Statistics REU Schedule   **Updated: July 25, 2024**
May 28 – July 31, 2024
All times are EST (New York Time)

Most of the activities will be Live but some activities will be via Teams using the link
https://tinyurl.com/uncgreu2024

If you log in from a non-uncg background, you will need to wait for someone to let you in.

There will be some common activities where everyone will participate but Individual Research Teams will set up their own additional meetings!

Program Schedule (will be updated regularly)

All events will be in Petty 150. In case of excessive construction noise, we will shift to Sullivan 233

Important Notes:
- It will be a fairly intense program and students are required to attend all events.
- Students should not pick other jobs or classes during the entire duration of the program
- Missing program related events without permission can lead to dismissal from the program.
- Please make sure to bring your laptops.

- Most of the afternoons will be free to work on research projects independently, or as arranged with your mentors, except for invited lectures whose date/time will be on the schedule.
- There will be some common working lunches or dinners (about once a week) as described in the program details. Such meetings will include interactions with an invited speaker or discussion on some professional development related issues such as graduate school admission, seeking letters of reference, preparing a good presentation, working in the industry as opposed to the academy etc.
- Attending these working meals will be mandatory.
- We will have about 4-5 teams of about 2 students in each team. Teams will be finalized early in Week 2.
- All of the mentors will give one or two research talks during Week 1. Students should discuss their interests with mentors towards the end of Week 1or early in Week 2 and email Dr. Gupta their top three project choices by June 4. Research teams will be announced latest by June 7.

Week 1:

May 28, Tuesday

10:00–10:30:   Refreshments

10:30 -11:30   Welcoming Remarks
- Remarks by the Program Director Dr. Sat Gupta
- Remarks by CAS Associate Dean for Research Dr Stuart Markovitch
- Remarks by Math Stats Department Head Dr. Steve Tate
- Information provided by office staff Leslie/Denise
- Comments by mentors

11:45 -12:30:   Getting the most out of your REU – Dr. Lee Phillips, Director- Undergraduate Research, Scholarship and Creativity Office, UNC Greensboro

12:30 – 1:30:   Common Working Lunch with an opportunity for students to ask questions on any and all topics.

1:30 – 3:00   Introduction to Python – Dr. Dan Yasaki, Professor of Mathematics, UNC Greensboro.

3:00 – 4:00   Work with Denise Greenwell to get UNCG ID cards, if you don't already have one.

May 29, Wednesday

10:00 -11:00   An Introduction to the Shape of Data – Dr. Thomas Weighill, Assistant Professor of Mathematics, UNC Greensboro

11:30 -12:30   Introduction to Randomized Response Models – Dr. Sat Gupta, Professor of Statistics, UNC Greensboro

1:30-3:00   Introduction to LaTeX – Dr. Dan Yasaki, Professor of Mathematics, UNC Greensboro

May 30, Thursday

10:00-12:00:   R-Workshop 1: Dr. Scott Richter, Professor of Statistics & Director Statistical Consulting Center, UNC Greensboro

1:30 – 2:30:   RRT Work by Recent REU Students - Dr. Sat Gupta, Professor of Statistics, UNC Greensboro

3:00-4:00	Methods for Mixed Paired and Two-Sample Designs - Dr. Scott Richter, Professor of Statistics & Director Statistical Consulting Center, UNC Greensboro

May 31, Friday

10:00 – 11:00	Multi-parameter Persistence for Spatial Data: Dr. Thomas Weighill, Assistant Professor of Mathematics, UNC Greensboro
11:30 – 12:30	Recent Innovations in Quantitative RRT Models – Dr. Sadia Khalil, Visiting Assistant Professor of Statistics, Math Stats, UNC Greensboro
1:30 – 2:30	Analyzing intensive repeated measures: A case study of glycemic variability and wearable device data- Jianping Sun – Assistant Professor of Statistics, UNC Greensboro
3:00-4:00	Research Directions: Mixed Two-Sample Designs- Dr. Scott Richter, Professor of Statistics & Director Statistical Consulting Center, UNC Greensboro

Students set up individual meetings with mentors during the open time slots to discuss project selection. Email Dr Gupta your top 3 mentor choices by 6:00 pm on June 4

Other Task for Week 1:

- **Complete CITI Training (Students and Mentors) and Self-Evaluation Pre-Surveys (Students).** Surveys will be emailed to the students closer to the start of the program. Return completed surveys via email to Dr. Gupta by May 31, 5:00 pm

- Complete CITI Training on Responsible Conduct of Research. Register first and then choose RCR for Social and Behavioral Sciences (or something similar). See the link https://www.citiprogram.org

    Mentors also need to complete this training. Once done, please email Dr Gupta a copy of the completion certificate latest by May 31, 5:00 pm

    Please see the options offered by UNCG office of integrity:

    https://integrity.uncg.edu/rcr-training-resources/

    If you try to log in from your campus, you may be asked to pay for the course. In that case, wait until you get a UNCG id and use that to complete this training.

Week 2:

June 3, Monday

10:00-12:00	R-Workshop – 2: Dr. Scott Richter, Professor of Statistics & Director Statistical Consulting Center, UNC Greensboro
1:30 -2:30	A novel statistical model to analyze the effect of physical activity to interstitial glucose - Jianping Sun – Assistant Professor of Statistics, UNC Greensboro
3:00 – 4:00	Collecting and Analyzing Randomized Response Data - Dr. Sadia Khalil, Visiting Assistant Professor of Statistics, UNC Greensboro

June 4, Tuesday

From here on, start setting up research meetings with mentors but avoid times when we have common events.

10:00 – 10:30	Research Teams Decided
10:30-11:30	Mentors meet with their teams.
1:00 – 2:30	Wendy Shou PhD defense. REU students will attend to see what it is like to defend a PhD dissertation. Topic will be Kernel Density Estimation with Randomized Data.

June 5, Wednesday

10:00 – 12:00 & 2:00-4:00 (**Teams**)	Dr. Jianping Sun will start the meeting. Day-long Machine Learning Workshop by Dr David Banks, Professor, Duke University

June 6, Thursday

Before noon -	Individual Team Meetings

1:00 – 2:00	How relevant is the statistical evidence to the truth of a statement? – Dr. David Bickel, Professor in Informatics and Analytics, UNC Greensboro.
2:30-4:00 (Teams)	Experiences of Previous REU Students – Host Dr. Sat Gupta
	Joia Zhang (2021 REU, Doing PhD at Cornell)
	William McCance (2022 REU, Doing PhD at UNC Chapel Hill)
	Geoffery Kleinberg (2023 REU, Moravian University)
	Bailey Meche (2023 REU, Going to University of Chicago for graduate work)

June 7, Friday

10:00 – 12:00	Walk in the Battleground Military Park, a place of historical significance where one of the final battles of the Civil War was fought. There is an auditorium where you can watch a documentary if it is running that day. It starts 45 minutes past the hour.
	Meet at the Military Park at 9:30 and walk the park. 2332 New Garden Rd, Greensboro, NC 27410
	Show at the auditorium at 10:45
	Working Lunch at Saffron India at 11:45 1500 Mill St #104, Greensboro, NC 27408
2:00 – 3:00	Dr. Greg Bell, Dean Graduate School, and Professor of Mathematics, UNC Greensboro

Week 3:

- **Work with mentors on your projects**
- **Prepare your basic 15-minute presentation for June 13. It can be on any topic of your choice. We want to see how you organize your talk around your chosen theme, how your slides are, and how confidently you deliver your talk.**

June 10, Monday

Work with your mentors

1:30 -2:30   Community Engagement with Statistics – Dr. Sat Gupta

3:00-4:00   The art and science of great presentations – Dr Igor Erovenko, Associate Head and Professor of Mathematics, UNC Greensboro

June 11, Tuesday

June 12, Wednesday

June 13, Thursday   **Mentors – please attend.**

10:00-11:30   4 of the students (Thuc Nguyen, Daniel Gottschalk, Kendal Walker, Alvan Arulandu, in that order) make 15-minute PPT presentations on a topic of their choice. Mentors will provide feedback on students' presentations.

12:00 -1:00   3 of the students (Yessica Arzate, Alex Richardson, Will Staab, in that order) make 15-minute PPT presentations on a topic of their choice. Mentors will provide feedback on students' presentations.

1:00-2:00   Common working lunch in Petty 150

2:00 – 3:30   3 of the students (Jeffry Choi, Jacob Kathman, and Caroline Wyrick, in that order) make 15-minute PPT presentations on a topic of their choice. Mentors will provide feedback on students' presentations. Mentors will provide feedback on students' presentations.

Week 4

June 17, Monday

11:00-12:00   Publishing Journal Articles – Dr. Sat Gupta

June 18, Tuesday

10:00 -11:00 (Teams)   Preparing for a Successful Career – Dr. John Stufken, Professor of Statistics at George Mason University

June 20, Thursday

10:30 – 11:30   IRB Talk on Human Surveys – Megan Barton, IRB Compliance Coordinator, Office of Research Integrity

June 21, Friday

12:00 – 1:30   Working Lunch at the University Dining Center
Note the change in date.

2:00 – 3:00 (Teams)   Working in the Industry - Dr. Qi Zhang, Senior Manager, Data Analytics and Reporting Team at Alexion - AstraZeneca Rare Disease Unit.

Start preparing for Mid-Program presentations on Friday, June 28. Schedule will be sent later. Each research team will make a 20 - minute presentation discussing the problem the team is working on and progress made. These will be Team presentations and not individual presentations.

Week 5

June 25, Tuesday

1:30 -2:30 (Teams)   Undergraduate Research - Importance, Challenges and Examples – Dr. Abhyuday Mandal, Professor and Undergraduate Coordinator Department of Statistics, University of Georgia

June 28, Friday
Sullivan Building 233

11 :00 – 12:30   **An Alternative Sampling Method with More Efficient Estimators for Sensitive Variables**

Student Presenter: Alvan Arulandu – Harvard University
Mentor: Dr. Sat Gupta

An Optional Mixture Binary RRT Model that Accounts for Trust and Measurement Errors

Student Presenter: Caroline Wyrick - UNC Greensboro
Mentor: Sat Gupta, UNC Greensboro
Co-Mentor: Sadia Khalil, UNC Greensboro & Lahore College for Women University

Field Work Validation of a Mixture Binary RRT model that Accounts for Trust and Measurement Errors

Student Presenters: Caroline Wyrick, Yessica Arzate & Kendal Walker - UNC Greensboro
Mentor: Dr. Sadia Khalil - UNC Greensboro & Lahore College for Women University
Co-Mentor: Dr. Sat Gupta - UNC Greensboro

12:30 -1:30   Working Lunch, possibly including Computer Science REU Group

2:00 – 3:30   **Improved Confidence Intervals for Mixed Paired and Two-Sample Designs**

Student Presenters: Jacob Kathman (Wake Forest University), William Staab (UNC Wilmington)
Mentor: Dr. Scott Richter

Title: TBA

Student Presenters: Duy Thuc Nguyen (Harvard University) and Jeffrey Choi (NYU)
Mentor: Dr. Jianping Sun

Title: TBA

Student Presenters: Alvan Arulandu (Harvard), Daniel Gottschalk (Univ of Southern California), Alex Richardson (Bowdoin College)
Mentor: Dr. Thomas Weighill
PhD Student Mentor: Thomas Payne, UNC Greensboro

Week 6

July 3, Wednesday

10:00-11:00   Value of Undergraduate Research in Active Learning, Career Decisions, and Graduate Education - Dr. Kumer Pial Das, AVP for Research and Innovation, University of Louisiana at Lafayette

Week 7

Wednesday, July 10
11:00-12:00   Mentor/Mentee Conflicts – Sat Gupta

12:00-1:00   Working Lunch – Sullivan Second Floor Lobby

July 12, Friday
9:30 – 12:30   **Computer Science REU Final Presentations in Petty 224**
Petty 224

July 13-16   **Dr. Gupta is likely to be out of town.**

Week 8

July 17
10:30 – 11:30   Work status updates, 233 Sullivan Building. Each group will provide an oral update on their work.

12:00-1:30   Lunch at Safron

Week 10

July 30, Tuesday   Final Presentations. Each Team will make a 25+5 minute-presentation with a one-hour lunch break in the Sullivan lobby.

10:30 -2:30
303 Petty Building

Teams Link for Guests: https://tinyurl.com/uncgreu2024

10 :30 – 11:00   **Improved Confidence Intervals for Mixed Paired and Two-Sample Designs**
Student Presenters: Jacob Kathman (Wake Forest University), William Staab (UNC Wilmington)
Mentor: Dr. Scott Richter

11:00 – 11:30   **An Optional Mixture Binary RRT Model that Accounts for Trust and Measurement Errors**
Student Presenter: Caroline Wyrick - UNC Greensboro
Mentor: Sat Gupta, UNC Greensboro
Co-Mentor: Sadia Khalil, UNC Greensboro & Lahore College for Women University

11:30 – 12:00   **Field Work Validation of a Mixture Binary RRT model that Accounts for Trust and Measurement Errors**
Student Presenters: Caroline Wyrick, Yessica Arzate & Kendal Walker - UNC Greensboro
Mentor: Dr. Sadia Khalil - UNC Greensboro & Lahore College for Women University
Co-Mentor: Dr. Sat Gupta - UNC Greensboro

12:00 - 1:00   **Lunch Break – Hallway outside Petty 303**

1:00 - 1:30   **Tensor Product Splines for Analyzing the Effects Of Physical Activity On Interstitial Glucose Level**
Student Presenters: Duy Thuc Nguyen (Harvard University) and Jeffrey Choi (New York University)
Mentor: Dr. Jianping Sun

1:30 – 2:00   **Through the Grapevine: Vineyard Distance as a Measure of Topological Dissimilarity**
 Student Presenters: Alvan Arulandu (Harvard University), Daniel Gottschalk (University of Southern California), Alex Richardson (Bowdoin College)
Mentor: Dr. Thomas Weighill
PhD Student Mentor: Thomas Payne, UNC Greensboro

2:00-2:30   **Improving Efficiency and Privacy through Joint Scrambling for Sensitive Variables**
Student Presenter: Alvan Arulandu – Harvard University
Mentor: Dr. Sat Gupta

July 31
10:00-11:00
Petty 303

Final In-person meeting. We will discuss the overall program. We will collect your suggestions/comments.

Please bring your suggestions/comments in typed form without any name or other identifying information and drop it in a box that will be provided.

August 1 and 2

Virtual Meetings from 11:00-12:00 (Dr. Jianping Sun will lead) from 11:00-12:00.

Five students will speak each day sharing their REU experience, plan for journal submission, planned conference presentations, and future career plans etc.

Email Post-Self-Evaluations to Dr Gupta latest by August 2, 5:00 pm. Dr. Gupta will email post-evaluation survey before that.