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Course Type/ Level:	Biology, 100-400
Assignment Goals:	Guide students through the process of understanding/annotating a primary literature scientific article.
Materials to Provide Students:	1. Example of annotated primary paper 2. Primary paper for current analysis 3. Paper analysis sheet 4. Supplemental readings, videos, animations
Technological Resources Needed:	Google Classroom or Moodle, Video/Audio Recording Tool, Google Meet, Google Slides, Scanner App or Commenting Function
Preparatory Steps:	**Share Materials:** Post primary literature article (annotated example and article for current analysis), paper analysis sheet, and supplemental readings and materials in clearly labeled folder in Google Classroom or Moodle. **Share instructions in multiple ways:** Create a short video or audio recording that explains the assignment and paper analysis sheet (what the assignment intends to accomplish, how the paper analysis sheet should be used, why it is important, and relationship of the paper analysis sheet to the larger assignment). Make sure that video/audio includes closed captions or a transcript. Post audio or video to Google Classroom or Moodle in the appropriate folder.
Tasks/Steps: (Outline of the steps this activity or assignment involves)	**Post "Announcement"** to the course site (Google Classroom or Moodle): This alerts students that there is an activity/assignment shared (with relevant deadline/timeline information for steps to follow). 1. **Students review assignment independently.** Faculty is available via video or chat to answer any questions. 2. **Independent Reading:** Students read the example of an annotated primary paper. 3. **Response Question:** After reading the example, students respond to the following prompt (shared on Google Classroom/Moodle): Name 3 features of the comments/annotations that are helpful to your overall understanding of the paper. List one thing you wish was there that would have helped you understand the paper better. **This can be done as an "assignment" (only the professor sees the answer) or as a discussion forum (students share responses and can respond to one another).**

4. **Small Group Work 1:** Faculty divides students into groups of 2-3 and makes sure that groups know how to contact one another.
   a. **Each group is assigned 1 figure** from the primary paper to work with.
   b. **Groups meet using Google Meet** (or another video conferencing tool) to create a shared Google Slide document.
   c. **On the slide groups each do the following:**
      i. Cut and paste the figure (from the paper) they are assigned.
      ii. Answer the following questions:
         1. What is the main hypothesis being addressed in this figure?
         2. What technique are they using to address the question?
         3. What was their result, and how does this figure demonstrate it?
         4. What is the follow up question that this data leads you to?
   d. **Groups share completed slides** via Google Classroom or Moodle, or email slides to faculty to share.

5. **Discussion Question:** Students read and respond to the group slides and respond by way of the following question: What is one fact that you didn't fully understand before looking at the slides posted?

6. **Small Group Work 2:** (*Homework Assignment)* Annotate the paper, in the manner of the example paper circulated previously. Use either hand written notes that are scanned/photographed and shared, or the commenting function of Adobe reader/Apple Preview.
   a. Be sure to highlight the same types of information as the sample paper: e.g. what parts of the introduction demonstrate why this is a crucial study, how this study fits into the literature, what the main hypothesis is etc.

7. **Post annotated paper to an assignment portal** on Google Classroom or Moodle at desired date. *Make all annotated papers available to the entire class for use in studying for exam.*