**University of Rochester Department of Chemistry** **Annual Graduate Student Activity Report**

**Last Name:** **Mondal** **First Name:** **Mohammad Elious Ali**

**Advisor:** **Pengfei (Frank) Huo** **Date: 06 / 26 / 2023**

**Year Entered PhD Program:** **2021** **Years Completed in Program:** **2**

**Number of Course Credits Completed:** **29** **Cumulative GPA: 3.448**

**Target Graduation Date: 08 / 31 / 2026**

| Program Requirement | Completed (Date) | Scheduled (Date) | Overdue |
|---|---|---|---|
| Cumulative Exams | **2/11/22, 3/11/22, 4/8/22, 5/13/22, 6/10/22, 7/8/22** | | |
| Second Year Oral Exam | **06/12/23** | | |
| Third Year Seminar | | | |
| Fourth Year Review | | | |

## 1. Fellowships, Travel Grants, and Awards

**A.** Applied for (include application date)
N/A

**B.** Received (include Departmental and University Teaching Awards AND include any fellowships, travel grants, and awards received in previous years)
N/A

## 2. Synergistic Activities and Departmental/University Service

**A.** List any teaching activities, including teaching assistant positions (with course number and instructor) and any mentoring activities (name and time period for research mentorship responsibilities for undergraduate, first-year graduate, or high school research students)

**Teaching Assistant**: 1) CHM - 131 (General Chemistry I), Fall 2021
2) CHM - 132 (General Chemistry II), Spring 2022
3) CHM - 251 (Physical Chemistry I), Fall 2022
4) CHM - 451 (Quantum Chemistry I), Fall 2022

**Graduate Mentor** of **Sebastian Montillo Vega**, Incoming graduate student in 2022-batch

**B.** List any other synergistic or outreach activities that are relevant to your graduate studies in chemistry (include outreach, departmental or university committee service, and volunteer efforts)

**Upward Bound Summer Program:** A Computational chemistry summer camp for High-School students conducted in July 2022.

## 3. Publications since entering the Ph.D. program

**A.** Published (please provide a complete reference, including all papers published while a student at the University of Rochester)
N/A

**B.** Submitted (please include authors, title, journal to which submitted, and submission date; do NOT include manuscripts "in preparation")

**a. Quantum Dynamics Simulations of the 2D Spectroscopy for Exciton Polaritons**
Elious Mondal, Eric Koessler, Justin Provazza, A. Nickolas Vamivakas, Steven T. Cundiff, Todd D. Krauss, and Pengfei Huo

## 4. Presentations at regional/national/international conferences

(Include conference name, location, date, presentation type (poster/talk), and title; include all conferences attended while a student at the University of Rochester)

a) Poster presentation in TDDFT summer school – 2023 held at Rutgers University Newark
Topic – Quantum Dynamics Simulations of the 2D Spectroscopy of Exciton Polaritons

## 5. Research Accomplishments

Briefly (limit 1000 words) describe significant research accomplishments in the last year.
Second year students should attach their second year proposal document to the end of this document and in this section write, "See attached second year proposal."

## 6. Research Goals

**A.** Briefly describe (limit 500 words) your **short-term** research goals for the next year (including project objectives, manuscript preparation and submission, etc.). Second year students write, "See attached second year proposal" and attach the research summary and proposal to the end of this document.

**B.** Briefly describe your **long-term** research goals (limit 750 words) for your project beyond the next year (including project objectives, manuscript preparation and submission, etc.).

## 7. Career Planning Goals

**A.** Briefly (limit 500 words) describe your specific **short-term** career development goals (including talking with seminar speakers, identifying possible postdoctoral research advisors, or exploring career options).

I want to focus more on exploring the basics and applications of all the theoretical research going on in the field of quantum dynamics. I have been to some conferences and a summer school and gained a lot of insight from the. So I plan to do more poster sessions and participate in more conferences to get familiar with other scientists. I also plan to search and apply for fellowships applicable to me.

**B.** Briefly (limit 500 words) describe your specific **long-term** career development goals (including application for jobs or postdoctoral research positions).

With my PhD spent in understanding the concepts of quantum dynamics of open systems in Huo lab, I plan to carry out some more research for more experience in this field from a different perspective and so I plan to apply for postdoctoral positions. When I feel I have gained enough experience to pass on the knowledge to others, I will apply for permanent faculty positions to continue with my research goals.

**8. Safety**

**A.** If you work in a research lab, list the five most dangerous procedures you do.

**B.** Review the Standard Operating Procedures (SOPs) for these five topics on the Chemistry Department Safety Wiki. Remember that you can also utilize SOPs written by other research groups.

If any topic is missing write a SOP for that topic. Attach your new SOP and send a copy to Tessa Baker (tbaker10@ur.rochester.edu).

If all five topics exist review the SOPs and resign that you have read the five SOPs. Send an e-mail Tessa once complete so she can forward the list to your committee members.

During your review of SOPs, comment if you do anything differently than the SOP states and why you think your procedure is safer or more appropriate. Also list any corrections you think should be made to the SOP.

**Please attach your updated CV to this report.**

**Scheduled Date for Annual Review Meeting: 06 / 12 / 2023**

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Student's Signature

**Committee Approval of Student Progress (Note: First-year students only require the signature of their research advisor):**

| | |
|---|---|
| **Pengfei Huo** | |
| Advisor's Name | Advisor's Signature |
| **Todd Krauss** | |
| Thesis Advisory Committee Member Name | Thesis Advisory Committee Member Signature |
| **David McCamant** | |
| Thesis Advisory Committee Member Name | Thesis Advisory Committee Member Signature |