



2022-2023 Research Studio: Introducing Techniques, Graduate Life, and Opportunities to Underrepresented Undergraduates

1. THE MRS FOUNDATION SHOULD SUPPORT

Research Studio: Introducing Techniques, Graduate Life, and Opportunities to Underrepresented Undergraduates

2. WHAT IS THE PURPOSE OF THE PROJECT

The purpose of this project is two fold. Our graduate student members come from many different countries and backgrounds that are underrepresented in STEM fields. By presenting short workshops on technical techniques they use for their research, we aim to increase the confidence of our underrepresented members as researchers in their respective fields. In presenting technical sessions, our members will gain science communication skills, and showcase the growing diversity of research communities to inspire undergraduate STEM students. Beyond these technical workshops, we will also organize a resume building workshop and a graduate students panel discussing applying to graduate school and life as a graduate.

As a joint program between UNCG, a Minority Serving Institute, and NC A&T, a Historically Black College and University, the MRS chapter at The Joint School of Nanoscience and Nanoengineering (JSNN) is positioned for high impact outreach to underrepresented and underserved students. By inviting undergraduates from both universities, we are tapping into these communities to introduce students to advanced techniques and methods to enhance their undergraduate education. We will also discuss the lifestyle of graduate student researchers so these undergraduates (many of whom are first generation college students) can make better informed decisions about career steps after they graduate.

3. THE PROJECT LEAD(S) IS (ARE)

4. THE TARGET AUDIENCE FOR THIS PROJECT IS:

Underrepresented minority undergraduate and graduate students from UNCG, a Minority Serving Institute, and North Carolina Agricultural and Technical Institute, a Historically Black College and University.

5. WHAT IS THE INTENDED OUTCOME OF THE PROJECT?

Leaving undergraduate students from underrepresented minority groups with the ability to make more informed decisions about their careers and technical knowledge that may lead students to pursue newly gained interests.

Providing graduate students the opportunity to practice science communication, gain confidence in their identities as researchers, and instill community service values by making an impact on younger students.

6. HOW WILL THIS PROJECT/PROGRAM BENEFIT THE MATERIALS COMMUNITY?

Our project benefits the materials community by spreading knowledge regarding materials characterization tools and methodologies (XRD, XPS, PCR, etc.), career paths in materials research/fields, and inspiring future participation in materials research to grow the materials community. In accomplishing this, the hope is that the materials community, both in research and occupation, will become diverse and representative of the world we live in. Also, our members come from many countries, represent several ethnicities, and have taken different paths to graduate school. This event prepares our members to be leaders and representatives of the materials community, resulting in more equitable representation in the future.

7. DOES MRS OR ANYONE ELSE OFFER A SIMILAR PROGRAM?

MRS and other similar organizations offer similar programs at conferences, meaning the audience is limited to students that can afford to attend such events. Our project brings these programs to students at an MSI and HBCU, drastically decreasing the barrier to access so undergraduate students can experience this type of event.

8. WHAT IS NEEDED FOR THIS EFFORT?

Our target attendance is 60 people (20 graduate students and 40 undergraduate students). As this would be a long event on a Saturday, we want to provide warm meals to the attendees. This is the bulk of expenses. To attract undergraduate students, we want to raffle some t-shirts and coffee mugs displaying the winning pieces from our NanoArt Exhibit event, which were all submitted by graduate students.

9. WHAT IS THE BUDGET FOR THE PROJECT (ITEMIZE IF POSSIBLE)?

To feed ~60, catering from a local restaurant will be ~\$500, and we are adding in a 20% margin for potential inflation for a total amount of \$600 for catering.

For 10 t-shirts, the price is ~\$160 (~\$16/shirt).

For 5 mugs, the price is ~\$100 (~\$14/mug, extra cost to account for shipping fees).

100 logo pens for ~\$60 (~\$0.50/pen, extra cost to account for shipping fees).

10. HOW MUCH ARE YOU REQUESTING FROM THE MRS FOUNDATION?

We are requesting \$920 in total.

11. IS THIS TOTAL FUNDING, SEED MONEY OR MATCHING FUNDS?

Total funding.

12. IF SEED MONEY OR MATCHING FUNDS, PLEASE PROVIDE ADDITIONAL DETAILS.

Not applicable.

13. DO YOU REQUIRE ASSISTANCE FROM A MRS OPERATING COMMITTEE?

No.

14. DO YOU REQUIRE ASSISTANCE FROM MRS HEADQUARTERS STAFF?

No.

15. PROVIDE A BRIEF EXECUTIVE SUMMARY OF THE PROPOSED PROJECT/PROGRAM

We will start the program off by welcoming undergraduate students to JSNN, handing out logo pens, and bringing graduate and undergraduate students together in the atrium to meet and greet for 30 minutes.

Then we will gather participants into the auditorium for four 30-minute back-to-back technical skill presentations from some of our international students and members of the Materials Research Society at JSNN tentatively focused on Atomic Layer Deposition (ALD), Transmission Electron Microscopy (TEM), Raman Spectroscopy, etc. We will take a one hour break to gather everyone for lunch that is catered by a restaurant, which will also provide undergraduate students with the opportunity to get to know graduate students some more. After lunch we will spend 45 minutes providing tours to undergraduate students from our graduate students to provide undergraduate students with the opportunity to see our facilities and get a better feel for what it is like to work at JSNN.

Once the tours are complete, we will reconvene in the auditorium to hold a resume workshop. This workshop will start with a 15 minute presentation on the various resume formats and strategies to write resumes tailored for positions of interest. The rest of the hour will involve the undergraduate students creating and updating their resume, with graduate students providing assistance. Finally, we will hold a one hour graduate student panel, where three to four graduate students will take questions about graduate student life from undergraduate students. Other graduate students present in the audience will be able to chime in as well.

We will have a raffle at the end of the program to give away t-shirts and coffee mugs with the custom nanoscale art, as well as closing remarks from the president of the MRS chapter at JSNN to wrap up the program and thank all students for their participation for 15 minutes.