

## Medical Bioscience Research Outline

Teams competing in the Medical Bioscience category are responsible for the following items:

### I. Scientific Journal

- A. A composition or bound notebook is recommended
  1. Front cover should include: student names, contact information, school
  2. Use a blue or black pen to make all entries in the notebook. Incorrect entries may be lined out with a single line, then labeled with initials and date. White-out should not be used.
  3. Graphs and other small sheets of paper should be pasted/stapled in the notebook, with no loose paper.
  4. Entries should be brief, concise and include date of entry. Full sentences are not required. Neatness is important.
- B. Requirements:
  5. Notes & Reflections
  6. Background Information (description of the problem, historical background of the topic, scope of the research project that will take place, using future tense)
  7. Question
  8. Hypothesis
  9. Experimental Procedure:
    - Material List: For example— glassware (include size), machinery (include model number), chemicals (include quantity, concentration, etc.)
    - Chemical Reagents and equations shown with units
    - Protocol: step by step procedure in past tense; include dependent vs. independent controls
  10. Data Analysis: include charts, graphs, diagrams, photos, all titled, labeled and with captions whenever applicable
  11. Conclusion: four parts— (1) state what the data analysis means, (2) hypothesis correct or not & why, (3) experimental errors, and (4) recommendation for further research

### II. Scientific Paper (Deadline: April 5, 2019)

(typed, 1-inch margins, 12 font, Times New Roman)

- A. Cover and Title Page
- B. Table of Contents (starts with the Abstract & ends with the References)
- C. Abstract (summary of project using the scientific method, less than 250 words)
- D. Introduction (background description of the problem, historical background of the topic, scope of the research project that will take place, using future tense)
- E. Question/s: What your team is trying to solve
- F. Hypothesis: Educated Guess
- G. Material List (see above for reference)
- H. Written Protocol: step by step procedure in past tense; include dependent vs. independent controls
- I. Data Analysis: include charts, graphs, diagrams, photos. All should be titled, labeled and captioned whenever applicable
- J. Conclusion (four parts)
  1. State what the data analysis means
  2. State whether or not the hypothesis was correct or not
  3. Experimental errors
  4. Recommendation for further research
- K. References (primary and secondary)

### III. Presentation Materials

- A. Visual Display (trifold, digital medium or similar)