

*MSFP 2021*  
*General Information for Student Participants*

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Due to the unprecedented impacts of the COVID-19 pandemic, the program is scheduled to be online.

## **NSF Macromolecular Structure and Function Program 2021**

July 15 – August 6

Online, virtual summer undergraduate research and mentoring program

### **Program goals**

The objectives of MSFP are 1) To provide a mentored research experience in Macromolecular Structure and Function and 2) To provide training in professional skills that will assist the participants in pursuing a degree and career in STEM. This fully virtual project involves faculty at four geographically-distributed institutions specializing in diverse but complementary approaches to study macromolecular structure and function.

**Our intellectual focus** is Macromolecular Structure and Function. In recent years there has been a dramatic expansion in the number of known macromolecular sequences and structures. Our ability to make full use of this information has been hindered by the fact that biochemical or biophysical characterization is feasible with only a small percent of them, but advances in computer-based algorithms and analytical methods provide complimentary methods that greatly expand our abilities to learn what macromolecules look like, what they do, how they perform their functions, and how they are regulated. Computational methods can also be used to elucidate molecular mechanisms that are beyond the resolution of experimental techniques. Our interdisciplinary team of mentors are experts in a variety of computer-based methods and will provide projects that enable participants to learn about cutting edge research questions, approaches and methods. At the same time, a common research theme helps enable a cohort experience for the participants who will work together during the first Welcome Week, during workshops, and while preparing oral, written and poster presentations of their research and results.

### **Contact information:**

PI/Director: Constance (Connie) Jeffery, Associate Professor, Dept. Biological Sciences, University of Illinois at Chicago, Chicago, IL, 60607 [cjeffery@uic.edu](mailto:cjeffery@uic.edu)

Near-peer Mentor: Nicole Curtis, graduate student, Dept. Biological Sciences, University of Illinois at Chicago, Chicago, IL, 60607, [ncurtis2@uic.edu](mailto:ncurtis2@uic.edu)

Files can be downloaded from Box site (invitation from [cjeffery@uic.edu](mailto:cjeffery@uic.edu))

MSFP Web site: <http://jefferylabuic.weebly.com>

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## **General Guidelines**

### **Meetings with Mentors**

Each mentor is expected to meet with his/her student at least two hours per week. Of course, if the mentor perceives that the student is having difficulties, he/she should be willing to spend additional time with the student. Students are expected to commit a minimum of 30-40 hours weekly to their research project

### **Student Work/Summer School Restrictions**

Students are not allowed to attend summer school or hold a job during the summer. The purpose of the MSFP is for the students to have an intensive, paid research experience, which requires a minimum commitment of 40 hours a week.

### **Absences**

Students should have all absences during the week approved by both the faculty mentor and the MSFP Director. Absences should be planned in advance, if possible. The MSFP Staff should know about all planned absences during the first week of the program. Also, the MSFP staff should be notified immediately if a student misses an appointment with you, even if later you determine that the absence was reasonable.

First Name	Last Name	Name of College and Location	Completing year in college	Self-Identified as	USA Citizen or Permanent Resident	email	Mentor
Carolina	Ortiz	University of Puerto Rico	Junior	Latinx	yes	<a href="mailto:carolina.ortiz5@upr.edu">carolina.ortiz5@upr.edu</a>	Reynolds
Jaynia	Garcia	Loyola Marymount University, Los Angeles, CA	Junior	Latinx	yes	<a href="mailto:jgarc176@lion.lmu.edu">jgarc176@lion.lmu.edu</a>	Pinkett
Faith	Hernandez	Wellesley College, Wellesley, MA	Junior	African American and Latinx	yes	<a href="mailto:fhernand@wellesley.edu">fhernand@wellesley.edu</a>	Jeffery
Cesar	Siete	University of Illinois at Chicago, Chicago, IL	Junior	Latinx	yes	<a href="mailto:csiete2@uic.edu">csiete2@uic.edu</a>	Ma
Karla	Gonzalez-Cruz	University of Puerto Rico	Junior	Latinx	yes	<a href="mailto:karla.gonzalez42@upr.edu">karla.gonzalez42@upr.edu</a>	Khalili-Araghi
Amina	Rizwan	Bay Path University, Longmeadow, MA	Junior	White/Caucasian	yes	<a href="mailto:arizwan@baypath.edu">arizwan@baypath.edu</a>	Lin
Jorge	Villa	Iona College, New Rochelle, NY	Junior	Latinx	yes	<a href="mailto:jvilla2@gaels.iona.edu">jvilla2@gaels.iona.edu</a>	Haddadian

## **Student Participant Meetings, Career Preparation and Professional Development Workshops**

<b>Example Week</b>	Full-time mentored research project Participant meetings with faculty mentor Participant Group Meeting/Workshop/Social Activity with PI and near-peer mentor Individual Wellness Check-in with near-peer mentor Professional Development Workshop Assignment Due Short evaluations filled out (weeks 3, 6, 8)
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**Weekly Student Group Meetings with the PI and near-peer mentor** All MSFP students are required to attend weekly meetings of the MSFP student cohort with the director and near-peer mentor on **Tuesdays at noon Chicago time**. These meetings give us an opportunity to support student progress and make sure that students are adjusting well to the program. The meetings are for networking, helping participants remain connected, discussing research, informal exchanges of information, supporting student progress, and making sure that students are adjusting well to the program. Some of the slots will be used for workshops or social events. Usually on Tuesdays, but please see schedule.

**Weekly Individual Wellness Check-ins with the near-peer mentor** All MSFP students will be assigned a Near-peer mentor (graduate student who will help the student participants and provide assistance to students who need help with their writing). The MSFP students will have a short weekly meeting (10 – 15 minutes) with their Near-peer mentor. They will help in coaching the students in planning and completing assignments and identifying concerns and challenges. Varying times.

### **Professional Development Workshops**

All the student participants are required to attend Workshop sessions throughout the summer. These workshops are **Thursdays from noon to p.m.** These meetings give the students invaluable instruction about topics such as: Oral and Written Scientific Communication, Diversity, Ethics, Careers in STEM, Graduate School, etc. These sessions are mandatory, so we request that labs adjust your work calendars to ensure the student will be able to attend. Usually on Thursdays, but please see schedule.

#### **Professional Development Workshops**

Introduction to Research

- (1) Ethical issues and responsible conduct of research,
- (2) Diversity Workshop
- (3) Career Panel with guest speakers about career paths and opportunities in academia, government labs, and biotechnology companies,
- (4) Graduate Student Panel to learn about the application process, what to expect in graduate school, applying for fellowships, finding the right advisor, and strategies for success,
- (5) Creating and using an Individual Development Plan.

**Workshops in oral and written scientific communication** include

- (1) Preparing effective oral presentations, with
  - a. Workshop for 2-minute Elevator Pitch
  - b. Workshop for Research Symposium presentation
- (2) Written Communication skills including an
  - a. Abstract Prep Workshop
  - b. Introduction to Writing and Reading Research Papers (for preparing a Final Paper)
  - c. Workshop for Creating/Presenting a Poster.

**Assignments (see due dates on Calendar)**

Pre-survey

Photo for abstract book

Elevator pitch (give during one of the workshops or group meetings)

3 Evaluations

Final abstract for Abstract book

Paper

Poster

Powerpoint file of talk

Give talk at Research Symposium

**Project Evaluation and Reporting.** To check the project is progressing satisfactorily, short questionnaires will be filled out by the participants and mentors (weeks 3, 6, 8). Participants will also be encouraged to give feedback at weekly meetings with the PI and near-peer mentor.

**A virtual Research Symposium and Award Ceremony** for participants, mentors, and members of the mentors' labs. Participants will present their research accomplishments as an oral presentations and receive feedback. Participants will receive certificates for participation and an abstract booklet.

**After end of program:**

Overall assessment will use the NSF's web-based Student Assessment of Their Learning Gains Undergraduate Research Student Self-Assessment (SALG URSSA). Students will be tracked after the program in order to determine career paths.

## **Checklist for Students to Ensure Productivity**

- Have you tried to plan your work systematically?
- Have you identified the major difficulties?
- Do you understand the relevant references?
- Are your records in good order and could you answer a question on something you did two weeks ago?
- Have you drafted the first version of any portion of the work that has been completed?
- Do other people find your written work difficult to understand?
- Are there any tables, figures, or other matters that could usefully be prepared at an early stage?
- Do those individuals in the department/laboratory you are working in consider you a productive individual/member of the research team?

*\*\*Adapted from the Council of Graduate Schools' Supervisory Practice Handbook  
Thank you so much/or being such an imperative part of the MSFP! You are much appreciated!*

# Macromolecular Structure and Function Program 2021

## Student Participant Evaluation

Due: July 2<sup>th</sup> (#1), July 23 (#2), August 3 (#3)

Please submit the report by the listed dates above. By the end of week 8, a total of 3 reports should be uploaded. Thank you!

**Due:** \_\_\_\_\_  
(To be completed by the student)

Please fill out and upload to the MSFP Box site

*\*Please type the questions and answers*

1. Have you been able to maintain your timeline for research projects? How many pages of your draft have you completed so far and have you reviewed them with your mentor and writing consultants?
2. How is your presentation coming along? Have you begun putting your power point slides, transparencies, or poster board materials together? Have you reviewed your presentation with your mentor?
3. What other preparations if any will you need to complete in order to submit your final symposium presentation and research paper?

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Name of student: \_\_\_\_\_

Date: \_\_\_\_\_