

# SANA GUPTA

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## EDUCATION

**University of Connecticut**, College of Liberal Arts and Sciences  
Ph.D. in Statistics  
Pfizer Statistics Fellow

**Storrs, CT**  
August 2024 – Present

**University of Connecticut**, College of Liberal Arts and Sciences  
Bachelor of Science, Major: Statistics, Honors Program  
Minor: Mathematics  
Awards: Nutmeg Scholarship, Dean's List (Fall 2020, Fall 2022), New England Scholar (2021, 2022)

**Storrs, CT**  
August 2020 – May 2024

## RESEARCH

### Undergraduate Research

*University of Connecticut, Department of Statistics*  
*Dr. Ofer Harel*

**Storrs, CT**  
September 2022 – May 2024

- Conducted literature review about multiple imputation (MI) methods for standard and compositional data.
- Developed novel methods for imputing missing compositional data based on the principles of MI.
- Performed a simulation study on a High-Performance Computing cluster to evaluate method performance.

### Research Assistant

*University of Connecticut, Allied Health Department*  
*Shrestha Lab, Dr. Roman Shrestha*

**Storrs, CT**  
August 2022 – May 2024

- Contribute to manuscripts on the topic of HIV prevention in men who have sex with men through medication such as Pre-Exposure Prophylaxis (PrEP).
- Conduct data analysis in R using regression models and bar plots in preparation for manuscript writing.

### Research Assistant

*University of Connecticut, Allied Health/Statistics Departments*  
*Ibero-American Health and Well-being Evidence-Based Analytics Lab, Dr. Tania Huedo-Medina*

**Storrs, CT**  
August 2021 – June 2022

- Developed statistical analytical skills in Excel and SPSS for research projects.
- Analyzed effect sizes, publication biases, and other relevant metrics to understand effectiveness.

## WORK EXPERIENCE

### Pharmacometrics Intern

*Pfizer Inc.*

**Groton, CT**  
May 2024 – August 2024

- Developed a process to compare pharmacokinetic results in a simulated healthy cohort and a hepatic/renal impaired cohort.
- Conducted power calculations to evaluate the performance of these methods for use in future clinical trials.
- Set up a framework for simulating healthy cohorts and testing power across different drug PK models.

### Nonclinical Statistics Intern

*Pfizer Inc.*

**Groton, CT**  
August 2023 – May 2024

- Developed RShiny applications for use as internal educational tools.
- Worked with bench scientists for their data analysis needs and develop reports to assess variability and other metrics in their experiments.
- Created experimental designs for optimization experiments and used experimental results to identify optimal compound values.

### Peer Research Ambassador

*University of Connecticut, Office of Undergraduate Research*

**Storrs, CT**  
August 2023 – May 2024

- Led informational sessions about getting involved with undergraduate research and how to connect with professors.
- Conducted one-on-one meetings with students interested in hearing more about my research experiences and share advice on getting involved with research.

**Safety Pharmacology Intern****Groton, CT***Pfizer Inc.**June 2023 – August 2023*

- Collected and cleaned data from safety pharmacology studies investigating rodent toxicology and functional observational battery.
- Computed binary logistic regressions and chi-square tests to evaluate relationships between observations across the two study types using R.
- Developed visualizations for a final presentation on significant findings and correlations.

**Summer Growth Experience Intern****Groton, CT***Pfizer Inc.**May 2022 – August 2022*

- Wrote Python scripts to help process large .txt and .csv files.
- Worked with procurement professionals to understand supply chain and item management data.
- Researched solutions for Pfizer scientists' purchasing and order management processes.

**Digital Scholar Intern****Groton, CT***Pfizer Inc.**June 2021 – August 2021*

- Communicated with professionals in the Analytics, Data, and Learning organization within Pfizer Digital.
- Organized meetings to collect metadata for the Scientific Data Cloud, condensed data and arranged it in an Excel spreadsheet, uploaded metadata into Alation Data Catalog.

**TEACHING****Discussion TA for Undergraduate Course****Storrs, CT***STAT 1100Q: Elementary Concepts of Statistics**Fall 2024*

- Conduct Minitab demonstrations, answer questions about homework and course material, and develop exam review content for two weekly discussion sections.

**Grader for Undergraduate Course****Storrs, CT***STAT 3675Q: Statistical Computing**Fall 2024*

- Grade homework assignments, quizzes, and exams for about forty students each week.

**HONORS AND AWARDS****UConn Statistics in Pharmaceuticals 2024 Conference Poster Award****Storrs, CT***Project Title: Operating characteristics of the simulated healthy participant approach in impaired clearance studies.**August 2024*

- One of three winners out of ten poster submissions at the graduate and undergraduate level.

**ASA DataFest: Best Visualization****Middletown, CT***Hosted by Wesleyan QAC**April 2024*

- Built an RShiny app showing an interactive contour plot with sliders and radio buttons.
- Assumed a leadership role in the team by spearheading brainstorming and delegating tasks to the rest of the team.
- Presented results and a statistical solution to judges and offered advice to the data sponsors on how to utilize this advice to better their product.

**UConn Statistics in Pharmaceuticals 2023 Conference Poster Award****Storrs, CT***Project Title: Association Between Gastrointestinal Effects in Rodent Toxicology Studies and Decreased Locomotor Activity in Rodent Safety Pharmacology Studies**August 2023*

- Gave a five-minute presentation on my summer internship project.
- One of five winners out of over twenty poster submissions at the graduate and undergraduate level.

**UConn IDEA Grant Recipient****Storrs, CT***Project Title: A Novel Imputation Strategy for Incomplete Compositional Data Analysis* *April 2023 – May 2024*

- Awarded an IDEA Grant through the Office of Undergraduate Research for the 2023-24 academic year.
- Will conduct a student-driven research project, developing an imputation method for compositional data.

**ASA DataFest: Best Statistical Insight****Middletown, CT***Hosted by Wesleyan QAC**April 2023*

- Participated in ASA DataFest, a competition for undergraduate students tasked with analyzing a surprise, large, and complex dataset.

- Collaborated with team members from UConn to run a binary logistic regression on the dataset.
- Presented findings and an actionable solution for one of the data sponsor's problems to a panel of industry and academia judges.

## PROJECTS

### **Adapting Multiple Imputation for Compositional Survey Data**

**Storrs, CT**

*Undergraduate Honors Thesis*

*August 2023 – May 2024*

- Wrote a 16-page honors thesis for the culmination for my B.S. in Statistics.
- Discussed the development and performance of two novel methods for compositional missing data imputation.

### **Observations after a year of wearing an Apple Watch**

**Storrs, CT**

*Presented at NESS Data Science Day 2023*

*October 2023*

- Analyzed my personal data from a year of wearing an Apple Watch Series 8.
- Imputed missing Apple Watch data and explored research questions regarding factors impacting sleep duration and cycle tracking.

### **Analysis of COVID-19 Prevalence versus Yankee Candle Reviews**

**Storrs, CT**

*Course Project for STAT 4185: Advanced Data Manipulation & Analysis w/ Python August 2022 – December 2022*

- Investigated the relationship between COVID-19 numbers and average star ratings of candles on Amazon using Python.
- Conducted web scraping using BeautifulSoup, data cleaning and analysis using Pandas and NumPy, and visualization using Matplotlib.

## ACTIVITIES

### **New England Statistical Society NextGen Data Science Day Conference**

**Storrs, CT**

*Planning Committee Member*

*June 2023 – Present*

- Worked with other committee members to plan logistics for the one-day conference.
- Contacted community members and local statisticians to build relationships and invite potential speakers.
- Coordinated volunteers for the event and directed them to their roles throughout the day.

### **UConn Joint Statistics Club**

**Storrs, CT**

*Undergraduate President and Founding Member*

*June 2023 – May 2024*

- Brainstorm event ideas and volunteering opportunities with other founding members.
- Develop guides and resources for UConn Statistics students.
- Communicate with students and community members to increase outreach and engagement with the statistics field.

### **UConn Institute for Student Success**

**Storrs, CT**

*The Major Experience Mentor for Statistics*

*June 2023 – May 2024*

- Communicate with undeclared students interested in majoring in statistics and give insight into academic and career prospects as a statistics major.
- Represent the statistics major at university events and answer questions posed by students.

### **UConn Office of Undergraduate Research (OUR)**

**Storrs, CT**

*Peer Research Ambassador*

*June 2023 – May 2024*

- Describe personal experiences with research as an undergraduate to students interested in getting started with research and guide them on their path of getting involved.
- Share OUR research initiatives and grant opportunities with students.

### **UConn Biopharmaceutical Summer Academy, Statistics in Pharmaceuticals Conference**

**Storrs, CT**

*Student and Presenter*

*August 2021*

- Took a one-credit Graduate level course (BIST 5092) and learned about clinical trial design and pharmaceutical research.
- Completed a data visualization project with a group of four other students and presented our findings at the Statistics in Pharmaceuticals Conference.

## TEACHING AND GRADING

- Teaching Assistant for STAT 1100Q (Fall 2024)
- Grader for STAT 3675Q: Statistical Computing (Fall 2024)

## PRESENTATIONS

### Observations After a Year of Wearing an Apple Watch

*New England Statistical Society Data Science Day*

**Storrs, CT**

*October 2023*

- Presented a poster on my observations from data I downloaded from my Apple Watch, cleaned, and analyzed as a personal project.

## PUBLICATIONS

- Paudel, K., **Gupta, S.**, Gautam, K. et al. High Interest in Long-acting Injectable Pre-exposure Prophylaxis (LAI-PrEP) for HIV Prevention Among Men Who Have Sex With Men (MSM): Result From A Nationwide Survey in Malaysia. *J Community Health* (2023); <https://doi.org/10.1007/s10900-023-01195-8>
- Shrestha R, Altice FL, Khati A, Azwa I, Gautam K, **Gupta S**, Sullivan PS, Ni Z, Kamarulzaman A, Phiphatkunarnon P, Wickersham JA. Clinic-Integrated Smartphone App (JomPrEP) to Improve Uptake of HIV Testing and Pre-exposure Prophylaxis Among Men Who Have Sex With Men in Malaysia: Mixed Methods Evaluation of Usability and Acceptability *JMIR Mhealth Uhealth* (2023); <https://doi.org/10.2196/44468>

## PROFICIENCIES

**Statistics and Data Analysis:** R Programming, Python, SAS, STATA, Minitab

**Productivity:** Microsoft Office, Google Suite, Mac Pages, Keynote, iMovie, Audacity, Canva

**Certifications:** CITI Biomedical Research (Aug. 2022), CITI Social/Behavioral Research (Aug. 2022)