

**BARNARD COLLEGE**  
**DEPARTMENT of CHEMISTRY**  
**MEMORANDUM**



To: Junior Chemistry and Biochemistry Majors  
From: Marisa Buzzeo, Assistant Chair  
Re: Invitation to participate in Senior Honors Research Program  
Date: February 3, 2020

One of the ways to satisfy the senior requirement in biochemistry and chemistry is the Senior Honors Thesis course, CHEM BC3901x-3902y. This is a demanding program, requiring a significant commitment of time for both semesters of the senior year and often the summer preceding the senior year. We invite all interested rising senior chemistry and biochemistry students to apply to participate in the Senior Honors Thesis program.

**Things to consider.** In determining if a Senior Honors Thesis is right for you, please consider (1) your previous research experience, (2) your passion for laboratory work, (3) the coursework you have remaining in your senior year, and (4) any other commitments that will significantly impact the time you have available. Some students may find that independent research via Problems in Chemistry (BC3598/3599) for one or both semesters is a more appropriate choice given their interests and/or time. Your advisor can help you to consider all the options and guide you in making an informed decision.

**Senior Thesis Program requirements.** There are two components to participating in the year-long Senior Honors Thesis program: seminar and research. For the seminar component, thesis students enroll in the year-long course CHEM BC3901-3902, a weekly seminar on Friday afternoons from 2:10-4:00 PM. These meetings focus on the process of research and allow for exchange of information about each student's project. Students give two or three oral progress reports each term. The major part of the Senior Honors Thesis program is guided research in chemistry or biochemistry under the direction of a faculty member. For the research component, a student enrolls in the year-long course CHEM BC3903-3904 in the section that corresponds to the student's research advisor. Thesis participants spend at least two afternoons a week (or the equivalent) in the lab working on their projects, with additional time for reading, writing, and analyzing data. In April, students submit a comprehensive written thesis, give a final oral presentation of their work, and take a brief oral examination conducted by a committee of three faculty members.

**Research opportunities.** As you may already know, there are research opportunities both in our department and beyond. Faculty sponsors in the Barnard Chemistry department include Profs. Austin (bioinorganic), Buzzeo (biological physical), Crowther (physical), Rojas (organic synthesis), Merrer (physical organic), Vizcarra (biophysical), and Campbell (inorganic). To give a few examples of research opportunities outside the Barnard Chemistry Department, in the Biology Department, Profs. Mansfield, Morton, and Snow do research related to biochemistry. Prof. Mailloux in Environmental Science applies chemistry to environmental studies. Prof. Bostick of Lamont Doherty Earth Observatory has had Barnard students in his environmental chemistry laboratory. Prof. Venkataraman of Columbia's Applied Physics Department has been interested in having Barnard students involved in her nanoscience research. Students have done thesis projects supervised by Columbia Chemistry and Biology faculty, by faculty at the Columbia

medical school, and elsewhere. The project must have a firm connection to chemistry or biochemistry, but we encourage you to consider opportunities broadly.

It is not your responsibility to come up with your research project. Instead, you will work on some aspect of an ongoing research program. We encourage you to speak to several potential research sponsors; this will give you a broader range of choices and a better chance of finding a position. You may also want to talk to this year's thesis students to ask them about their experiences. While not an essential part of the program, it is an excellent idea to begin your research project in the summer as part of a paid fellowship program at Barnard or elsewhere. If you are considering a laboratory outside of Barnard and have a question about funding your summer research, please talk to your advisor; we will make every effort to help

Please note that final acceptance in the Senior Thesis program is contingent on space being available in one of the research groups you have selected and on the Chemistry faculty agreeing with you that a senior thesis makes sense given your academic and research background and your interests. Please complete the attached decision form and return it to Ms. Joanna Chisolm (Alt 504A) by **Friday, February 14<sup>th</sup>**.



Name \_\_\_\_\_

(1) Are you interested in joining the Senior Honors Thesis program?

\_\_\_\_ Yes, I am interested.

\_\_\_\_ No, I am not interested.

*If you answered 'Yes' to Question (1), please complete Questions (2) – (4). If you answered, 'No,' please proceed to bottom of form.*

(2) In which research groups are you interested in working? (Please list your preferred laboratory as well as one or two alternates)

Preferred laboratory \_\_\_\_\_

Alternate laboratories \_\_\_\_\_

\_\_\_\_\_

(3) Please list any major requirements you will be completing in your senior year.

(4) Do you have previous research experience?                      **Yes**                      **No**

If yes, please list where and when.

**Please print your name, sign, and date below and return form to Joanna Chisolm (Alt 504A) by Friday, February 14<sup>th</sup>**

*I, \_\_\_\_\_, have reviewed my decision regarding the Senior Thesis Program with my major adviser.*

Signature: \_\_\_\_\_

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