

Statistics REU Schedule

Updated: July 7, 2021

May 24 – July 30, 2021

All activities – Online via Zoom

All times are EST

Zoom IDs for Common Meetings:

Zoom Meeting - REU Summer 21

Time: May 24, 2021 10:00 AM Eastern Time (US and Canada)

Join Zoom Meeting

<https://uncg.zoom.us/j/92248009466?pwd=d3dLTTRWTUw1MGp3dUdsYjVQSmhXZz09>

Meeting ID: 922 4800 9466

Passcode: 525399

- 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

- Most of the afternoons will be free to work on research projects independently, or as arranged with your mentors, except for Wednesday around noon when we will have invited lectures.
- 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 buy our lunches/dinners individually, connect via zoom, and eat at our respective places. At least one of the mentors will join the students. Send receipts to Carri or Katelyn (Department support staff). **As per UNCG policy, meal costs are limited to \$11.30 for lunches and \$19.50 for dinners. Alcoholic beverages are not allowed.**
- There will be some common meetings every week and some separate meetings involving the research teams and mentors
- We will have about 4-5 teams of 1-2 students in each team. Teams will be finalized by the end of Week 2.

Program Schedule (will be updated regularly)

Week 1:

May 24, Monday

10:00–10:30: Welcome by the Program PI & Department Head Sat Gupta, and Dr. Chuck Bolton, Associate Dean, College of Arts and Sciences

10:30-11:00: Comments by Carri Richter and Katelyn Smith

11:00-12:00: Introductions and brief comments by all the Mentors

12:30 – 1:30: Working Lunch – **Significance of Undergraduate Research**

2:30 – 3:30: **Introduction to Randomized Response Models** – Dr. Sat Gupta, Professor of Statistics and Head, Math Stats at UNC Greensboro

May 25, Tuesday

10:00 -11:00: **Analyzing Mixed Paired and Two-Sample Designs** – Dr. Scott Richter, Director Statistical Consulting Center, UNC Greensboro

11:30 – 12:30: **Musings on Design and Analysis of Experiments** – Dr. John Stufken, Director of the Informatics and Analytics program at UNC Greensboro

2:30-3:30: **The Mathematics of Voting Rights** - Dr. Thomas Weighill, Department of Math Stats, UNC Greensboro

May 26, Wednesday

10:00-11:00: **From Classical Statistical Data Analysis to Complex Big Data Analysis** – Dr. Xiaoli Gao, Department of Math Stats, UNC Greensboro

11:30 -12:30: **Applying to Graduate School** - Dr. Greg Bell, Professor of Mathematics and Associate Dean Graduate School –

12:30 – 1:30 Virtual Lunch, Discussions with Dr. Greg Bell on applying to Grad School

3:30 – 4:30 **Getting the most out of your REU-** Lee Phillips, Director- Undergraduate Research, Scholarship and Creativity Office, UNC Greensboro

May 27, Thursday

10:00-12:00

R-Workshop - I by Dr. Scott Richter, UNC Greensboro

2:30 -3:30

Composite Likelihood and Its Application in Long Sequence Biological Data – Dr. Jianping Sun, Department of Math Stats, UNC Greensboro

May 28, Friday

10:00-12:00

R-Workshop - II by Dr. Scott Richter, UNC Greensboro

4:00 -5:00

Each Friday, students meet as a group without mentors and discuss a topic of common interest. Set up your own zoom id

Other tasks for the day:

- **Complete CITI Training (Students and Mentors) and Self-Evaluation Pre-Surveys (Students) by close of day on May 28.**
- Surveys will be emailed to the students closer to the start of the program. Return completed surveys via email to Sat Gupta.
- 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 me a copy of the completion certificate latest by May 24, 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:

May 31, Monday Memorial Day No REU Activities

June 1, Tuesday

- 10:00-11:00 **An Application of Markov Chain Composite Likelihood in Recombination Model** – Dr. Jianping Sun
- 11:30-12:30 **Robust Classification of High-Dimensional Data with Fuzzy Group Information** – Dr. Xiaoli Gao
- 2:30-3:30 **Modeling Ranked Choice Voting** – Dr. Thomas Weighill, Department of Math Stats, UNC Greensboro
- 4:00 - 5:00 **Mixture Binary RRT Models with Untruthful Responding** – Dr. Sat Gupta

June 2, Wednesday

- 10:00-11:00 **Workshop on LaTeX** – Dr. Dan Yasaki, Department of Math Stats, UNC Greensboro
- 11:30-12:30 **Circulant Symmetric Matrix on Spatial Statistics** – Dr. Haimeng Zhang, Professor of Statistics and Director Graduate Studies, UNC Greensboro
- 12:30 – 1:30 Working Lunch – Discussions with Dr Zhang on Life of a Graduate Student. Dr. Zhang invited to lunch.
- 2:00-3:30 **Workshop on Python** – Dr. Dan Yasaki, Department of Math Stats, UNC Greensboro
- 4:00 – 5:00 **Subdata Selection** – Dr. Rakhi Singh, Postdoc, Informatics & Analytics, UNC Greensboro

June 3, Thursday

- 10:00-11:00 **Unequal Variance and Combined Tests in Mixed Paired and Two-Sample Designs** - Dr. Scott Richter

Students set-up individual meetings with mentors rest of the day to discuss project selection. Email Dr Gupta your top 2 or 3 project choices by 5:00 pm

June 4, Friday

- 10:00 – 10:30: Mentors meet to finalize teams
- 10:30-11:00 Students and Mentors all meet as one group to announce research teams
11:30-12:30 Mentors meet with their teams using their own Zoom IDs
2:30-3:30 Experiences of previous REU Students – Multiple Former Students
Amber Young – Purdue/UNC Chapel Hill (2018 REU)
Victoria Belotti – Illinois Institute of Technology (2020 REU)
Maxwell Lovig – University of Louisiana at Lafayette (2020 REU)
- 4:00 -5:00 **Each Friday, students meet as a group without mentors and discuss a topic of common interest.**

From here on, students will set up their meetings with mentors. There will also be some common programs each week.

Week 3:

June 7, Monday

10:00 – 12:00 & 2:00-4:00

Day-long Machine Learning Workshop by Dr. David Banks, Director SAMSI

June 8, Tuesday

- 10:00-11:00 **Statistical Consulting – Some Real Case Studies** – Dr. Sat Gupta
- 11:30-12:30 **Potential Mentor/Mentee Conflicts** – Dr. Scott Richter, UNC Greensboro

June 9, Wednesday

- 10:00-11:00 3 of the students (**Joia, Michael, Christina**, in that order) make 15-minute presentations on a topic of their choice to assess their baseline seminar presentation skills. **Mentors please attend**
- 11:30-12:30 **An Intuitive Introduction to Finite Element Methods** - Dr. Yi Zhang, Department of Math Stats, UNC Greensboro
- 12:30 – 1:30 Working Lunch – Working in the Industry vs. Academy. Dr Zhang invited
- 3:00-4:00 3 of the students (**Grace, Julie, Sithija**) make 15-minute presentations on a topic of their choice to assess their baseline seminar presentation skills. **Mentors please attend**

4:00-5:00 3 of the students (**Samantha, Trisha, Nathaniel**) make 15-minute presentations on a topic of their choice to assess their baseline seminar presentation skills. **Mentors please attend**

June 10, Thursday

10:00-11:00 **Publishing Journal Articles** – Dr. Sat Gupta

June 11, Friday

Week 4:

June 14, Monday

10:00 -11:00 **Preparing for a Successful Career-** Dr. John Stufken, Director of the Informatics and Analytics program at UNC Greensboro

June 15, Tuesday

June 16, Wednesday

11:30-12:30 Invited talk “Value of Undergraduate Research in Active Learning, Career Decisions, and Graduate Education” by Dr. Kumer Pial Das, Professor and AVP for Research, Innovation and Economic Development and Assistant Provost, University of Louisiana at Lafayette

12:30 – 1:30 **Working Lunch – Discussions with Dr. Das. Publishing the work done by undergraduate researchers**

Week 5

June 21, Monday

June 22, Tuesday

June 23, Wednesday

11:30-12:30 Invited Lecture “Applying Data Science and Statistics in Industry by Professor Mark Daniel Ward of Purdue University

12:30 – 1:30

Meet with external program reviewer Dr. Ward. Dr. Ward will share experiences from The Data Mine, working with 40 Corporate Partners, across all sectors of industry, also including the national labs. Dr. Ward is interested to discuss students' plans and their professional development aspirations. **Only students attend this virtual lunch.**

June 25, Friday

1:00 – 3:30:

Mid-Program 20- minute Presentations by Research Teams to the entire group. It will be enough to share with the group in some specificity the project you are working on and the progress you have made.

Presentation Order:

Joia Zhang, Nathaniel Mersy
Sithija Manage, Michael Zheng
Trisha Nayak, Samantha Kilcoyne
Julie Reidy, Christina Hoffman
Grace Rhodes

Week 6: June 28 – July 2

Focus on Research with Mentors incorporating the feedback received during mid-program presentations.

Week 7: July 5 – 9

July 7, Wednesday

11:30-12:30

~~Invited talk “Making a Great Presentation” by Professor Igor Erovenko, Associate Head, Math Stats Department, UNC Greensboro~~

~~12:30 – 1:30~~

~~Virtual Lunch – Seminar Presentations~~

July 9, Friday

10:00-12:00

Students provide updates on your research. Please follow the same order you followed for mid-program presentations. Give a quick recap of what you presented earlier and what you have added since then. About 15-20 minutes each team.

12:00-1:00

Virtual Lunch – Discussions on your presentations

Week 8: July 12 – 16

July 12, Monday

11:30-12:30

Invited talk “Diversity and Equity in Academia: Finding Your Way and Working with a Team. by Professor Gabriela Stein, Psychology Department, UNC Greensboro

Start working on writing your work in the form of a journal article. The final version may not be ready for submission until months after the program but try to learn the nuances of writing a paper.

July 14, Wednesday

11:30-12:30

The Need for Numerical Analysis (survey level research talk) - Dr. Tom Lewis, Department of Math Stats, UNC Greensboro

Virtual Lunch with Dr Lewis. Discussion on the significance of numerical solutions.

Week 9: July 19 - 23

- Preliminary research presentations by students
- Continue to refine your draft of the journal article

Week 10: July 26 – 30

July 28, Wednesday

11:30-12:30

Invited talk “Spectral Theory of Differential Operators on Sphere Quotients” by Dr. Younus Zeytuncu, University of Michigan-Dearborn

12:30-1:30

Virtual Lunch. Discussions with Dr. Zeytuncu

July 29, Thursday

10:00 – 12:30:

Final Presentations:

25- minute Presentations by Research Teams to the entire group. Math Stats Faculty and Graduate Students will be invited.

Presentation Order:

Joia Zhang (University of Washington, Seattle), Nathaniel Mersy (St Olaf College)

Mentors: Sat Gupta & Sadia Khalil

Sithija Manage (Texas A & M University), Michael Zheng (University of Connecticut)

Mentor: Xiaoli Gao

Grace Rhodes (Mount Holyoke College)

Mentor: Jianping Sun

Julie Reidy (University of Connecticut), Christina Hoffman
(University of South Florida)

Mentor: Thomas Weighill

Trisha Nayak (University of Georgia), Samantha Kilcoyne
(Williams College)

Mentors: John Stufken & Rakhi Singh

July 30, Friday

12:30-1:30

- Virtual Lunch – Program Highlights/Suggestions
- Self-Evaluation Post-Survey by students
- Evaluation of the REU Program and the Mentors by the students
- Program Completion Certificates will be sent by email