned to employees' university identification cards.

### Computational facilities

CSTAT employees have Windows desktop workstations and laptops with Microsoft collaboration tools and can remotely access CSTAT's file server. Computers run anti-virus and anti-malware security software, as required by MSU IT policies and software tools that require up-to-date security software before permitting connections to the university's virtual private network (VPN).

The file server is hosted in the university's campus-wide data center. Physical access to the hardware running CSTAT servers is strictly controlled by the university and granted only to authorized information technology personnel who have a legitimate business need to enter the data center. The server is maintained by a professional information technology analyst, who protects it with a combination of frequent backups, software-enforced security policies, role-based user permissions, firewalls, anti-virus and anti-malware software, plus active monitoring of event logs.

CSTAT maintains software packages such as Amos, HLM, LISREL, Mathematica, MATLAB, Minitab, Mplus, Optimal Design, R, SAS, SPSS Statistics, Stata, and WinBUGS.

### Educational offerings

CSTAT hosts a series of courses, interactive workshops, and seminars with topics related to statistical software, study design, state-of-the-art statistical methodologies, responsible conduct of research, and data management. These events are taught by CSTAT consultants, expert MSU faculty, or renowned international statisticians and are attended by more than 700 faculty and students per year.

### Collaboration and Consulting Services

Clients may register for collaboration and consulting services via our website. CSTAT offers two levels of service: (1) core service and (2) research partnerships. MSU clients from sponsoring colleges or units are eligible for some free core services as determined by the sponsor. Others may receive research partnership service by negotiating an agreement and corresponding fees with CSTAT. External clients are eligible for fee-based research partnership services under a negotiated contract. CSTAT assigns statisticians to work with clients by matching their expertise to the project needs.

*Core service.* The focus is primarily on building the client's capacity to apply statistical methods and provide a solid foundation for reproducible data management and analysis. Therefore, it typically involves advising clients on research design (e.g., experimental, quasi-experimental, or observational design, planning sample size or sampling strategies, designing survey instruments, or other data collection methods); advice on data structures



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and metadata; selection, application, and interpretation of appropriate statistical methods; and how to use software to perform their analyses.

*Research Partnerships.* Partnership services can include data management, statistical modeling, grant proposal writing, or involve longer-term collaboration on projects of broader scope. Such collaboration might involve co-authorship of papers, conference presentations, or other publications designed to communicate research findings to diverse audiences. It may also include collaboration on grant/contract proposals or funded grants and contracts where CSTAT personnel will serve as key personnel, consultants, or co-investigators supported by the project budget.

## Fees

Help with grant proposal preparation or graduate student dissertations and core consulting services may be covered by sponsoring agreements with various colleges or units within the university, if CSTAT staff are included in the post award budget. CSTAT personnel will meet with clients interested in research partnerships to discuss the scope of work, schedule, and other details of the potential project before preparing a proposed budget or price quote. We primarily use two different billing approaches: a *cost-reimbursement* approach and a *time & materials* approach.

*Cost-Reimbursement.* Under this approach, we bill for fixed percentages of our personnel costs plus selected additional expenses during specific portions of the project period. The fixed percentages represent a commitment to provide the specified amount of effort to the project during a given period. We typically use this approach when we are written into grant proposals as named personnel (e.g., PI, Co-PI, Co-I, Key Personnel). In such instances, CSTAT personnel should receive indirect cost (IDC) credit on the Quali Research (KR) proposal development document in EBS so that CSTAT will receive a fair portion of the IDC funds from the project.

*Time & Materials.* Under this approach, we bill for personnel effort expended (which may vary from pay period to pay period) at pre-specified hourly rates plus any required expenses that are not already built into the hourly rates. MSU's Office of Financial Analysis and Reporting (OFAR) approved a set of hourly statistical consulting service billing rates for use by CSTAT, effective November 14, 2022. These rates will be updated at least every two years; CSTAT will bill clients using the most current OFAR-approved rates applicable when work is performed. Two factors determine the hourly rate: Whether the client is internal or external to MSU and the type of CSTAT personnel providing the services.

CSTAT Personnel Type	Hourly Billing Rate (US \$)	
	Internal <sup>1</sup>	External <sup>2</sup>
Research Assistant <sup>3</sup>	79.23	99.83
Business Analyst	92.95	117.12
Data Analyst/Data manager	105.90	133.43
Statistician or Staff Statistician <sup>4</sup>	121.78	153.44
Senior or Associate Statistician <sup>5</sup>	134.17	169.05

<sup>1</sup> Internal rates apply to on-campus clients, MSU departmental billing, and to charges on federal/state grants administered by MSU's Contract and Grant Administration.

<sup>2</sup> External rates already include MSU's indirect cost rate.

<sup>3</sup> Includes all graduate student employees.

<sup>4</sup> Includes fixed-term and continuing track academic specialists who do not yet have continuing status.

<sup>5</sup> Includes Director, Associate Director, academic specialists with continuing status, and senior academic specialists.

## Want More Information? Contact Us!

Website: <http://cstat.msu.edu> (case studies, staff bios, consulting request form, workshop registration)

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