

BIOLOGY 246: COLLOQUIUM IN BIOMEDICAL SCIENCES

SPRING 2009

FRIDAYS from 2:00 p.m. to 2:50 p.m.

GMCS 324

GENERAL CLASS DYNAMICS

Dr. Estralita M. E. Martin
Office: GMCS 321
Office Hours: by appointment
Office Phone: (619) 594-1204
email address: esmartin@sciences.sdsu.edu

Ms. Thelma Chavez
Office: GMCS 322
Office Hours: by appointment
Office Phone: (619) 594-7195
email address: tchavez@sunstroke.sdsu.edu

Course Description: This one unit course is open to all SDSU students, in particular science majors, and community college students in the Bridges to the Future Program. The Colloquium this semester will focus on health disparities issues among specific population groups in the United States and internationally as well as fellowship and research opportunities for students at the National Institutes of Health (NIH) and other institutions with research programs related to health disparities. The course will address factors related to disease disparities, and provide information on unique opportunities for students who might enter research and medical career paths to study health disparities. Research investigators and administrators from the NIH, SDSU and UCSD, and medical and graduate students will present lectures in the above areas.

Learning Objectives: After completing this course, students will:

- 1) meet scientists from different disciplines and build their network
- 2) be able to identify what traits make up a good scientist
- 3) learn from current and former Ph.D. students about their research and their graduate school experiences
- 4) be exposed to current SDSU faculty and student research
- 5) know what health disparities are being researched nationally and internationally

Course Organization: One meeting per week, or as designated by the class schedule. Classes meeting on February 20 and April 17 will be 2 hours long. No classes will meet formally the week following these classes. All students are expected to attend the Student Research Symposium which will be held February 27-28.

Course Requirements: Students taking the course for credit are required to write a research paper. This paper can discuss any one of the scientific presentations made in the colloquium (excluding presentations on fellowship or summer research opportunities) or discuss your individual research project. Because this class is about health disparities all papers must have a connection to health disparities. **Papers are due by 5:00 p.m. at the last meeting of the class (Friday, May 8, 2009).** Turning in papers prior to that date is okay too.

Grading: Your grade will be determined by your paper, your attendance, your evaluations and your participation in class. Each class is worth 5 points (15 x 5 = **75 points total**). Yes, that means attendance will be taken at each class. Each student will submit an evaluation of the presentations given. These evaluations are due one week following the day of the presentation unless the presentations were given by undergraduate students. Then the evaluations are due before you leave class. Each evaluation will be worth 10 points (11 x 10 = **110 points total**). One (1) point will be deducted for each week the evaluation is late. Should you fail to turn in evaluations for undergraduate student presentations on the day of the presentation, you will not receive points for doing them later. You will be asked to rate the overall presentation and the assigned reading, the level of the presentation and the reading, what you thought of the speaker, if the topic was informative, what two things

minimum you learned new from the presentation, did you ask any questions and what question would have asked if given the opportunity. If it is believed that the sincerity of your answers is lacking, points will be deducted from your score. Yes, I know this is subjective. All students are expected to be active participants in the colloquium. Students are expected to have read the week's assignments (when given) and to be prepared to discuss them the following week. One (1) point from attendance will be subtracted if called on to participate in the discussion of the paper and you are unprepared. Finally, your paper is worth **200 points**. A table showing the rubric for this paper can be found in this syllabus.

This makes for a total of 385 points possible. Your grade is based strictly on percentages (see below) using a 355 point scale. This allows you to miss two classes without having to give a reason for your absence. After that documentation will need to be provided before an absence will be approved. Determining legitimacy for absences will be on a case-by-case basis. If your absence is approved, a full one-page summary from an article related to the speaker's presentation and health disparities will be accepted in lieu of the missing evaluation. A copy of the article must also accompany the summary. **THERE ARE NO EXTRA CREDIT POINTS POSSIBLE.**

How many points will be needed to earn each grade is shown in the chart below. Pluses (+'s) and minuses (-'s) will not be given to grades. For students taking the class for credit/no credit, 70% of the points possible must be earned to receive a credit grade.

A = 90-100% or 319-355 points	B = 80-89.99% or 284-318.999 pts	C = 70-79.99% or 248-283.999 pts	D = 60-69.99% or 213-247.999 pts	F = 0-59.99% or < 213 points
--	---	---	---	---

Communication: All students must maintain active email accounts. Although not a course requirement per se, students must get into the habit of checking their email daily. Failure to do so may cause you to miss crucial course information.

Classroom Behavior: We want you to feel relaxed in class, but we expect each of you to be respectful of all guest speakers, your instructors and to each other. We will not tolerate any type of behavior which is disruptive to guest speakers or panelists. No texting or use of cell phones during class will be allowed. This includes leaving class to undertake these activities. Please turn them off or put them on silent while you are in class.

Panel Discussions: This semester we will have two panel discussions on topics relating to the graduate school experience. Students are to come prepared to class with questions, prior to each panel of speakers, in order to maximize the time students can interact with each guest or visiting scientist.

- **Current Graduate Students Panel:** Students currently enrolled in Ph.D. programs in various disciplines will share their experiences and challenges as pre-doctoral students, provide advice to the audience and answer questions.
- **Post-doctoral or Faculty Panel:** SDSU alumni who have completed their Ph.D. in various disciplines will share their experiences as post-doctoral scientists or faculty in academia.

BIOLOGY 246: COLLOQUIUM IN BIOMEDICAL SCIENCES

TENTATIVE SCHEDULE OF PRESENTATIONS

DATE	ACTIVITY	ASSIGNMENTS
January 23	Overview of Syllabus Distribution of journals Collect all student email addresses	
January 30	Health Disparities Write Up and Discussion	Reading assignment for Feb 6 will be given
February 6	Health Disparities General Discussion presented by Sue Lindsay, Ph.D. - SDSU Graduate School of Public Health	Reading assignments for Feb 13 will be given
February 13	Undergraduate Student Research Presentations 1) Gloria Felix 2) Octavio Romo Fewell	1) Evaluations for presentation for Feb.6 due 2) Evaluations for today's presentations due
February 20 (Class will be 2 hours long)	<u>Ph.D. Student Panel</u> 1) Diana Lozano, University of Houston, Electrical Engineering 2) April Weismiller, Stanford, Neuroscience 3) Connie Meza, Univeristy of Washington, Clinical Psychology 4) Danielle Augustin, University of California – Berkeley, Microbiology 5) Eric Vasquez, Columbia University, Physics???? 6) Adriana Villasenor, SDSU/UCSD joint doctoral program, Epidemiology 7) Cesar Contreras, Ph.D. *just completed, University of Central Florida, Chemistry	1) Pass out SRS evaluations 2) Reading assignment for March 6 will be given
February 27-28	Student Research Symposium (SRS), Aztec Center	
March 6	International Health Disparities Discussion #1	1) SRS Write Ups Evaluations from Presentations due 2) Reading assignment for March 13 will be given
March 13	Undergraduate Student Research Presentations 1) Ellesse Akre 2) Irene Hale	1) Reading assignment for March 20 will be given 2) Evaluations for today's presentations for due
March 20	International health Disparities Discussion #2	Reading assignment for March 27 will be given

March 27	Cecilia Larrosa – 3 rd year Ph.D. student at Stanford	Reading assignment for April 10 will be given
April 3	NO CLASS – SPRING BREAK	SPRING BREAK
April 10	Sinead Younge, Ph.D. Assistant Professor, Morehouse College	Evaluations for presentations for March 27 due
April 17 (Class will be 2 hours long)	<u>Completed Ph.D. Panel</u> Gerardo Perez, PhD - Biology, Post doc Victoria Love, PhD - Biology, Industry Norval Hickman, PhD - Post doc, Clinical Psychology Crystal Freeman, PhD - Public Health Sam Waters, PhD - Faculty, Biology Michael Davis, PhD, NIH/NIAID	1) Evaluations for presentations for April 10 due 2) Reading assignment for May 1 will be given
April 24	No formal class	
May 1	Undergraduate Student Research Presentation 1) Matthew San Pedro	1) Evaluations for presentations for April 17 due 2) Evaluations for today's presentations for May 1 due
May 8	Wrap Up	1) Paper due by 4:00 p.m.

RUBRIC FOR FINAL PAPER
IF WRITING ABOUT YOUR RESEARCH PROJECT

<p>TITLE PAGE</p> <p>Title By line Date</p>	<p>8 POINTS TOTAL</p> <p>4 points 2 point 2 point</p>
<p>ABSTRACT – 360 words</p> <p>Introductory Statement Summary of major material and methods (including sample size and statistical approaches) Summary of major results Brief interpretation of results, conclusions</p> <p>This should be self-explanatory without reference to the text.</p>	<p>32 POINTS TOTAL</p> <p>8 points 8 points 8 points 8 points</p>
<p>INTRODUCTION</p> <p>Length 1-2 pages Brief summary of relevant background as relates to health disparities Purpose Support statement with references</p> <p>This should clearly and concisely review the rational for the study and identify what issues were going to be addressed. It should clearly place the report within the area being studied. It should not describe the outcome of the study (in any detail).</p>	<p>28 POINTS TOTAL</p> <p>4 points 8 points 8 points 8 points</p>
<p>MATERIALS AND METHODS</p> <p>Write in past tense Write what you did – description of methods</p> <ol style="list-style-type: none"> a) what were your experimental subjects b) what was your experimental variables (dependent and independent) c) method of collecting data d) what were your controls <p>This section should carefully describe the methods and materials used including sample size and statistical approaches. It should include details for unique experiments and appropriate references for commonly used techniques. The sources of materials should be shown by supplier, but geographical origin is not required.</p>	<p>36 POINTS TOTAL</p> <p>4 points 8 points 8 points 8 points 8 points</p>
<p>RESULTS/DATA</p> <p>Write in the past tense Figures with legends /Tables with titles Text to briefly describe the data -major observations and key trends</p> <p>This section should succinctly state the results without any lengthy discussion or interpretation of individual data. Conclusions presented as declarative headings are not preferred. Extensive conclusions do not belong in the Results section.</p> <p>Where possible data should be presented in graphical rather than tabular format. Small tables may best be incorporated into the text. Tabular data should not repeat that shown in the graphs. Graphs should start the y-axis at 0 or show a clear scale break in those cases where starting at 0 would be difficult. The numerals on graph scales should be sufficiently large and clear enough and spaced to allow the data to be interpreted and the nature of the scale, e.g. linear or log, readily appreciated. The scale numerals should be</p>	<p>34 POINTS TOTAL</p> <p>4 points 20 points 10 points</p>

<p>easily readable.</p> <p>Statistical tests should be clearly defined and statistical significance should be shown in both figures and tables by superscripts of a, b, c.</p> <p>Data in text or tables should be shown to numbers of significant digits consistent with the accuracy of each individual measurement and biological relevance. For example, weight, usually measured to the nearest 0.5 kg, should be shown in mean and SD to at most one significant digit after the decimal point.</p>	
<p>DISCUSSION</p> <p>What did you expect to find and why How did your results compare with those expected How do you explain any unexpected results How might you test potential explanations What's your next experiment</p> <p>This should summarize but not repeat the Results and should distinguish between logical explanations of the results reported and extrapolations or hypotheses drawn from the results.</p> <p>The discussion should end with a succinct summary of the data and conclusions AND should put the findings into the context of the reason for the study as outlined in the Introduction, Where possible and reasonable, some conclusions should be made about the wider implications of the study findings.</p>	<p>40 POINTS TOTAL</p> <p>8 points 8 points 8 points 8 points 8 points</p>
<p>LITERATURE CITED/REFERENCES</p> <p>Full citations for any references cited in your paper No less than 10 references</p> <p>Do not list references in alphabetical order, but list and number them as they appear in they paper. No et al. citations are allowed in the references. All authors must be listed in the references. If it is necessary to cite an abstract, this should be designated.</p>	<p>20 POINTS TOTAL</p> <p>2 points each</p>
<p>WAYS TO LOSE POINTS (This is not an exclusive list)</p> <p>Abstract too long Misspelling of words Poor sentence structure Run on sentences, incomplete sentences, sentences that make no sense Have references in bibliography that are not cited in the text Have references in paper not cited in bibliography Figures (including charts) without legends and titles and/or not noted in the text of the paper</p>	<p>0.5 point/1-5 words over 0.5 points per word 1 point/sentence</p> <p>1 point/infraction 1 point/infraction 0.5 point/infraction</p>

RUBRIC FOR FINAL PAPER
IF YOU ARE WRITING A RESEARCH PAPER

This is going to be a critique of a paper using at least three other papers to support your argument

<p>TITLE PAGE</p> <p>Title By line Date</p>	<p>8 POINTS TOTAL</p> <p>4 points 2 point 2 point</p>
<p>SUMMARY – 360 words</p> <p>Introductory Statement Summary of major material and methods Summary of major results Brief interpretation of results</p> <p>This should be self-explanatory without reference to the text and should not be a duplicate of the abstracts from the paper you are going to discuss in length. It should be written in your own words.</p>	<p>32 POINTS TOTAL</p> <p>8 points 8 points 8 points 8 points</p>
<p>INTRODUCTION</p> <p>Length 1-2 pages Brief summary of relevant background as relates to health disparities Purpose Support statement with references</p> <p>This should clearly and concisely review the rational for the study and identify what issues are going to be addressed. It should clearly place the report within the area being studied. It should not describe the outcome of any studies (in any detail) that will be discussed in the paper.</p>	<p>28 POINTS TOTAL</p> <p>4 points 8 points 8 points 8 points</p>
<p>MATERIALS AND METHODS</p> <p>Write in past tense Compare and contrast what the authors did – description of methods in general terms</p> <ol style="list-style-type: none"> a) what were their experimental subjects b) what was their experimental variables (dependent and independent) c) what was their method of collecting data d) what were their controls <p>This section should carefully compare and contrast the methods and materials used including sample size and statistical approaches. It should include details for unique experiments and appropriate references for commonly used techniques.</p>	<p>36 POINTS TOTAL</p> <p>4 points</p> <p>8 points 8 points 8 points 8 points</p>
<p>RESULTS/DATA</p> <p>Write in the past tense Figures with legends /Tables with titles Text to briefly describe the data -major observations and key trends</p> <p>This section should succinctly compare and contrast the results from at least three papers, the one you are in disagreement with and 2 that support your point of view) without any lengthy discussion or interpretation of individual data. Conclusions presented as declarative headings are not preferred. Extensive conclusions do not belong in the Results section.</p> <p>Where possible data should be presented in graphical rather than tabular format. Small tables may best be incorporated into the text. Tabular data should not repeat</p>	<p>34 POINTS TOTAL</p> <p>4 points 20 points 10 points</p>

<p>that shown in the graphs. Graphs should start the y-axis at 0 or show a clear scale break in those cases where starting at 0 would be difficult. The numerals on graph scales should be sufficiently large and clear enough and spaced to allow the data to be interpreted and the nature of the scale, e.g. linear or log, readily appreciated. The scale numerals should be easily readable.</p> <p>Statistical tests should be clearly defined and statistical significance should be shown in both figures and tables by superscripts of a, b, c.</p> <p>Data in text or tables should be shown to numbers of significant digits consistent with the accuracy of each individual measurement and biological relevance. For example, weight, usually measured to the nearest 0.5 kg, should be shown in mean and SD to at most one significant digit after the decimal point.</p>	
<p>DISCUSSION</p> <p>What did you expect to find and why How did your results compare with those expected How do you explain any unexpected results How might you test potential explanations What's your next experiment</p> <p>This should compare and contrast the conclusions drawn from the papers but not repeat the results and should distinguish between logical explanations of the results reported and extrapolations or hypotheses drawn from the results.</p> <p>The discussion should end with a succinct summary of the main conclusions in the paper in question along with the that of your contradictory papers AND should put the findings into the context of the reason for the study as outlined in the Introduction, Where possible and reasonable, your interpretation of the conclusions should be made about the wider implications of the study findings. Support your interpretations with information from at least one other paper that is not being discussed as thoroughly has the first four.</p>	<p>40 POINTS TOTAL</p> <p>8 points 8 points 8 points 8 points 8 points</p>
<p>LITERATURE CITED</p> <p>Full citations for any references cited in your paper No less than 5 papers should be used in this paper</p> <p>Do not list references in alphabetical order, but list and number them as they appear in they paper. No et al. citations are allowed in the references. All authors must be listed in the references. No abstracts can be used as one of the five papers discussed.</p>	<p>20 POINTS TOTAL</p> <p>4 points each</p>
<p>WAYS TO LOSE POINTS (this is not an exclusive list)</p> <p>Abstract too long Misspelling of words Poor sentence structure Run on sentences, incomplete sentences, sentences that make no sense Have references in bibliography that are not cited in the text Have references in paper not cited in bibliography Figures (including charts) without legends and titles and/or not noted in the text of the paper</p>	<p>0.5 point/5 words over 0.5 points per word 1 point/sentence 1 point/infraction 1 point/infraction 0.5 point/infraction</p>

OTHER NOTES FOR ALL PAPERS

Page limitations: The paper should be 5 pages minimum and no more than 10 pages long. Text should be double-spaced on 8 1/2 x 11 inch paper, font size = 12 point, font = Times

Figures and Tables: Tables and illustrations should complement and not reiterate the text. Tables/illustrations should not include data that can be given in the text in one or two sentences. Figures/illustrations/tables and the literature cited page will not be counted as part of the page. In other words, actual text count when counting pages. Use Arabic numerals on number tables. Multi-part figures must be labeled. Please use small non-bold, non-italic capital letters when using figure headings/labelings.

Each table must contain all necessary information in the caption and the table itself must be understandable independently of the text. Details of experimental conditions should be included in the table footnotes, although this should not unnecessarily repeat information in the Methods.

Figure Legends: Figure legends should be brief and should not restate information already in the Materials and Methods section.

Literature Cited: References should be presented in the following style:

1. Journal Articles:

Horton MA, Rimmer EF, Chambers TJ 1986 Giant cell formation in rabbit long-term bone marrow cultures: Immunological and functional studies. *J Bone Miner* **1**:5-14.

2. Articles in books:

Boyde A 1972 Scanning electron microscope studies of bone. In: Bourne GH (ed.) *The Biochemistry and Physiology of Bone*, 2nd ed., vol. 1. Academic Press, New York, NY, USA, pp.259-310.

3. Online journal:

Horton MA, Boyde A, Rimmer EF What is it all about? *Arch Pediatr Adolesc Med* [serial online] Available at: <http://www.ama-assn.org/sci-pubs.html>. Accessed November 10, 2001.

4. Online reference (website information, not journal related):

Williams A, Lea A, Allen D Kidneys and Cartwheels. Available at: <http://www.science.com>. Accessed November 10, 2001.

Terms and References on health disparities

Prevalence: “quantifies the proportion of individuals in a population who have a disease at a specific point in time or during a specific period. It provides an estimate of the probability or risk that an individual will have the disease at a given point in time”.

$$\text{Prevalence} = \frac{\text{number of existing cases of a disease at a given time period}}{\text{total population at risk}}$$

Incidence: “quantifies the number of new cases of disease that develop in a specific population during a specific time period”.

$$\text{Incidence} = \frac{\text{number of new cases of disease in a time period}}{\text{total population at risk at the beginning of the time period}}$$