

Protein Portraits

The aesthetic alchemy of life

Syllabus 2016

Protein Portraits BB407H: What is a protein?

What the student can expect to learn:

We will take up the question of *What is a protein?* through three main activities.

- Answers from the world of science. Our *first activity* will be to approach the above question from a scientific standpoint. We will tour the chemistry and structure of proteins, guiding ourselves through the meanings and definitions of science by referring to the wealth of graphical illustrations that scientists commonly use to depict protein molecules. We will frequently turn to the Protein Data Bank and the associated Molecule of the Month for examples of such illustrations. We will also be guided by two wonderfully illustrated science books, The Machinery of Life by David Goodsell and Introduction to Protein Structure by Branden and Tooze
- Answers from the world of art. The *second activity* will be to approach the above question using our artistic instincts. We will bring into discussion any and all forms of the arts as potentially suitable means to portray protein molecules. We will critique existing examples from the small but growing genre of protein-inspired artwork. We will share ideas and float trial balloons to carry ourselves to new levels of scientific-artistic inspiration.
- Your own answer. In the *third activity* each student will choose a protein molecule as a subject for artistic portrayal. Your artwork will convey meaning and so in that sense will serve as a personal answer to the question of *What is a protein?* Conceptual features of all kinds may be highlighted in your artwork, including structural or functional features, or evolutionary, historical and societal features. Proteins fit into the human condition in many assorted ways, any of which can be the ground for meaningful art.

What is expected of the student:

- Classroom participation is number one. The best kind of participation stimulates discussion across the whole classroom. If you are not talking, you are not participating. But if you are the only one talking, you are not promoting discussion and need to work on your listening skills! At minimum you should supply a comment or question each day of the class. Jump in!
- Progress reports. We will set various deadlines for our art projects, and you are expected to describe your progress. Willingness to share personal progress at all stages will lend a team atmosphere to the course. That is what we are after.
- Design deadlines will include a) choosing a protein and offering a preliminary design review of

your personal project by week four or five, and b) a final design review by week seven or eight. And then *your course grade will hinge* on meeting the final deadline, which is c) the completion of your artwork by week ten for a public showing.

- A caption for your artwork. A brief, neatly printed title and description of your artwork is expected to accompany the work in our public display. We will choose a style of captioning (a stylistic theme) that applies to all of our displayed works so that our show will have professional panache. Polish counts!
- Attendance. 100% classroom attendance is expected (aside from excused absences). Please realize that your absences detrimentally affect the whole class, not simply you alone. The easiest way to lower your letter grade is to miss class!

When/where we meet

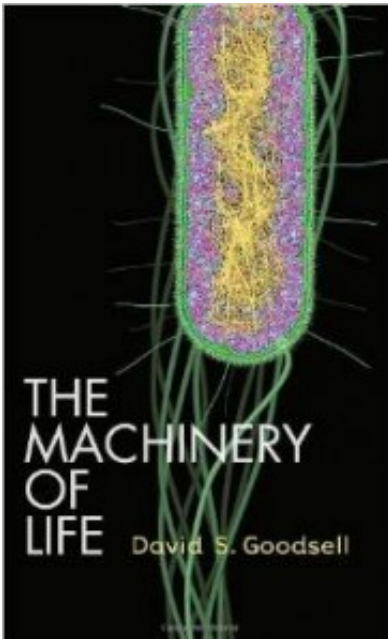
LINC 360 MW 11-11:50

Grading

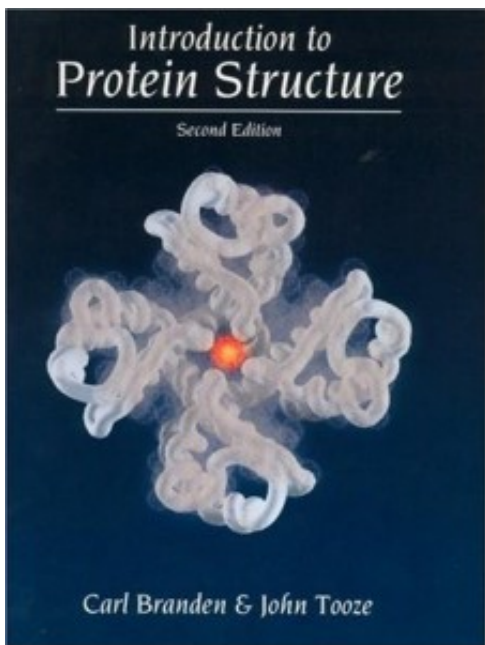
If a student comes to class, participates in our discussions, and meets each course deadline including the final deadline of producing a protein portrait artwork, that effort will be a sufficiently strong performance to merit the receipt of an A letter grade in this 2-credit colloquium course.

Learning resources

- We will make heavy use of the [Protein Data Bank](#).
- The optional textbook (for your purchase) is The Machinery of Life by David Goodsell (2nd edition, 2009).



- Another optional book is Introduction to Protein Structure by Branden and Tooze (Second edition; 1999; ISBN 0815323050; about \$70.) If you find a used copy, grab it! This is a great book.



- I am also happy to lend you a biochemistry textbook if that will help.

Cost of materials

Art materials will probably cost you around \$10- \$20 (glue, tape, wire, other cheap materials). Let's hold down the cost. Try to use the stuff you find lying around in the back of your closet. Save money.

Phil McFadden

Phil McFadden

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- [Syllabus 2016](#)
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- [Week 2](#)
- [Protein Portraits 2014](#)
- [Protein Portraits 2012](#)
- [Protein Portraits 2011](#)
- [Protein Portraits 2010](#)
- [Instructions for student posts](#)

• Student posts

- [Student posts](#)
- [2016 posts](#)

• Protein artists

- [2010 Protein Portraits in the news](#)
- [Bathsheba Grossman](#)
- [Byron Rubin](#)
- [David Goodsell](#)
- [Irving Geis](#)
- [Jane Richardson](#)
- [Jenny Langley](#)
- [Jiang Li](#)
- [Julian Voss-Andreae](#)
- [L2Molecule \(Yan Liang\)](#)
- [Mara Haseltine](#)
- [Mike Tyka](#)
- [Protein art by May_k](#)
- [Scripps Shows](#)
- [Steve Miller](#)

• Protein science

- [David Goodsell's Molecule of the Month](#)
- [Domain classification: CATH](#)
- [Domain classification: SCOP](#)
- [Foldit](#)
- [Jane Richardson modeling](#)
- [Protein Spotlight \(SIB\)](#)
- [Search the protein databank](#)

• Studio tricks and materials

- [3D Molecular Designs](#)
- [CPK models](#)
- [GFP paper model](#)

• Archives

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