I am among those who think that science has great beauty. A scientist in his laboratory is not only a technician: he is also a child placed before natural phenomena which impress him like a fairy tale.

~Marie Curie

About this Class

ESF 296 (Communication in the Sciences or, more informally, the “SYNAPSE seminar”) is an experimental course, taught concurrently with ESF 296-01 (Integrated General Biology/Chemistry II Laboratory, instructed by Dr. Neal Abrams and Dr. Gregory McGee), FCH 152 (General Chemistry II Lecture, instructed by Dr. Kelley Donaghy) and EFB 103 (General Biology II Lecture, instructed by Dr. Christopher Whipps). This 1-credit seminar is meant to complement the co-requisite laboratory and lecture courses, and provide you with an opportunity to process and draw connections between the various course materials and skills.

More specifically, the course is designed to emphasize the integration between chemistry and biology, and help you continue developing and honing your science communication skills. Throughout the semester, we will provide regular opportunities to debrief about the lab experiments and concepts, and discuss the connections between chemistry and biology content and techniques; to synthesize what you are learning through “writing to learn” activities intended to work as catalysts in developing new understandings of the lab and lecture course material; to observe demonstrations of interdepartmental science and engage with panels of scientists and faculty members from across the disciplines; and to learn and practice new genres of scientific communication (namely, the poster presentation).

Course Objectives

Students who successfully complete the course will demonstrate the ability to:

- Explain concepts, processes, and techniques at the interface of chemistry and biology.
- Effectively communicate their knowledge and findings to scientific and non-scientific audiences.
- Prepare and deliver a poster presentation.
Science, then, is not like the onion in the often used analogy of stripping away layer after layer to get at some core, central, fundamental truth. Rather it’s like the magic well: no matter how many buckets of water you remove, there’s always another one to be had. Or even better, it’s like the widening ripples on the surface of a pond, the ever larger circumference in touch with more and more of what’s outside the circle, the unknown. This growing forefront is where science occurs.”

~Stuart Firestein, Ignorance: How it Drives Science (2012, p. 28-29, Oxford P.)
## Course Policies

### On Attendance

Because the efficacy of this course relies heavily on in-class discussion, punctuality, regular attendance, productive class behavior, and energetic participation will positively affect your grade. Likewise, absences, disruptive behavior, or a lack of participation will negatively affect grade. Attendance is mandatory, and—because this course meets only once a week—two or more absences will result in a failure in the course. We don’t anticipate any of you will be in that position, however, so let’s all agree to do the work, come to class, learn a lot, and make the course a meaningful experience.

In the case of a medical emergency, you may provide a note or receipt of your doctor’s visit as documentation to excuse your absence. If you experience an extended illness or a family emergency that causes your absence from all of your classes, you should be in touch with the Office of Student Life to assist you in contacting all of your instructors. If you know you are going to miss class or an assignment deadline because of a religious holiday, please contact your instructors 2 days in advance so we can discuss any needed accommodations.

### On Academic Integrity

SUNY ESF’s Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about expectations with regard to proper citation of sources in written work. Serious sanctions can result from academic dishonesty. Further details are available here: [http://www.esf.edu/students/handbook/integrity.pdf](http://www.esf.edu/students/handbook/integrity.pdf).

**Our addition:** Anytime one borrows the words or ideas of others, the borrowed material must be properly acknowledged or documented. Failure to do so constitutes plagiarism, a form of academic dishonesty. In this course, you will be expected to use APA documentation for your coursework. Your Fall 2012 common reader and the Purdue Online Writing Lab (<http://owl.english.purdue.edu/owl/section/2/10/>) include guides for APA documentation, so you may want to visit these resources as you prepare your assignments. Please note that the university’s academic integrity policy extends to any work you submit or bring to class throughout the semester, regardless of the point value for that assignment.

### On Accommodations

Students wishing to utilize academic accommodations due to a diagnosed disability of any kind must present an Academic Accommodations Authorization Letter generated by Syracuse University’s Office of Disability Services. If you currently have an Authorization Letter, please present this to me as soon as possible so that I may assist with the establishment of your accommodations. Students who do not have a current Academic Accommodations Authorization Letter from Syracuse University’s Office of Disability Services cannot receive accommodations. If you do not currently have an Authorization Letter and feel you are eligible for accommodations, please contact Heather Rice in the Office of Counseling and Disabilities Services, 110 Bray Hall, (315) 470-6660 or counseling@esf.edu as soon as possible.

The Writing Resource Center (WRC) is now located in 13 Moon Library. Experienced writing tutors are available to work with you in 30- to 50-minute one-on-one sessions during all stages of your writing and for a range of projects, from lab reports to research essays. Drop-ins are allowed if tutors are available, but time slots fill quickly, especially during peak times in the semester, so we recommend you sign up in advance through the WRC’s online appointment system: [http://esfWRC.appointy.com](http://esfWRC.appointy.com). Evening hours in Centennial Hall will be announced by the third week of classes on the student listserv. This is a free resource for all students.

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### Civility

Please be respectful at all times towards your classmates and instructors. We’re sure you know that this means to treat others as you wish to be treated, and to behave as you would have others around you behave. There are a couple corollaries to this general rule: 1.) Please turn off or silence your cell phones during class meetings, and 2.) Write courteous and grammatically correct email messages. You can well imagine that a courteous e-mail inquiry will most likely elicit a prompt reply. Your instructors will reserve the right to request a rewrite before writing a reply.
COURSE MEETINGS AND HOMEWORK:

WEEK ONE  
Jan. 17  
Debriefing from last semester: In writing and through class discussion, we’ll reflect on the connections you observed between ESF 296 and EWP 190 last fall.

WEEK TWO  
Jan. 24  
Exploring and explaining lipids and sugars.  
Homework (due 1/31): 1. Read the excerpt from Addy Pross’s *What is Life?* (posted on Bb). 2. Research the assigned molecules, and bring your notes and sources to class.

WEEK THREE  
Jan. 31  
Panel Discussion: Perspectives on Molecules. (Panelists TBA).  
Homework (due 2/7): In pairs, research best apps for education and the sciences, and then make a recommendation for one app for our mutual use in the course. Write 500-word review of the app that includes a description of the app, an overview of its strengths and limitations, a brief comparison to other similar apps on the market, and a synthesis of the reviews posted by other users (directing referencing and citing their comments).

WEEK FOUR  
Feb. 7  
Informal presentation of educational app reviews. Discussion of panelists and Pross’s *What is Life?*.  
Homework (due 2/14): Read the sample lab reports posted Blackboard, and comment on the strengths and weaknesses of each section and the quality of the writing.

Feb 8.  
Drop deadline

WEEK FIVE  
Feb. 14  
Calibrated Peer Review of sample biology lab reports. Introduction to the children’s book assignment.  

WEEK SIX  
Feb. 21  
Panel Discussion: Interfacial Science.  

WEEK SEVEN  
Feb. 28  
Presentation of children’s books.  
Homework (due 3/7): Post to the SYNAPSE Facebook page by next Thursday, if you haven’t already!

WEEK EIGHT  
March 7  
Laboratory content debriefing.  
Homework (for 3/21): If you haven’t been keeping up with the Facebook page, take some time to read your peers’ posts over the break.

WEEK NINE  
March 14  
**NO CLASS—SPRING BREAK**

WEEK TEN  
March 19  
Last day to withdraw without penalty

March 21  
Discussion and response to the Facebook posts.  
Homework (for 3/28): If you didn’t finish it in class, complete your public comment.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td><strong>Week Eleven</strong></td>
<td>March 28</td>
<td>Communicating Science to the Public. Homework (for 4/4): Poster presentation reading (on Bb).</td>
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<td><strong>Week Twelve</strong></td>
<td>April 4</td>
<td>Introduction to conventions for designing and presenting posters, followed by an in-class critiques of sample posters. Homework (for 4/11): Spend some time at the Spotlight on Research Session. Write a 300-word review of one strong research project/presentation and a 300-word critique of a weak research project/presentation. For each, describe the project (hypothesis, methods, data, and conclusions) and analyze the manner of presentation (both oral and visual). Take photographs of the posters to include as addenda with your reviews.</td>
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<tr>
<td><strong>Week Thirteen</strong></td>
<td>April 11</td>
<td>Discussion of Spotlight on Research presentations and reviews. Hands-on poster design. Homework (for 4/18): Design poster and outline presentation.</td>
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<td><strong>Week Fourteen</strong></td>
<td>April 18</td>
<td>Oral/Poster presentation run-through with formative feedback from instructors. (Meet with Professors Abrams, McGee and Hogan at your appointed time.) Homework (for 4/25): Remember to post a second time to the Facebook group page, if you haven’t already.</td>
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<td>April 19</td>
<td>Last day to withdraw with penalty</td>
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<td><strong>Week Fifteen</strong></td>
<td>April 25</td>
<td>Oral/Poster Presentations (with guest reviewers and visitors).</td>
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<td><strong>Week Sixteen</strong></td>
<td>Tues, April 30 <strong>(in lab)</strong></td>
<td>Reflection and Celebration.</td>
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