

CHEM-342 INTRODUCTION TO BIOCHEMISTRY
FINAL COURSE EVALUATION
Friday May 16, 2003

Instructions: Please answer the following questions honestly and thoughtfully. Return the completed evaluation to 116 Brown Laboratory **no later than 4:00 PM Monday, May 19. Make sure** you check-off your name on the course roster there. For Question 41 of this evaluation, you will need to reread the course syllabus.

1. Consider the following items and rate them with respect to how important they are for success in CHEM-342.

Category	ex.imp	v.imp	res.imp	sl.imp	not.imp	N	Avg	S.D.	Q#2
a. Personal Initiative	21	11	1	0	0	33	1.394	0.547	12
b. Library Research Skills	14	12	6	1	0	33	1.818	0.833	15
c. Taking Notes in Class	6	7	12	6	2	33	2.727	1.135	0
d. Writing Skills	4	16	10	3	0	33	2.364	0.810	6
e. Collab. with Classmates	19	10	3	0	0	32	1.500	0.661	21
f. Oral Communication Skills	11	13	8	1	0	33	1.970	0.834	12
g. Prior Knowledge	7	10	7	9	0	33	2.545	1.103	9
h. Memorization	0	4	7	15	7	33	3.758	0.922	0
i. Learning New Info.	23	8	2	0	0	33	1.364	0.594	7
j. Problem-Solving Skills	21	10	2	0	0	33	1.424	0.605	18
k. Conceptualization	19	10	4	0	0	33	1.545	0.700	12
l. Attendance	23	6	4	0	0	33	1.424	0.698	11

2. Reconsider the items *a* through *l* in relation to other science courses you have had. Circle those items which, in your experience, are more important in CHEM-342 than in those other courses. (Circle as many as are appropriate.)
 [Results tabulated in last column in the above table.]

3. On average, I spent ___ hours a week on work related to CHEM-342.

5.67 ± 2.06 Hours with a range from 1.5 to 10 hours per week.

For statements 4 through 37, put a check in the box that best reflects how strongly you agree or disagree with each.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	N	Avg	S.D.
4 Good idea form new groups after midterm?	3	6	7	12	5	33	3.303	1.193
5 Demonstrations helped my understanding of articles	6	19	4	3	0	32	2.125	0.820
6 Peer Eval worthwhile activity	2	15	12	1	3	33	2.636	0.979
7 My group have done fine without tutor	0	0	3	20	10	33	4.212	0.591
8 Instead of Group work, Dr. White should lecture more	6	8	6	10	3	33	2.879	1.273
9 I think C342 exams should focus more on content	5	12	8	8	0	33	2.576	1.016
10 My assignments were graded & returned promptly	27	6	0	0	0	33	1.182	0.386
11 Considerable amt of C342 material was review for me	5	7	3	17	1	33	3.061	1.205
12 It was bad idea to change tutors after Spring Break	4	3	2	15	8	32	3.625	1.293
13 Concept map not group effort	2	4	1	16	10	33	3.848	1.158
14 Grades in C342 should be solely on indiv performance	2	4	11	11	5	33	3.394	1.071
15 Talked freq about class topics with others outside class	1	14	11	5	2	33	2.788	0.946
16 I feel I can apply general principles here to other courses	7	19	5	0	2	33	2.121	0.946
17 I found the hemoglobinopathy assign worthwhile	9	13	8	2	1	33	2.182	0.999
18 My ability to find, read, & analyze info improved	10	16	4	2	1	33	2.030	0.969
19 I feel confident I can read & understand research articles	6	22	3	2	0	33	2.030	0.717
20 I am comfortable working in groups	13	15	1	3	1	33	1.909	1.026
21 I am comfortable sharing information	12	19	0	1	1	33	1.788	0.844
22 I am comfortable asking help from others	8	17	6	1	1	33	2.091	0.900
23 I am comfortable relying on information from others	4	20	6	3	0	33	2.242	0.780
24 Given opportunity, like another course designed like this	5	12	5	6	5	33	2.818	1.313
25 Disc. of mystery molecules made connections other chem	6	15	8	3	1	33	2.333	0.974
26 I found the course web-site a useful resource	15	13	3	1	1	33	1.788	0.946
27 I found the quotations on board thought provoking	7	20	4	2	0	33	2.030	0.758
28 I enjoyed working in jigsaw groups	6	16	4	5	2	33	2.424	1.129

Statement	1. Excellent	2	3	4	5 Very Poor	N	Ave	SD
29 Rate this class, overall	13	13	5	1	1	33	1.909	0.965
30 Rate this instructor, overall	17	15	1	0	0	33	1.515	0.557

Rate each of the articles you studied with respect to its overall contribution to your learning and the goals of the course.

	ex.imp	v.imp	res.imp	sl.imp	not.imp	N	Ave	S.D.
31 Stokes (1864)	10	13	9	1	0	33	2.030	0.834
32 Zinoffsky (1886)	7	8	13	5	0	33	2.485	0.988
33a Conant (1923)/Pauling & Coryell (1936)	2	13	9	4	1	29	2.621	0.925
33b Svedberg & Fahraeus (1926)/Adair (1925)	3	8	14	6	0	31	2.742	0.879
33c Diggs et al (1933)/ Herrick (1910)	3	11	9	4	2	29	2.690	1.054
33d Bohr et al (1904)/ Peters (1912)/ Douglas et al (1912)	5	14	8	1	1	29	2.276	0.906
34 Pauling et al (1949)	21	11	1	0	0	33	1.394	0.547
35 Ingram (1958/1959)	15	17	1	0	0	33	1.576	0.552
36 Allison (1954)	10	16	6	1	0	33	1.939	0.776
37 Shemin and Rittenberg (1946)	4	11	11	6	1	33	2.667	1.005

Narrative Responses.

38. In an informative sentence or two, describe or characterize CHEM-342 to someone who might consider taking the course, e.g What is the essence of this course?

- A. To teach yourself how to read, review articles, so that you may delve into their details.
- B. CHEM-342 is about working in a group with others to facilitate understanding and learning of all involved. By recognizing what you don't know, you can determine what you must learn to understand it and how others can help you gain that knowledge.
- C. A historical based course that emphasizes problem-solving over content; can be tedious at times (its at 8:00 AM!, but overall useful.
- D. CHEM-342 is a class that teaches you how to think like a biochemist. It helps you to realize how problems are resolved and how to go about resolving them.
- E. CHEM-342 is a group learning course where much emphasis is given to information that is not learned yet but is assumed you already know and have full understanding of. It deals basically with the structure, function, and mutations of hemoglobin, particularly the mutation leading to sickle cell anemia.
- F. This course takes every skill you ever acquired and meshes them together with some biochemical principles. Just because you have to take this course, you want to take it and do well.
- G. The essence is that you have to be able to work with your group, & be prepared for every class, ready to answer the questions that you were assigned in your group. When any one person doesn't do his/her part, the whole group gets left behind.
- H. C-342 emphasizes recognizing personal questions & learning issues relevant to a particular topic/article & resolving these issues from further researching the topics.
- I. This course is the epitome of conceptualization, not memorization.
- J. CHEM 342 will help your experience to learn more information grow by 10 fold. There is plenty of interesting topics and researching the answers exposes you to more things to learn about.
- K. Through articles of hemoglobin, the fundamental aspects of biochemistry are introduced.
- L. A group that works together, succeeds together.
- M. This class is used to introduce founding concepts in biochemistry as well as provoke stronger ways of thinking and understanding
- N. This course tests your social skills through group work, your academic skills through test taking, your writing skills through papers, and your discipline entirely.
- O. Make sure you read the articles thoroughly before coming to class. It is very important to know and research additional information. The essence of the course is understanding and learning to analyze articles.

- P. CHEM 342 is a class where you actually have use the information learned in other classes and combine it to solve other problems that arise. It's a group-based learning class which helps you not to be afraid to ask questions and in turn learn a lot more.
- Q. In CHEM 342, it is important to thoroughly understand what is being done and more importantly, why, in each of the articles that you read.
- R. CHEM-342 is a very time-consuming but rewarding class. It will prepare you to go further in biochemistry, but the lessons in group cooperation and problem-solving are invaluable. You get out of the class exactly what you put into it.
- S. It is early but gives good group experience.
- T. In this class (CHEM 342) you have to find what you don't know & what you don't understand and you have to try to find the answers from other sources. (e.g. Internet, Textbooks)
- U. This is a stereotypical class in which students are forced to work in groups that don't accomplish much. There will always be one group member who receives a free ride.
- V. Dissection and understanding of scientific articles, applied specifically to hemoglobin.
- W. This course puts you more on your own with minimal input from the instructor. It also utilizes much more group work than any class you will ever take
- X. You have the ability to decide how much or how little you learn. To learn how to communicate and solve problems within a group
- Y. In this course you will learn how to ask the right questions and apply what you do know to figure out what you don't know, and why it's important that you seek answers.
- Z. There is a lot of individual work involved and the professor does not lecture at all. The tutors can be very helpful but you have to be able to make connections between chem/biology courses and the articles, as well as trust your group members.
- AA. CHEM 342 is a problem based learning course which emphasizes questions and learning while studying the history of biochemistry.
- BB. CHEM 342 is a course to prepare biochem majors for graduate level biochem class. The class gets the students to think more of ways biomolecules can come together.
- CC. The essence is hemoglobin & sickle cell anemia.
- DD. CHEM 342 teaches you to think through problems and understand concepts across several disciplines. When finished w/ CHEM 342 you will feel confident in reading scientific journals
- EE. A problem solving course based on understanding the history of biochemistry & how we came to our current understandings.
- FF. CHEM 342 is an introduction to biochemistry that uses self-discovery to introduce major biochemical topics. It begins to tie together the basic classes, e.g. physics, chemistry, biology, etc.
- GG. It's a problem based learning course. You analyze a new article every so often in the attempt to learn data analysis and research skills.

39. Identify or describe some thing(s) that Professor White does particularly well.

- A. Bringing outside material to the class that pertains to the article at hand.
- B. Dr. White did an excellent job teaching the class by allowing the groups to work amongst themselves to answer learning issues which encouraged understanding and improved the ability of group members to work with others and gain interpersonal skills. His demonstrations, class discussions, and lists of learning issues served to "tie up" any loose ends, emphasizing important concepts and answering unanswered learning issues.
- C. You choose great tutors. I suspect you have a very clever creative mind. You can make this work, and influence others to do the same.
- D. As a dedicated teacher, he always has the concern of helping students. I found his comments, on our assignments, very useful.
- E. Prof. White does an excellent job of teaching conceptually with the use of graphs and models. I also thought the list of learning issues is helpful as well (the list that is handed out after our initial group discussion of articles.)

- F. Pretty much knows everything... you just have to ask. You force students to answer their own questions so that they learn and understand the material. Ask good thought-provoking questions.
- G. He is very helpful outside of class & is very good @ Socratic method
- H. grades & returns papers promptly. Speaks well. Prepares the class for the material that will be learned by assigning the articles in a good order
- I. --He encourages the students to reach beyond the scope of the original material studied.
- J. Dr. White does demonstrations & answers questions well. Dr. White has set-up a great classroom library of resources that are available and helpful to all the students
- K. I like that he makes us work or attempt problems. Then we go over it. Even if I get the wrong answer, I have knowledge of this area, and can now understand the right answer. For example, the Stokes experiment, things were not clear to me when writing a procedure and I did get it wrong. But after the demonstration, I had a better understanding of the whole article. I don't think I would of if I wasn't forced to write a paper on it first.
- L. He answers questions well (but forms more questions out of the answers).
- M.
 - forces groups to dig for answers
 - stresses understanding
 - initiates good discussions
- N. Utilizes the board to illustrate examples
- O. --He is a good teacher. Explains concepts clearly.
--He is good at doing his demonstrations. .
- P. I think he asks questions that lead you to ask other questions which answer his initial question. He is also good at explaining the learning issue questions that weren't answered w/in the group.
- Q. He explains things very clearly.
- R. Dr. White does an excellent job of preparing the tutors to make sure that the students get what they should out of each article.
- S. Asking questions
- T. Professor White is really good at making students think a couple of times. Whenever I ask some questions, he didn't give a specific answer that I expected, but he gave me the way that I can find the answer
- U. --the demonstrations were interesting
- V. Poses interesting, thought-provoking questions.
- W. He leaves us alone to figure at things for ourselves, but if we have a problem he helps us out by giving us hints and not just telling us the answer
- X. Professor White really encourages you to think and solve problems on your own.
- Y. --Very good at getting graded assignments back promptly with useful comments.
--Very approachable.
--Good at leading students to conclusions based on what they already know.
- Z. Asks questions. He knows how to answer questions we ask with additional questions so that the learning process continues.
- AA. → Presented the material in an interesting way
→ Summed up the articles well.
- BB. --gives help where help is needed.
--puts mystery molecules up that reflect what we are learning in class.
- CC. Professor White relates to the students and gives students confidence—does not put down w/ wrong answers as some teachers do.
- DD. Sometimes I think Dr. White could have provided thought probing questions of general concepts employed in the upcoming article prior to reading the article. By these questions I don't mean the learning issues but more of an expansion on the learning matrix. The concepts in the matrix were sometimes so broad that a narrowing may have proved helpful—and more efficient.
- EE. Demonstrations, resolving the unresolved.

- FF. Professor White is really good at giving you just enough information to make you want to find out what the answer is.
- GG. In the short experience I've had, he lectures very well. He also has seemed to develop quite a knack for delegating.

40. Identify or describe some way(s) that Professor White could improve his teaching (and your learning).

- A. Dr. White when asked questions would sometimes "dance" around it to avoid giving the entire answer.
- B. The only suggestion I would have for Dr. White for improving his teaching would be to encourage more out of class research into more in-depth areas for students seeking deeper understanding of the material.
- C. I don't know much about test creation, theory, etc., but I hated the test and though it did not accurately reflect my learning-somewhat frustrating.
- D. I think some of us were discouraged by the absurd English used in the first two articles. Designing a class to be first 35 minutes PBL and 15 last minutes lecture would have helped. Furthermore, I think urging students to have CHEM-641 book and encourage the use of the book as a primary resource.
- E. Prof. White could improve our learning by letting us know ahead of time which concepts we should be familiar with prior to reading the articles.
- F. Have longer class periods. More one-on-one time.
- G. More lecture type of format would be very useful.
- H. Make sure that all the students understand the major concepts of the articles. Describe & elaborate on the hemoglobinopathy assignment more
- I. [No response]
- J. Add more weight towards final grade on the learning issues. Maybe treat them like weekly quizzes.
- K. Its often hard to know that I have things straight in my head like the quote, of the difference in lightning and lightning bug. I think it would be good to submit a paper for each article to make sure the ideas are right.
- L. Maybe emphasize people to come to his office hours more.
- M.
 - provide more background information about article
 - identify important concepts before discussions
- N. Maybe illustrate main points more clearly instead of assuming everyone understands everything all the time.
- O. He could lecture a little or at least lead us into the right direction when we step into analyzing our articles.
- P. I think he should visit the groups for longer periods of time and lecture just a little bit more sometimes like maybe once a week.
- Q. I don't know if it was the tutor or what, but I don't feel I was adequately prepared for the midterm. I've never really had a class like this before, so what was expected of me I was unsure of. Possibly Dr. White could emphasize the more important directions to take.
- R. [No response]
- S. [No response]
- T. If he gives us review sheet for exams, it will make easier for us to concentrate on what we have to know (study)
- U. This class desperately needs to be turned into a lecture-based class. I do not pay the very high cost of tuition in order for my grade to be based on someone else's performance.
- V. Sometimes can be frustrating when deflecting questions back to group --in many cases, wound up bottlenecked searching for the answer to a superficial question when a quick answer from Dr. White would have permitted much deeper understanding to be reached.
- W. Give a little more direction to our assignments i.e. give out learning issues earlier.
- X. more demonstrations

- Y. I really have no complaints. I feel that this class promotes independent thinking, and I feel everything was done to help the students except all-out lecturing, which would ruin what I feel is the main point of the course.
- Z. I hardly ever saw Dr. White during class—except during the beginning. Most of what I learned in the class came from the articles and other course members.
- AA. →Lecture more, require 10 learning issues per article
- BB. --visit all the groups equally
- CC. Lecture just a little more. Don't be so strict on starting right @ 8am.
- DD. I think Dr. White could have a few more experiments shown/performed prior to articles as it prepares students to attack the upcoming article.
- EE. Tell us what to study for tests
- FF. I don't know how Professor White could improve his teaching of this class mainly because I see it as a very self-paced and self-motivated class.
- GG. He could lecture more.

41. Reread the course syllabus and provide some thoughtful feedback. e.g. Did the syllabus adequately describe the course? Are there aspects of the syllabus that are unclear or misleading that should be revised? What is missing that should be included? Feel free to discuss this question with your classmates.

- A. The syllabus describes the course properly.
- B. The syllabus described the course very well.
- C. The syllabus seems fine. To be honest there is a lot of good info, but I only skimmed it at the beginning.
- D. No comments.
- E. I think there should be a sheet of paper placed before each article, describing concepts that should be understood before reading (i. e. structures and function of Hb). I think it helps to know concepts prior to the articles instead of coming up with learning issues that include these basic concepts.
- F. Syllabus was pretty good, it should maybe be given to students in segments as the semester goes on perhaps.
- G. The class follows the syllabus very well
- H. More info on the syllabus should pertain to the hemoglobinopathy assignment & if it is not equally weighted w/ the other assignments section for grading, that should be stated. ex., assignments 25% hemoglobinopathy 15% vs the all inclusive assignments 30%
- I. I don't think that they syllabus is in anyway misleading. My group did not form the example "roles" in the syllabus, yet we functioned very well.
- J. The syllabus was one of my best resources. I think the only improvement would be to add solutions of the old exams.
- K. I think the syllabus is straight forward. As mentioned before though, I think it would be helpful to submit a paper for each article studied.
- L. i) Yes ii) no iii) need to somehow emphasize the power of working in groups—maybe have a small Icebreaker on the first day of class.
- M. Often vague and too wordy, but vary complete & well organized.
- N. The syllabus was good at describing the course as a whole.
- O. --Yes, the syllabus adequately describes the course.
--No unclear aspects
- P. [No response]
- Q. The syllabus is very thorough and helped a lot throughout the semester.
- R. At the beginning of the course, it was difficult to know where to look at research learning issues. It would probably help a lot to give some instruction on how to adequately use library resources. I think most students got the bulk of their information from the internet which is a great tool, but if the goal is to learn to use the library, then instruction would be valuable.
- S. It did, no,

- T. The course syllabus is well organized. [What is missing] Answer keys to Practice Exams
- U. the syllabus is fine
- V. Syllabus gave good representation of course---you might consider adding a page with links to web sites students have found over course of semester as additional reference material.
- W. After rereading the syllabus, there really isn't anything that is missing from it. I feel it described the course really well
- X. I think the syllabus was in good order and no sections were misleading
- Y. I feel that the syllabus was pretty up front. It warns students about the possible frustration they may feel in the beginning, as well as the point of all of this question asking. I feel it should be conveyed more that attendance is crucial, if not for the instructor, then for the benefit of the group!
- Z. The syllabus very adequately describes the course—important points being that it is problem based learning and discussion in groups and that it can be very frustrating at first. However, it is a bit wordy—we're college students and don't want to take the time to read something real long!
- AA. The syllabus was clear. I especially like the learning matrix.
- BB. The syllabus seems to reflect the course fairly well.
- CC. The syllabus is the best syllabus any U of D professor has given out.
- DD. The syllabus correctly gives an overview of what is to come. I do think that it was overwhelming as it was long, but it was all accurate.
- EE. N/A
- FF. The syllabus does adequately describe the course; there are no misleading aspects that should be revised.
- GG. Learning science was definitely not stressed as much as learning techniques were. At time I felt like I was in an education course.

42. How valuable did you find the visits by each of the visitors?

Dr. Ohene-Frempong:

- A. Dr. Frempong was an excellent choice, his hands on research and experiences helped fill in the picture of sickle cell and therapy for it.
- B. Was not present.
- C. The visitors are a good idea. I loved the question-generated format. I'm not sure exactly what I learned from them, but it certainly makes the course more memorable.
- D. Very informative. His comments on hydroxyurea and the 40:60 ratio in the Pauling article were very useful.
- E. Dr. Frempong's visit was valuable in that he elaborated what we had learned about sickle cell and he more clearly answered our question of the ratios of sickle cell (the 40:60 ratio).
- F. Very interesting to listen to.
- G. The visit was interesting & informative
- H. Gave me an opportunity to understand & see how someone so different from myself approaches & views the world of science not so valuable to specific course material but valuable in dif. Ways
- I. Extremely. His talk was very insightful about hemoglobin.
- J. Enjoyed meeting a Doctor doing excellent work for both the U.S and Africa. His professional and personal experience with sickle cell anemia was excellent.
- K. He was able to shine some light on unclear areas like he 60:40 ratio
- L. I think it was actually valuable to see someone who was doing recent work on sickle cell and who has the sickle cell trait. He was an inspiration to all of us to not let obstacles stop you from going your work.
- M. Interesting: a good break from just reading about sickle-cell. * * * *
- N. Very valuable—he's an inspiration to many
- O. Very valuable. I learned a lot of things from his visit.
- P. Very valuable because I realized I did pick the right major.
- Q. I don't think he was a very interesting speaker, although his life certainly is.
- R. [No response]
- S. They all made these article much clearer.

- T. Very valuable. I could understand more about stem cell anemia
- U. All 3 visits were very informative and they improve the course.
- V. Fairly informative . . . would have liked to hear more about research activities
- W. I really enjoyed his visit & learned a lot from it.
- X. N/A
- Y. I feel that they were all equally a very valuable experiences. Yes, we got to ask them questions one-on-one, but what I got out of it that I think is most important is that despite all of their impressive accomplishments and contributions to science, they're just people, and for some reason, knowing that makes me feel a little less apprehensive about where I'll end up years from now (as long as I work hard!).
- Z. He was a very interesting speaker in that he helped us understand the basics of sickle cell anemia and what is being done today in terms of treatment.
- AA. Very valuable
- BB. It was interesting to learn his views on sickle cell.
- CC. Not valuable @ all
- DD. Dr. Frempong's visit was interesting and brought a real-life perspective to the topics addressed.
- EE. Very interesting
- FF. It was great to see what the current clinical methods are in treating sickle cell anemia, especially from someone who has been personally affected by sickle cell anemia.
- GG. Excellent. Could explain things in simple terms. Knew exactly what was asked, and was honest when he didn't know something.

Dr. Ferrone:

- A. Dr. Ferrone, though very knowledgeable, was participating in research that in ways was over our heads. He did a good job trying to explain, but in some ways it was a lost cause.
- B. Dr. Ferrone provided insight into studying HbS polymerization, but in my opinion did not provide enough additional insights/information.
- C. See comments above for Frempong.
- D. I am not very mathematically inclined but it was great to see that there could be other ways (other than genetic approach) that sickle cell disease can be cured.
- E. Dr. Ferrone's visit was also valuable since we were able to catch a glimpse of how the cure and research for sickle cell can be looked at in a physical way.
- F. Pretty cool; would have liked more time with him.
- G. I did not understand a lot of p. chem. related material he covered but I still learned more interesting stuff.
- H. Enjoyed this speaker. Liked how he utilized the board, but he spoke above my level of understanding a little
- I. I especially enjoyed Dr. Ferrone's talk. Bringing a physics element into the discussion was a valuable experience.
- J. Enjoyed how Dr. Ferrone developed equipment to get better understanding of the physical behavior of proteins.
- K. He was a great speaker. I really didn't understand polymerization but he helped in some ways.
- L. He was very informative & made me feel as if we were friends without the communication. He answered every question to the best of his
- M. His research was complicated but presented well * * * *
- N. Valuable—he's very intelligent
- O. Not as valuable. His research seemed very one-sided
- P. I understood what he was saying but I didn't find him very interesting.
- Q. Wasn't there.
- R. [No response]
- S. They all made these article much clearer.
- T. Valuable but little bit hard to understand
- U. All 3 visits were very informative and they improve the course.

- V. Very informative...was nice to hear from recent research
- W. I found his visit to be very thought provoking & helped me generate learning issues
- X. Valuable.
- Y. I feel that they were all equally a very valuable experiences. Yes, we got to ask them questions one-on-one, but what I got out of it that I think is most important is that despite all of their impressive accomplishments and contributions to science, they're just people, and for some reason, knowing that makes me feel a little less apprehensive about where I'll end up years from now (as long as I work hard!).
- Z. Dr. Ferrone was a good speaker and answered questions well, but it wasn't a topic that specifically interested me.
- AA. Some what valuable
- BB. I didn't really understand what he was talking about.
- CC. N/A
- DD. N/A
- EE. Valuable, very helpful
- FF. It was really interesting to see what current academic research is going on concerning sickle cell, and to realize that a series of accidents could lead us to a career that we really enjoy.
- GG. Too technical. Seemed very uncomfortable in large group. Loosened up at breakfast. Still overall not very enlightening

Dr. Allison:

- A. Dr. Allison was an interesting speaker. His article pertained to our studies, though his talk on malaria did not. He was a nice break from the class focus.
- B. Dr. Allison was a very valuable visitor, offering an opportunity to understand his scientific methods and observations and ask questions about his ethical considerations and other areas of expertise.
- C. See comments above for Frempong
- D. His lecture was great and the breakfast good!!! ☺
- E. I felt that DR. Allison's visit was very valuable from a fan's view point—It was wonderful to meet the person who first discovered the malaria-sickle cell connection.
- F. An absolute treat in so many ways.
- G. The visit was very informative but the most difficult to understand when he talked about other stuff that he did research on (other than sickle cell)
- H. enjoyed this speaker very much. Answered questions on a level suitable for all students. Very valuable
- I. I enjoyed this talk the most. This gave students the opportunity to hear what field research was really like in days of yore.
- J. Meeting such an important person who has lived so many places around the world was a great experience. I enjoyed the question/answer session the most with Dr. Allison
- K. I really liked being able to visit with him because we read one/two of his articles. It was really cool.
- L. It was a privilege & I feel very fortunate to have met someone of such intelligence & curiosity & fame. He was definitely one of the fathers of sickle cell research
- M. It was nice to put a name to a face & actually hear his opinions * * *
- N. didn't attend
- O. Very valuable. I learned many interesting things.
- P. I liked his visit, but unfortunately I took some medicine and couldn't actually focus enough to put together what he was saying
- Q. Very valuable. His place in history I thought was pretty cool and all the people that he worked with.
- R. Dr. Allison's visit was insightful. It is rare that students get to meet the author of an article the study, especially one of such importance. I wish that class could have been longer. I got the feeling that students hesitated to ask questions with long answers because others wouldn't have time to ask their questions.

- S. They all made those articles much clearer.
- T. Great!
- U. [No response]
- V. Research was not particularly informative but visit was made worthwhile on basis of body of knowledge/who he knew/etc.
- W. I got a good background of what that time was like for doing research, which helps me understand articles written at that time
- X. Very valuable. Help to further understand the article
- Y. I feel that they were all equally a very valuable experiences. Yes, we got to ask them questions one-on-one, but what I got out of it that I think is most important is that despite all of their impressive accomplishments and contributions to science, they're just people, and for some reason, knowing that makes me feel a little less apprehensive about where I'll end up years from now (as long as I work hard!).
- Z. The major draw of Dr. Allison was that he had written an article in the reader and was well known. It was exciting to have such an important man in our class.
- AA. Very valuable
- BB. He brought the terms to our level and he was an interesting speaker.
- CC. Pretty informative
- DD. The visit was valuable! Being in the same room with a man of such success and passion is inspiring.
- EE. Once in a life time opportunity
- FF. I found Dr. Allison to be a very inspiring speaker, the fact that he was so down to earth but had made major discoveries and produced major contributions to the medical world. Dr. Allison was also inspiring because of his pure joy to be able to do what he loved!
- GG. Indifferent. Felt by this point what he could offer was already known. The only thing he seemed to be unique in was his experiment and he didn't want to talk about that it seemed.

43. Open Mic. Reflect on the course and identify those aspects that you like or think could be improved. Please suggest ways for improvement.

- A. No response.
- B. No response
- C. I'm concerned with the general lack of interaction with students with the instructor in PBL. Remember there's a reason that you are a biochemist. Did you reproduce this love in me? If you can give me that, you don't have to teach me a thing. I'll get it on my own. You're and awesome instructor. Thanks.
- D. No response.
- E. I liked the group aspect very much since we could organize ideas and help each other out. I strongly think that in the future there should be a list of concepts and prior knowledge that should be given out previous to the reading of article so that students can better prepare for articles.
- F. Perhaps more into other topics besides H**b** and sickle cell but overall a very enjoyable course.
- G. One of the ways to improve the course is to have a bit more lecture type format. Also, the whole group should not be punished if one of the members is not cooperating.
- H. Like Syllabus, demonstrations, guest speakers improve: more demos,
- I. [No response]
- J. Find a time so that the tutors could function more as T.A.'s. A set office hr in the classroom with all the resources available. They could rotate appearances so each student could get help from each tutor during semester.
- K. [No response]
- L. I think the course was good—it gave me the chance to reevaluate my purpose & try to open up more. I've had to be so secluded for so many years, it was beneficial for me to struggle in this class. Hopefully, I will be successful in 641/642
- M. [No response]
- N. I liked the course a lot. It's up to the student to get from the class what he/she makes of it

- O. Spending more time discussing the article with Dr. White. It would be nice to go over the entire article, step by step, instead of only answering remaining learning issues with Dr. White.
- P. I think it the tutors were well prepared for this course and were taught what questions were useful to ask then maybe groups would function a lot better.
- Q. I thought switching tutors was a good idea. I like the fact it wasn't just a lecture for 50 minutes.
- R. I will probably remember more from this course than any other I have taken. One thing that would help students like me would be a later class time. Group PBL kind of forces one to wake up and participate, but I feel that there is nothing to lose and everything to gain by pushing it back especially for a class where attendance, participation, and conceptual understanding are so important. Why not?
- S. [No response]
- T. [No response]
- U. See # 40!
- V. Will follow up w/ detailed email
- W. I really enjoyed how the course was set up & don't think much should be changed. I do think the exams should reflect the course more
- X. I enjoyed working in groups.
- Y. The only issue I had was group members not showing up to class. When everyone was there, class time went reasonably well. I'm not exactly sure how this could be further enforced. . . . It probably really comes down to the individuals dedication to the course or group.
- Z. I strongly disliked the course in the beginning but as I got used to it the course got slightly interesting. Group discussion could get frustrating.
- AA. I liked the individual assignments and some of the group ones. I wish there was a way to measure and enforce more accountability within groups
- BB. I liked working in groups. It let me ask my questions and have other people answer them for me and vice versa.
- CC. Change the time of class!
- DD. The only suggestion I have would be to make the discussion time longer—as you begin to get into deep debate/discussion the time is up.
- EE. [No response]
- FF. Thank you, Dr. White, for a great semester and I hope to see you in the future.
- GG. [No response]