


May 20th, 1:30 PM - 2:30 PM

Bringing Online Peer Review into Blended Teaching

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Susan White is a professor of chemistry at Bryn Mawr College. Her research focuses on how the irregular structural features in RNA molecules contribute to their thermodynamic stability and function as sites for protein recognition, and has been supported by the NIH, NSF and the Mellon Foundation. She received her BA from Dartmouth College, her PhD from The Johns Hopkins University. Before joined the Bryn Mawr faculty she held a postdoctoral position Yale University. She also taught science for several years as a Peace Corps volunteer in Togo, West Africa.

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Peer Review in Teaching

- Motivations
- Two classes (Jrs & Srs—mostly chemists)
- Technical Details & Moodle Madness

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Biochemistry Learning Goals

- **Learn to speak, read, and write the language of biochemistry.**
- Comfortably use bioinformatics and visualization computational tools.
- Deepen understanding of concepts from General and Organic Chemistry.
- Understand and appreciate different levels of chemical structure in macromolecules.
- Understand the difference between covalent and intermolecular forces.
- Be able to carry out a variety of biochemical calculations.
- Understand the role of evolution and mutation in biochemistry.
- Be able to use energetic and thermodynamic concepts.
- Understand chemical reactions and regulation in key biochemical pathways.
- Appreciate how drugs and poisons work and how drugs are designed.
- **Better evaluate health issues and nutritional and consumer products.**
- **Appreciate current research questions and experimental approaches in biochemistry.**

Inspiration—Coursera Affordable Care Act

- Interesting, complicated questions
- Rubric provided/
sample answers
- Best part—reading other answers (at least 4, more suggested)
- Writing quality was always assessed
- Rubrics/answers often too simple
- Peer reviewers refused to deduct points.
- Failure to close loop—no in-class feedback on misconceptions etc.

Adv'd Biochem. Assignments

- HIV context—read and analyze/react/synthesize
- Divide up Videos & Science articles
- Each student writes 1 summary/analysis
- Assesses 3—Low, but not 0 stakes.
- Simple Rubric
 - Summary OK?
 - Analysis OK?
 - Writing OK?



July 13, 2012



HHMI, 2007

Student Assessment of Peer Assessment

- Welcome change.
- Nice to read what classmates say. Provides new angle.
- Reading peer summaries saved time.
- Nice to receive peer feedback.
- Helps me see different points of view.
- Assessments need more detail. More feedback.
- Not useful due to grade implications. Would have been better without points. I don't want to take points from students.
- Hard to be objective.
- Can it be anonymous?
- Hard to assess writing.
- Require a comment.

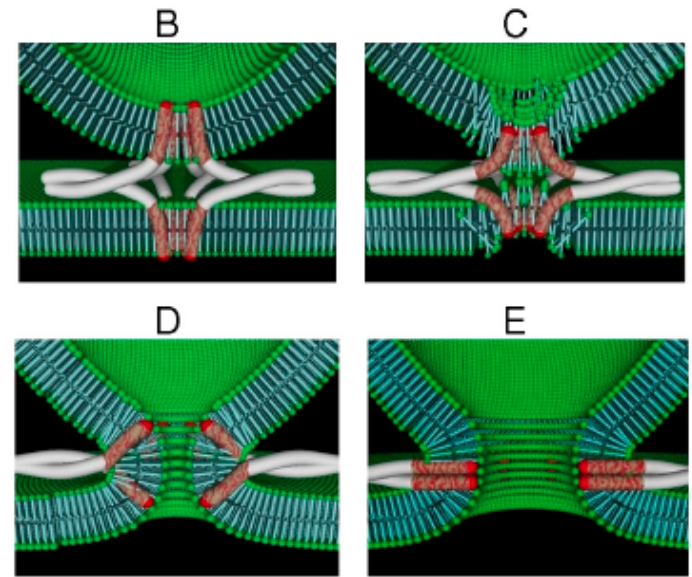
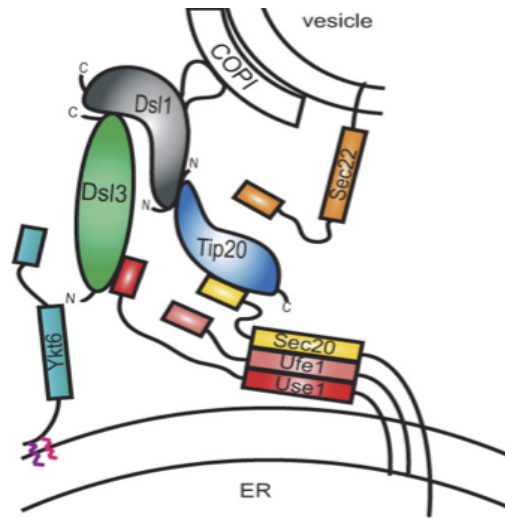
Fixing Issues

- **Are students graded on assessment quality?**
 - No, set comparison of assessments to **VERY LAX**
- **Can assessments be anonymous?**
 - Select **Hide Student Names**
- **Can Assessor comment be required?**
 - Not really

Link textbook topic to current research? (and explain it to peers)

Lecture Topic	Projects
Amino Acids and Proteins	Prions/folding
Protein Seq, DNA, RNA	Exons/domains
Bioinformatics	Evolution/Neanderthal
Myoglobin and Hemoglobin	Hb mutation ex
Enzymes	Catalytic Antibodies
Catalysis & Regulation	Myosin/Hemophilia
Carbohydrates	Influenza Entry
Spring Break!	
Lipids and Membranes	Snare/Fusion
Channels & Pumps	Aquaporin/LQTS/hERG
Signal Transduction	Cholera/Whooping

Project Calendar



March 19-26 Sign up for project and teammate--5 Pts

March 26-April 2 Proposals due on Moodle 5 Pts [Prof. Comments/grade](#)

April 16 Drafts of papers are due on Moodle 5 Pts

April 17-22 Each student "peer reviews" 3 papers on Moodle 10 Pts

April 30 Final Papers are due 65 Pts

Class Presentations April 18 & April 25 10 Pts

Peer Review 1

Question 1: Does the first paragraph explain the biochemical problem to be addressed with appropriate background using textbook level concepts?

Weight: 1.00

Grade: **Good** **Poor**

Feedback: The introduction and first paragraph are well written and do a nice job of prefacing the issue you plan to discuss in the paper. I do think that maybe you could provide a bit more background information on hemoglobin initially and then move into your discussion about Hemoglobin A1c. Also, this may just be a personal preference but I am not sure the questions in the introductory paragraph are appropriate, I feel as though there may be a better way to get those points across not in question form. Lastly, it may be beneficial to briefly describe the key points of diabetes just so readers are guaranteed to have a basic understanding and how it is related to glucose levels in the blood/glycosylated hemoglobin.

Peer Review 2 & 3

2: Is the purpose of the research done in the articles clearly explained and related to the first paragraph?

Weight: 1

le: **Good** **Poor**

k: I'm a little confused on which article is the article you are focusing on as there are numerous referenced and spoken about. I think it is the Ohio State article that is your focus so I wonder if it may be beneficial to just reference the other studies you found and not talk about them in depth. I do think you do a nice job of relating to your initial discussion of hemoglobin.

3: Are figures, data, and experimental results well-explained?

Weight: 1

le: **Good** **Poor**

k: The figures do a nice job of providing data about the participants in the different tertiles. (Do figures from the article need to be cited? I'm not sure)

Peer Review 4 & 5

4: Is the writing clear, well-organized, and free of extraneous jargon?

Weight: 1.00

Grade: **Good** **Poor**

Feedback: The paper flows nicely and transitions well from paragraph to paragraph. However, in a more detailed sense, I feel as though many terms are introduced but not necessarily thoroughly explained such as Metabolic Syndrome in paragraph 4. Another example is diabetes mellitus in paragraph 3 which assumes readers know what type of diabetes that is. I feel as though this happens often throughout the paper so maybe considering revisiting terms and make sure they are explained.

5: Are the references correctly formatted primary biochemistry articles? (excluding the textbook)?

Weight: 1.00

Grade: **Good** **Poor**

Student Comments



Classroom Salon??

- Like learning about other, real world topics
- Learned from peer review (even if I didn't agree)
- Peer review helpful in writing final paper
- Good to get feedback from those less familiar
- Forced teamwork with partner

80%

- Do hardcopy peer review so we can annotate
- Didn't learn from peer review
- Need to require comments, more in depth, maybe just 1 peer review
- Prof. feedback needed
- Some comments not helpful

20%

Lessons learned

- Students can write respectful, helpful comments 😊
- Students do enjoy and learn from sharing independent projects 😊
- Comments and “scores” often not correlated 😞
- Despite peer reviews, same flaws show up in final paper. 😞
- Need to work on calendar to allow “closing the loop” time. 😞
- Simple grading rubric helps me grade efficiently. 😊

Grade for Assessments: 10 ?

Grade for Submission: 10 ?

Grading Strategy: Accumulative ?

Number of Comments, Assessment Elements, Grade Bands, Criterion Statements or Categories in a Rubric: 5 ?

Number of Attachments expected on Submissions: 1 ?

Allow Resubmissions: No ?

Number of Assessments of Examples from Teacher: 0 ?

Comparison of Assessments: Lax ?

Number of Assessments of Student Submissions: 3 ?

Weight for Teacher Assessments: 0 ?

Over Allocation: 2 ?

Self Assessment: No ?

Assessments must be agreed: No ?

Hide Grades before Agreement: Yes ?

League Table of Submitted Work: 0 ?

Hide Names from Students: Yes ?

Setting Up Moodle Workshop

(read the ? and ask for help)

Moodle Madness--Workshop Activity

/ Surname ↓	Assessments	Assmnt Grade	Submission Title	Date	Teacher Assessment	Peer Assessments	Sbmsn Grade	Total Grade
	{9 (10)} {9 (10)} {10 (9)}	9.7	The Use of Gene Therapy in the Treatment of Hemophilia B 📎 ✖	15/04/13 22:50	Assess	{10 (10)}	10.0	19.7
mann	{10 (10)} {8 (8)} {10 (-)}	9.4	Chloe Baumann: SNARES 📎 ✖	17/04/13 10:18	Assess	{9 (10)} {9}	9.0	18.4
ison	{6 (5)} {8 (6)} {8 (8)}	6.4	Jemma Benson and Stephanie Kahn rough draft 📎 ✖	16/04/13 00:56	Assess	{9 (8)} {7 (10)} {6}	7.3	13.7
en	{7 (8)} {8 (10)} {8 (8)}	8.9	Tianmin Chen's Paper 📎 ✖	16/04/13 20:04	Assess	{8 (10)} {6 (10)}	7.0	15.9
	{6 (10)} {8 (10)} {8 (10)}	10.0	A Proposed Mechanism for Fusion by the SNARE Complex 📎 ✖	16/04/13 22:58	Assess	{9 (10)} {9 (10)} {7 (8)}	8.3	18.3
	{9 (8)} {9 (10)}	9.2	Hemophilia by Maria Nam and Linda Cho 📎 ✖	16/04/13 14:29	Assess	{10 (9)} {9 (10)}	9.3	18.5

Moodle Workshop Madness

Start of submissions: 7 April 2013 - 16 05 ?

Start of assessments: 17 April 2013 - 00 05 ?

End of submissions: 18 April 2013 - 08 05 ?

End of assessments: 22 April 2013 - 23 05 ?

Release Teacher Grades: 30 May 2013 - 16 05 ?

Group mode: Visible groups ?

Grouping: Peer Reviewers



- 1) Avoid Submission / Assessment Overlap
- 2) Group Mode Tricky & Student View Not Helpful
- 3) No manual over-ride in assigning assessments