

**BIOM525: Cellular and Molecular Basis of Disease Journal Club**  
**Spring 2021**  
**Wednesdays, 11-12pm**

**ZOOM**

**Join Zoom Meeting**

<https://hsc-unm.zoom.us/j/669969663>

**Meeting ID: 669 969 663**

(Calendar invite with this Zoom link will be emailed)

**(IF IN-PERSON)**

**Domenici North (new education building) Room #3706\***

*(\* Subject to change)*

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Office hours by appointment

Please feel free to contact us with any questions, concerns or suggestions you have. Faculty hosts for the seminar speakers are also available for consultation and you may invite them to attend the class session pertaining to their guest speaker.

**Course Description:**

This course is a 2-credit class offered to graduate students in the Biomedical Sciences Graduate Program (BSGP) that accompanies the Cellular and Molecular Basis of Disease (CMBD) Seminar Series. The CMBD seminar series invites scientists from across the world to present their research as formal talks each Friday throughout the semester. The seminar series features researchers from a variety of biomedical disciplines.

BIOM525 runs for ~16 weeks and meets on Wednesdays from 11:00AM-12:00PM in Domenici North (New Education Building) Room #3706 for formal class (or via Zoom - <https://hsc-unm.zoom.us/j/669969663>), at which students will give a journal club presentation of the paper by the speaker for that week. On Fridays, students will attend the seminar by the invited speaker, which will be held from 12:00-1:00 in Fitz Hall Room 203 (sometimes in Fitz Hall 303 or in Domenici Auditorium) (or via Zoom – the link for the CMBD seminar will be sent via email by the hosting Department faculty). Following the seminar, students will attend a catered luncheon with the speaker in Fitz Hall Room 309 (or virtual lunch via Zoom - <https://hsc-unm.zoom.us/j/93379109944> from 1:15 pm - 2:00 pm).

The objective of this course is to build and improve oral presentation skills, promote professional interactions amongst student peers by fostering critical discussion of scientific literature, and provide familiarity with biomedical research from a range of topics. This course is designed to provide students in the BSGP with critical thinking skills that can be applied during their qualifying examinations.

### **Course Objectives:**

At the end of this course, students will be able to:

1. Synthesize background information from a specialized biomedical topic to present to a general scientific audience.
2. Orally present and interpret data from the literature and describe their significance.
3. Describe the underlying principles of techniques used in a journal article.
4. Propose alternative approaches to test a scientific question.
5. Critique published data from the scientific literature and offer alternative interpretations and experimental approaches.
6. Formulate a new hypothesis based on the results from discussed study, and design future experiment(s) to test that hypothesis.

### **Grading:**

90-100, A

80-89, B

70-79, C

60-69, D

0- 59, F

\*\*Pluses and minuses will be assigned to letter grades at the course instructors' discretion.

### **Grading Breakdown:**

25% Attendance

30% Summaries



35% Seminar Presentation

5% Self Evaluations

5% Participation

### **Seminar and Class Attendance:**

Students are required to attend each of the CMBD seminars as well as the accompanying Journal Club. Seminar attendance will be recorded on a sign-in sheet located at the back of the lecture hall (or via QR code/Smartsheet link – below), while Journal Club attendance will be recorded on a sign-in sheet, which is circulated in the class (or via QR code or Smartsheet sign-in link – below). Students will also be graded based on their participation in seminar discussions. On weeks when seminars are not scheduled, Friday seminar will be cancelled, but Wednesday Journal Club will go on as planned with adjustments detailed in the **Paper Selection** section below. This should be treated as a regular class for your attendance.

|  |   |  |  |  |
|--|---|--|--|--|
| <b>BIOM 525 (Wednesdays at 11am)</b>   |   | <b>BIOM 530/CMBD seminar (Friday at 12pm)</b>  |  | <b>Virtual lunch with CMBD speaker (Friday 1:15-2pm)</b> |
| <b>Attendance</b>  | <b>Zoom link</b>                            | <b>Attendance</b>  | <b>Zoom link</b>   | <b>Zoom link</b>   |
|  <p>Or<br/>Click this <a href="#">link</a> for attendance – sign-in</p> | <p>BIOM 525 – <a href="#">Zoom link</a></p> |  <p>Or<br/>Click <a href="#">here</a> for attendance- sign-in</p> | <p>Will be sent by the host (please look out for HSC-CMBD email)</p> | <p>Virtual lunch <a href="#">Zoom link</a></p>           |

### Additional guidelines for virtual BIOM 525 class via Zoom

It is required for students to turn on their cameras during weekly Zoom-based virtual BIOM 525 class. It is okay to turn off the camera if you need a brief moment of privacy, but please come back on to make sure presenting students feel that they can see the classmate faces (instead of just names) as their audience and feel connected.

To sign-in using QR code, all you need to do is to open camera app from your smartphone and try to take a picture of the QR code, it automatically asks you to digitally sign-in to the class (using your UNM ID and password) and electronically sign-in to the class for attendance. If your smart phone camera app doesn't automatically open the browser for sign in, you can download a QR code reader from the App Store/Google Play and install it. Alternatively, you can also sign-in using the Smartsheet sign-in link right below QR codes. Your sign-in will create a typical attendance spread sheet at the end, which will record the attendance for grading purposes. The QR code or Smartsheet link attendance to be used every week before or during the class, as it will be parsed right after every class. Please note that it stamps date and time when you sign-in, therefore, please make sure to scan the QR code right before or during the class. The Zoom link for the class is also saved in the UNM Learn under the folder BIOM 525 – ZOOM.

It is recommended that students join virtual Zoom class at least 5 min before the start of the class. Presenting students can log-in to class 10 min before class starts to have sufficient time to setup their presentation and make sure that the screenshare and pointer works as expected. While the Zoom link is provided for the virtual BIOM 525, please let the instructor know if you don't have access to the internet and/or need to use phone line instead to join the class.

Presenting students: If it is your turn to present, please click Zoom meeting link (above ~10min before the class) and open your PPT slides. Once you are ready to present, unmute your mic and start sharing your screen. Once done, the first presenting student will un-share his/her screen and the second student will share his/her screen. It is recommended that both presenting students prepare a single ppt, which is seamless and has uniform slide background, font style, size and consistent. Therefore, it is imperative for presenting students to work together in preparing their ppt slide deck.

## **Class and Seminar Absences**

You are permitted to miss one class/CMBD seminar per semester without a makeup assignment. In such case, it is advised to provide advanced notice to the instructors. If you anticipate missing more than one class/seminar, please inform the instructors as soon as possible. For missed journal clubs (if more than one in a semester), you will have to read a separate journal article (selected by the instructors) and submit a comprehensive summary (including background, hypothesis, methods, results and conclusions) within two weeks from the missed class. If you will miss a second CMBD seminar, you are required to attend another full-length biomedical seminar at UNM. This includes departmental seminars, but Journal Clubs will not count towards this requirement. You are required to write a short 100–200-word summary outlining the Speaker, Background, Hypothesis, Methodology, Major Results, Conclusion and Impact/Significance from the work presented at the seminar you attended. This must be turned in within 30 days of your missed seminar.

## **Journal Club Oral Presentations**

Individual students will be responsible for one oral presentation during the semester. The purpose of these presentations is to train students in preparing and giving effective scientific presentations. If you would like feedback on your upcoming presentation, please contact the teaching assistant well in advance.

## **Paper Selection**

Papers will be assigned on Blackboard UNM Learn platform (online) at least one week in advance. Occasionally, we may not receive research papers from the guest speaker in a timely manner due to their busy schedule. If this happens, then, the TA will contact the guest speaker directly and obtain his/her relevant paper for the class. When a speaker is not scheduled, students will choose an article to be presented. A group of three articles will be placed in the weekly folder on Blackboard Learn (or sent to the presenting students via email by the TA/instructor). It is student's responsibility to choose one paper to present. The students must notify the course instructors and teaching assistant by the Friday before their presentation week.

## **Best way to split presentations when there are two or three students presenting**

Since we typically have ~16 CMBD seminars and as many BIOM 525 classes, and that each student is expected to present twice per semester, every presentation will most likely will have two students (rarely three students). That means, each student will have an opportunity to present first (introduction to speaker, background, hypothesis methods and first part of results) and second (second part of results, conclusion, critiques, and future direction) parts of a presentation. It is advised that if a student presents first part of the present in his/her first scheduled class, it is required to have that student present second part in his/her second presentation. This gives a balance when we grade each students' overall presentation.

## **Evaluations**

**Self-evaluation:** Within 24 hours after the presentation, each student will be expected to email the instructors a self-evaluation form. Please take this form seriously, as it contributes to 5% of your overall grade in the course. Thoughtful and reflective comments are expected (no one liners please). The self-evaluation form is available at the UNM Learn and the rubric can be found at the end of this syllabus.

**Instructor evaluation:** Each instructor and teaching assistant will evaluate presentation from each student in every class using the rubric found at the end of this syllabus. After the class, the instructors and the TA will provide feedback on strengths and weaknesses to presenting students without the rest of the class (~15-30 min).

**Peer-evaluation:** Students who are not presenting during Journal Club will be given a feedback form (or also available online at UNM Learn) to give comments to their peers regarding their presentations. Filled peer-evaluation forms will be given (or emailed) to the presenters after their presentations.

### **Accommodation Statement**

Accessibility Services (Mesa Vista Hall 2021, 277-3506) provides academic support to students who have disabilities. If you think you need alternative accessible formats for undertaking and completing coursework, you should contact this service right away to assure your needs are met in a timely manner. If you need local assistance in contacting Accessibility Services, see the Bachelor and Graduate Programs office.

### **Title IX Statement**

A Note About Sexual Violence and Sexual Misconduct: As a UNM faculty member, I am required to inform the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu) of any report I receive of gender discrimination which includes sexual harassment, sexual misconduct, and/or sexual violence. You can read the full campus policy regarding sexual misconduct at <https://policy.unm.edu/university-policies/2000/2740.html>. If you have experienced sexual violence or sexual misconduct, please ask a faculty or staff member for help or contact the LoboRESPECT Advocacy Center.

### **Academic Integrity**

The University of New Mexico believes that academic honesty is a foundational principle for personal and academic development. All University policies regarding academic honesty apply to this course. Academic dishonesty includes, but is not limited to, cheating or copying, plagiarism (claiming credit for the words or works of another from any type of source such as print, Internet or electronic database, or failing to cite the source), fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. The University's full statement on academic honesty and the consequences for failure to comply is available in the University Catalog and in the Pathfinder. **A flyer from iThenticate® listing the most common 10 types of plagiarism is included in the UNM Learn. An in-built tool called 'SafeAssign' is also available in UNM Learn which can check for plagiarism and also help students how effectively integrate secondary sources in their presentations/summaries. Additional details about SafeAssign is here:** [https://youtu.be/Qld2Xza\\_95k](https://youtu.be/Qld2Xza_95k) and <https://online.unm.edu/help/learn/faculty/assessments/safeassign/index.html>

### **Cell Phones and Technology**

As a matter of courtesy, please turn off cell phones, pagers, and other communication and entertainment devices prior to the beginning of class. Notify me in advance if you are monitoring an emergency, for which cell phone ringers should be switched to vibrate.

## **Presentations Guidelines**

Presentations are expected to be approximately **45 minutes** (be very careful with your presentation time), leaving 15 minutes for questions from the audience. Presentations are expected to follow the outline below.

- Title Slide
- Outline (do not spend more than 30 seconds on this slide)
- Introduction of Seminar Speaker
- **Article Content (20 minutes)**
  - **Introduction**
    - Background information necessary for audience to follow presentation
    - Relevance/significance of work
    - Introduction should lead into hypothesis for the study
  - **Hypothesis/Question/Need**
    - Clearly state the hypothesis from the article
    - Hypothesis should be formatted as “The authors hypothesize...”
    - If it is not a hypothesis driven project, state the overall question/purpose
  - **Methods/Experimental Design/Results**
    - Explain the experimental design
      - What cells/animals are used? Cell type, animal age, gender, etc... What variable is altered? What is the experimental pipeline from set up to analysis?
    - Explain the underlying method behind unconventional methodologies
    - Summarize data from most important figures (please do not show all figures)
    - Interpret data and summarize the significance of their findings
  - **Conclusions/Interpretations/Critiques**
    - Overall conclusions are mentioned at the end of each major piece of data
    - Tie conclusions back to hypothesis – was their hypothesis correct?
    - How do the conclusions relate to human disease?
  - **Critiques**
    - Provide critiques of the paper
    - Please do not focus on petty critiques (mixed panels, graph types, writing style...)
    - Critiques of experimental design, data analysis, missing controls, and improper interpretations are welcome
- **Future Directions (25 minutes)**
  - **Rationale**
    - Provide the audience with rationale as to why the future direction was chosen
    - How is it linked to what was shown in the current publication?
  - **Hypothesis/Question**
    - How do the previously findings within the field lead you to your hypothesis?
    - Format hypothesis to start with “I hypothesize...”
  - **Specific Aim**
    - What specifically will you be examining in your future direction?
    - Make sure to use proper aim language (do not use the word “If”
  - **Experimental Design**
    - How will you examine your aim? What system will you use?
    - What will you quantify? What assays will you use?
  - **Expected Outcomes/Conclusions/Alternative Approaches**
    - What do you expect your experimental design to tell you?
    - What do you plan to do if your experimental design does not pan out?

## Grading Rubric for Oral Presentations:

### PAPER PRESENTATION SECTION:

|                                     | <b>Excellent (3 points)</b>  | <b>Acceptable (2 points)</b>   | <b>Emerging (1 point)</b>  |
|-------------------------------------|--|--|--|
| <b>Introduction/<br/>Background</b> | Succinct and informative summary of the field.   | Adequate summary of the research topic.  | Uninformative summary of the field.  |
| <b>Hypothesis/<br/>Question</b>     | Hypothesis/question is relevant to background and testable.<br><br>Hypothesis is formatted properly.   | Acceptable hypothesis/question but incomplete in nature.<br><br>Hypothesis is formatted adequately.  | Hypothesis is not well related to background and/or unclear.<br><br>Hypothesis is not formatted properly.  |
| <b>Methods</b>                      | Clear description of technique(s) used.<br><br>The description accurately explains the underlying principle of the technique, a complete list of the types of measurements that the experimenters made, and the analysis methods that were used. | Description of technique(s) used, but it is somewhat unclear or inaccurate.<br><br>The description touches upon the underlying principle, mentions most measurements that were made and analysis methods that were used.                               | Inaccurate description of the technique used or does not provide description at all.<br><br>Student did not mention the kinds of measurements that were made and left out important analysis methods that were used.   |
| <b>Results/<br/>Conclusions</b>     | Interpretation of the results is reasonable.<br><br>Attempts to relate to the hypothesis are made.<br><br>Conclusions are present after each major piece of data.  | Interpretation of the data is somewhat logical but lacks sound evidence based upon the data provided.<br><br>The student explains how their interpretation differs from the authors to a satisfactory level.<br><br>Conclusions are sometimes present. | The student provides an interpretation of the data that does not align with the results.<br><br>The student does not explain how their interpretation differs from that of the authors and does not explain why.<br><br>Conclusions are missing throughout the presentation. |
| <b>Critique of<br/>Data</b>         | The student offers at least 3 thoughtful and in-depth criticisms of the provided data and methodology.   | The student offers criticisms of the provided data but they are not well developed.  | The student offers few criticisms and alternative methods and they are not well developed.   |

## **FUTURE DIRECTION SECTION:**

|  | <b>Excellent (3 points)</b>  | <b>Acceptable (2 points)</b>   | <b>Emerging (1 point)</b>  |
|--|--|--|--|
| <b>Rationale</b>   | <p>Clear rationale as to why the student chose their future direction. The idea is logical.</p> <p>There is a clear link between the paper data and the student's idea.</p> <p>The student uses specific examples from the literature to support their idea.</p> | <p>There is some rationale as to why the student chose their future direction.</p> <p>The student uses some data from the literature to support their idea.</p> <p>The idea is somewhat logical, but not entirely clear.</p> | <p>The rationale underlying the student's idea is lacking.</p> <p>There is limited basis for the future direction.</p> <p>Evidence from the primary literature is generally missing.</p> |
| <b>Hypothesis/Question</b>                                   | <p>Hypothesis/question is relevant to background and testable.</p> <p>Hypothesis is formatted properly.</p>  | <p>Acceptable hypothesis/question but incomplete in nature.</p> <p>Hypothesis is formatted adequately.</p>   | <p>Hypothesis is not well related to background and/or unclear.</p> <p>Hypothesis is not formatted properly.</p>   |
| <b>Specific Aim</b>  | <p>Specific aim is formatted properly.</p> <p>The language used is conducive to aim writing.</p> <p>The aim is supported by the student's rationale.</p>   | <p>Specific aim is formatted properly.</p> <p>The language is used somewhat appropriate.</p> <p>The aim is somewhat supported by the student's rationale.</p>  | <p>Specific aim is not formatted properly.</p> <p>The language is inappropriate.</p> <p>The aim is not adequately supported by the student's rationale.</p>                              |
| <b>Methods/Experimental Design</b>                           | <p>The proposed experimental design is specific and feasible.</p> <p>It includes proper controls.</p> <p>The design adequately tests the student's hypothesis.</p>   | <p>The proposed experimental design is somewhat feasible.</p> <p>Some controls are included.</p> <p>The design adequately tests the hypothesis.</p>  | <p>The proposed experimental design is somewhat feasible.</p> <p>Controls are missing throughout.</p> <p>The design somewhat tests the student's hypothesis.</p>                         |
| <b>Expected Outcomes/Conclusions /Alternative Approaches</b> | <p>The student uses background information to predict experimental outcomes.</p> <p>These outcomes are linked back to the student's hypothesis.</p> <p>Alternative approaches are proposed.</p>  | <p>The student predicts experimental outcomes but they are not linked to the background.</p> <p>These outcomes are linked back to the student's hypothesis.</p> <p>Alternative approaches are proposed.</p>                  | <p>The student predicts experimental outcomes without basis.</p> <p>These outcomes are not linked back to the student's hypothesis.</p> <p>Alternative approaches are not proposed.</p>  |



## **PRESENTATION SKILLS:**

|                                 | <b>Excellent (3 points)</b>   | <b>Acceptable (2 points)</b>   | <b>Emerging (1 point)</b>  |
|---------------------------------|---|--|--|
| <b>Presentation Design</b>      | <p>Presentation has clear slides that are easy to read, containing figures and text minimally.</p> <p>Active titles are used.</p> <p>Conclusion boxes are used.</p> <p>Figures are large enough to read.</p> <p>Citations of primary literature are used.</p> | <p>The student has some elements of excellent presentation skills, but others are lacking.</p>             | <p>The student lacks most elements of excellent presentation skills.</p>   |
| <b>Presentation Skills</b>      | <p>Speaking volume is appropriate and pace is not too fast or slow.</p> <p>Speech fillers are used minimally.</p> <p>Pointer is used effectively.</p> <p>Pointer is not used to point to text.</p> <p>Presentation falls within time limit.</p>               | <p>The student has some elements of excellent presentation skills, but others are lacking.</p>             | <p>The student lacks most elements of excellent presentation skills.</p>   |
| <b>Question/ Answer Session</b> | <p>Student answers questions clearly and appropriately.</p> <p>Proper question/answer etiquette is used.</p>  | <p>Student answers some questions clearly and appropriately and some question/answer manners are used.</p> | <p>Student answers few questions clearly and appropriately.</p> <p>Student does not follow proper question/answer etiquette.</p> |

## Weekly Summary

Aside from students presenting in Journal Club that week, all students are required to complete a written summary pertaining to the paper to be presented. The written summary may not exceed 1.5 pages and should be formatted with single spacing, 11pt Arial font. The summary should generally take up 1 page whereas the future direction limited to ½ page. The weekly summaries must be submitted on UNM Learn by 11:00 a.m. on the Wednesday of Journal Club. Late assignments will be reduced by **5 points per day**. (Submission at 11:01 a.m. on the day of class constitutes a loss of 5 points.)

### **Summary File Name:**

Please save your summary as a word or pdf document in the following format:

LastName\_WeekXSummary

Ex: Young\_Week9Summary.docx

### **Summary Format:**

At the top of the summary, please include your name, the seminar speaker name and the paper title.

### **Summary Content (25 points total)**

#### **Paper Content (12 points)**

- Background (~2 sentences)
  - This section might provide background on a particular disease, a family of proteins, or a newly developed technique, as a few examples.
- Significance (1-2 sentences) Please ***italicize*** your significance statement
  - What makes this study significant or innovative? How will it impact biomedical research in this field of study?
- Hypothesis/Question (1-2 sentences)
  - Please underline the hypothesis
  - Please format the hypothesis as “the authors hypothesize that...”.
  - If this is a need-based study, do not write a hypothesis, instead come up with a question
- Methods/Results/Conclusions
  - Description of the major results (depends on the paper, but try to focus on their three major findings)
  - Follow the following format for writing up results:
    - **Why** – what experimental question was asked?
    - **How** – how was the experiment performed?
    - **Where** – state the figure panel in which the data is displayed
    - **What** – describe the data shown in the graph in detail, mentioning controls
    - **So what** – what is the conclusion – does relate this to the hypothesis
      - This should be formatted as “these data suggest” or “these data indicate” or “from these studies, the authors conclude” etc...
- Critique (~3 sentences)
  - Mention three unique critiques of the study
  - Avoid critiquing petty mistakes (mislabeled graphs, wanting a bar graph instead of a different kind, writing style)

#### **Future Direction Content (10 points)**

- Rationale (3-4 sentences)
  - How does the future direction link to the previous study?
  - What is the evidence that led you to choose this future direction?

- Please use examples from the literature.
- Hypothesis (1-2 sentences)
  - Your hypothesis should be testable
  - Please underline your hypothesis
- Specific Aim (1 sentence)
  - What specifically do you plan to examine?
  - Be sure that your aim is formatted properly and supported by your rationale.
- Experimental Design
  - Describe the specific experiments you plan to use to test your aim
  - What cells/animals? What will you quantify?
  - Make sure to mention controls
- Expected Outcomes/Alternative Approaches
  - What do you expect to find?
  - How does this connect to your hypothesis?
  - If your study does not pan out, how else could you approach this problem?
  - Are there any limitations from these methods?

### **Writing Content (3 points)**

- Spelling, punctuation, grammar
- Complete sentences are used
- Proper nouns are capitalized, italics are used for scientific names; for example: (Smith *et al.*, 2000) also: *C. elegans*, *in vivo*, *in situ*...
- Paragraphs are divided based on topics
- In text citations in the (Author, year) format are used
  - Do not use in-text citations for the paper which you are reviewing

## Grading Rubric for Weekly Summary:

### Journal Article Section (12 points)

|                                     | Excellent (2 points)  | Acceptable (1 points)   | Emerging (0 point)  |
|-------------------------------------|---|---|---|
| <b>Introduction/<br/>Background</b> | <p>Succinct and informative summary of the field.</p> <p>The topic examined is briefly described.</p> <p>The biological components examined are described.</p>  | <p>Adequate summary of the field.</p> <p>Topic somewhat described.</p> <p>Biological components are somewhat described.</p>   | <p>Uninformative summary of the field.</p> <p>Disease is not described.</p> <p>Biological components are not described.</p>   |
| <b>Significance/<br/>Innovation</b> | <p>Provides a convincing/ succinct summary of the significance/innovation of the authors study to the field.</p> <p>The statement of significance is <b><i>italicized</i></b>.</p> <p>The statement of significance is formatted properly.</p>  | <p>Acceptable statement of significance/innovation.</p> <p>The statement is <b><i>italicized</i></b>.</p> <p>The statement is formatted properly.</p>   | <p>Significance is not addressed or it is inaccurate.</p> <p>The statement is not italicized.</p> <p>The statement is not formatted properly.</p>   |
| <b>Hypothesis/<br/>Question</b>     | <p>Hypothesis/question is relevant to background and testable.</p> <p>Hypothesis is properly formatted and <b><u>underlined</u></b>.</p> <p>Hypothesis is succinct.</p>   | <p>Acceptable hypothesis/question but incomplete in nature.</p> <p>Hypothesis/question is properly formatted and <b><u>underlined</u></b>.</p> <p>Hypothesis is not succinct.</p>   | <p>Hypothesis is absent or not well related to background and/or unclear.</p> <p>Hypothesis is not properly formatted or underlined.</p> <p>Hypothesis is not succinct.</p>   |
| <b>Methods/<br/>Results</b>         | <p><b><u>Student accurately and succinctly summarizes the major results and methods and refers to figure numbers.</u></b></p> <p>The student connects the measurement made with the method and result provided by the author.</p> <p>Student includes <u>a brief description of non-traditional methods</u> (if applicable)</p> <p>Interpretation of the results is reasonable.</p> | <p>Student does a moderate job summarizing of the major results along with the methods used to obtain these results.</p> <p>The student somewhat connects the measurement made with the method to the result provided by the author.</p> <p>Non-traditional methods are described.</p> <p>Interpretation of the data is somewhat logical but lacks sound evidence based upon the data provided.</p> | <p>The summary of the results is incomplete. The student does not connect the measurements made with the result.</p> <p>Methods are poorly described.</p> <p>The student provides an interpretation of the data that does not align with the results.</p> |

|                         |  |   |   |
|-------------------------|--|---|---|
| <b>Conclusions</b>      | <p>Conclusions are present after each major piece of data.</p> <p>Conclusions are clear.</p> <p><b><u>Attempts to relate conclusion to hypothesis.</u></b></p> | <p>Conclusions are sometimes present.</p> <p>Conclusions are sometimes clear.</p> <p>Conclusions are sometimes connected to hypothesis.</p> | <p>Conclusions are not connected to the hypothesis.</p> <p>Conclusions are not clear.</p> <p>Conclusions are missing after major results.</p> |
| <b>Critique of Data</b> | <p>The student offers at least <b>3 thoughtful and in-depth criticisms</b> of the provided data and methodology.</p>   | <p>The student offers less than 3 criticisms, or they are not well developed.</p>   | <p>The student offers few criticisms and alternative methods, and they are not well developed.</p>  |

### Future Directions Section (10 points)

|                            | <b>Excellent (2 points)</b>  | <b>Acceptable (1 points)</b>   | <b>Emerging (0 point)</b>  |
|----------------------------|--|--|--|
| <b>Rationale</b>           | <p>Clear rationale as to why the student chose their future direction.</p> <p><b><u>There is a clear link between the paper data and the student's idea.</u></b></p> <p>The student uses specific examples from the literature to support their idea.</p> <p>Overall, the idea is logical.</p> | <p>There is some rationale as to why the student chose their future direction.</p> <p>The student uses some data from the literature to support their idea.</p> <p>The idea is somewhat logical, but not entirely clear.</p> | <p>The rationale underlying the student's idea is lacking.</p> <p>There is limited basis for the future direction.</p> <p>Evidence from the primary literature is generally missing.</p> |
| <b>Hypothesis/Question</b> | <p><b><u>Hypothesis/question is relevant to background and testable.</u></b></p> <p>Hypothesis is formatted properly.</p>  | <p>Acceptable hypothesis/question but incomplete in nature.</p> <p>Hypothesis is formatted adequately.</p>   | <p>Hypothesis is not well related to background and/or unclear.</p> <p>Hypothesis is not formatted properly.</p>   |
| <b>Specific Aim</b>        | <p>Specific aim is formatted properly.</p> <p><b><u>The language used is conducive to aim writing.</u></b></p> <p>The aim is supported by the student's rationale.</p>   | <p>Specific aim is formatted properly.</p> <p>The language is used somewhat appropriate.</p> <p>The aim is somewhat supported by the student's rationale.</p>  | <p>Specific aim is not formatted properly.</p> <p>The language is inappropriate.</p> <p>The aim is not adequately supported by the student's rationale.</p>                              |
| <b>Experimental Design</b> | <p><b><u>The proposed experimental design is specific and feasible.</u></b></p> <p>It includes proper controls.</p> <p>The design adequately tests the student's hypothesis.</p>   | <p>The proposed experimental design is somewhat feasible.</p> <p>Some controls are included.</p> <p>The design adequately tests the hypothesis.</p>  | <p>The proposed experimental design is somewhat feasible.</p> <p>Controls are missing.</p> <p>The design somewhat tests the student's hypothesis.</p>                                    |
|                            |  | <p>The student predicts experimental outcomes but</p>  |  |

|                                       |   |  |   |
|---------------------------------------|---|--|---|
| <b>Expected Outcomes/ Conclusions</b> | <p>The student uses background information to predict experimental outcomes.</p> <p><b><u>These outcomes are linked back to the student's hypothesis.</u></b></p> | <p>they are not linked to the background.</p> <p>These outcomes are linked back to the student's hypothesis.</p> | <p>The student predicts experimental outcomes without basis.</p> <p>These outcomes are not linked back to the student's hypothesis.</p> |
|---------------------------------------|---|--|---|

### Writing Skills (3 points)

|  | <b>Excellent (2 points)</b>  | <b>Acceptable (1 points)</b>  | <b>Emerging (0 point)</b>  |
|--|--|---|--|
| <b>Writing Style</b>                     | <p>Proper spelling, punctuation and grammar throughout.</p> <p>Paragraphs divided based on topics.</p> <p>Complete sentences are used.</p> <p>Casual language is never used.</p> | <p>Some spelling, punctuation, grammar mistakes throughout.</p> <p>Paragraphs are divided based on topics.</p> <p>Complete sentences are used.</p> <p>Some casual language is used.</p> | <p>Spelling, punctuation, grammar mistakes consistently present.</p> <p>Paragraphs are not divided based on topics.</p> <p>Complete sentences are mostly used.</p> <p>Casual language is used.</p> |
| <b>In-text Citations (1 or 0 points)</b> |  | In-text citations are used.   | In-text citations are not used.  |

**Total summary points = 25**

## Spring 2021 BIOM 525 - Presentation Schedule

| <b>Date</b> | <b>Speaker</b>          | <b>Presenter #1</b>                      | <b>Presenter #2</b> | <b>Hosting UNM faculty</b> |
|-------------|-------------------------|--|---------------------|----------------------------|
| 1/20/2021   | Dr. Xiaoyong Yang       | Welcome/Introduction<br>Dr. Bhaskar/Gaby |                     | Dr. Meilian Liu            |
| 1/27/2021   | Dr. Xiaoyong Yang       | Jacob                                    | Eric                | Dr. Meilian Liu            |
| 2/3/2021    | Dr. Michael Hoppa       | Ruoning                                  | Olivia              | Dr. Sascha Alles           |
| 2/10/2021   | Dr. Zheng Sun           | Andzoa                                   | Stefan              | Dr. Alicia Bolt            |
| 2/17/2021   | Dr. Donna Farber        | Randy                                    | Danae               | Dr. Judy Cannon            |
| 2/24/2021   | Dr. Jessie Maxwell      | Isabella                                 | Luke                | Dr. Ludmila Bakhireva      |
| 3/3/2021    | Dr. Stephen Haggarty    | Chunqing                                 | Marissa             | Dr. Laura G. Bosc          |
| 3/10/2021   | CTSC/TBD                | Geneva                                   | Justine             | Dr. Mary 'Liz' Torrez      |
| 3/17/2021   | Spring Break – No class |  |                     |                            |
| 3/24/2021   | Dr. Emily Scott         | Olivia                                   | Jacob               | Dr. Curt Hines             |
| 3/31/2021   | CTSC/TBD                | Eric                                     | Ruoning             | Dr. Mary 'Liz' Torrez      |
| 4/7/2021    | Dr. Michael Tymianski   | Danae                                    | Andzoa              | Dr. Surojit Paul/BBHI      |
| 4/14/2021   | Dr. Joel Meyer          | Stefan                                   | Randy               | Dr. Alicia Bolt            |
| 4/21/2021   | Dr. Justin Colacino     | Marissa                                  | Isabella            | Dr. Alicia Bolt            |
| 4/28/2021   | Dr. Roza Nurieva        | Luke                                     | Chunqing            | Dr. Xuexian Yang           |
| 5/5/2021    | TBD                     | Justine                                  | Geneva              | TBD                        |
| 5/12/2021   | Dr. Hongxia Ren         | Finals – No Class                        |                     | Dr. Meilian Liu            |