### Summer Undergraduate Research Symposium 2019
West Virginia University
Judging Rubric for Poster Presentation of STEM Research

*adapted from the rubric developed by the American Society for Microbiology and the Committee for the Annual Biomedical Research Conference for Minority Students (ABRCMS)*.

<table>
<thead>
<tr>
<th>Score</th>
<th>5 (Excellent)</th>
<th>4 (Very Good)</th>
<th>3 (Good)</th>
<th>2 (Fair)</th>
<th>1 (Poor)</th>
</tr>
</thead>
</table>
| **Hypothesis/ Goals and Background** | • *Background information* was relevant and summarized well. Connections to previous literature and broader issues were clear.  
  • Project had a *goal or a logical hypothesis* that was stated clearly and concisely; showed clear relevance.  
  • *Broader impacts* beyond project clearly stated. | • *Background information* was relevant, but connections were not clear.  
  • A project goal or a logical hypothesis was presented and was reasonably clear and concise.  
  • Broader impacts beyond project were present. | • *Background information* was relevant, but connections were not made.  
  • Questionable project goal or hypothesis was presented.  
  • Broader impacts beyond project were unclear. | • Little background information was included or connected.  
  • Questionable hypothesis was presented and was not well supported or the goal of the project was unclear.  
  • Broader impacts beyond project were absent. | • Background information was absent.  
  • Hypothesis or goal was inappropriate or not stated.  
  • Broader impacts beyond project were absent. |
| **Experimental Logic** | • Excellent choice of *experimental methods* to address hypothesis or project goals.  
  • Excellent *original thinking or innovation of technique*.  
  • Clear discussion of *controls or comparative groups*: all appropriate controls or comparative groups were included. | • Very good choice of *experimental methods* to address hypothesis or project goals.  
  • Very good *original thinking*.  
  • Clear discussion of controls or comparative groups; most controls or comparative groups were included. | • Good choice of *experimental methods* to address hypothesis or project goals.  
  • *Good original thinking*.  
  • Adequate discussion of controls or comparative groups; some significant controls or comparative groups were lacking. | • Experimental methods not appropriate to address hypothesis or project goals.  
  • *No original thinking*.  
  • Controls or comparative groups not adequately described; some controls or comparative groups missing. | • Experimental methods section missing.  
  • No original thinking.  
  • Serious lack of controls or discussion of controls. |
| **Results** | • Substantial amounts of high quality *data* were presented sufficient to address hypothesis or project goals.  
  • *Presentation of data* was clear, thorough, and logical. | • Substantial amounts of good data were presented sufficient to address hypothesis or project goals.  
  • Presentation of data was clear and logical. | • Adequate amounts of reasonably good data were presented to address hypothesis or project goals.  
  • Presentation of data was not entirely clear. | • Some data were lacking, or not fully sufficient to address hypothesis or project goals.  
  • Presentation of data was included, but unclear or difficult to comprehend. | • Results are not yet available or reproducible.  
  • Presentation of data was missing. |
| **Conclusions and Future Work** | • Reasonable *conclusions* were given and were strongly supported with evidence.  
  • *Conclusions were connected* to project goals or hypothesis and their relevance in a wider context was discussed. | • Reasonable conclusions were given and were supported with evidence.  
  • Conclusions were connected to project goals or hypothesis but their relevance was not discussed. | • Reasonable conclusions were given.  
  • Conclusions were not compared to project goals or hypothesis and their relevance was not discussed. | • Conclusions were given.  
  • Little connection of conclusions to project goals or hypothesis was apparent. | • Conclusions were missing.  
  • Conclusions were not connected to the project goals or hypothesis. |
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| Poster Board | • All expected **components** are present, clearly laid out, and easy to follow in absence of presenter.  
  • **Text** is concise, free of spelling or typographical errors; background is unobtrusive.  
  • **Figures and tables** are appropriate and labeled correctly.  
  • Photographs/tables/graphs improve understanding and enhance visual appeal. | • All components are present, but layout is crowded or confusing to follow in absence of presenter.  
  • Text is relatively clear, mostly free of spelling and typographical errors; background is unobtrusive.  
  • Most figures and tables are appropriate and labeled correctly.  
  • Photographs/tables/graphs improve understanding. | • Most expected components are present, but layout is confusing to follow in absence of presenter.  
  • Text is relatively clear, but some spelling and typographical errors; background may be distracting.  
  • Figures and tables not always related to text, or are not appropriate, and/or are poorly labeled.  
  • Photographs/tables/graphs limited and do not improve understanding. | • Some expected components are present, but layout is untidy and confusing to follow in absence of presenter.  
  • Text is hard to read due to font size or color, some spelling and typographical errors; background may be distracting.  
  • Figures and tables not related to text, or are not appropriate, and/or are poorly labeled.  
  • Photographs/tables/graphs limited and do not improve understanding. | • Some expected components are present, but poorly laid out and confusing to follow in absence of presenter.  
  • Text is hard to read, messy and contains multiple spelling and typographical errors; very poor background.  
  • Figures and tables are poorly done.  
  • Visual aids not used. |
| Knowledge of Project: Ability to Answer Questions | • Presenter **clearly states what is to be discussed**.  
  • Entire talk is **organized around defined goals** and has smooth transition between sections.  
  • Concluding portion of talk **re-emphasizes the goals** and **what was learned**.  
  • Presenter answers difficult **questions** clearly and succinctly. | • Presenter clearly states what is to be discussed.  
  • Entire talk is organized around defined goals and has smooth transition between sections.  
  • Concluding portion of talk re-emphasizes the goals and what was learned.  
  • Presenter answers most questions. | • Overall goals are not clear to the listener.  
  • Some sections of the talk are not clearly related and/or somewhat choppy transitions.  
  • Concluding portion of talk re-emphasizes the goals and what was learned.  
  • Presenter has some difficulty answering challenging questions. | • Overall goals are not apparent to the listener.  
  • Presentation moves off topic in a way that is not relevant or valuable.  
  • It was not possible to explain what was learned.  
  • Presenter has difficulty answering challenging questions. | • Overall goals are not apparent to the listener.  
  • Presentation moves off topic in a way that is not relevant or valuable.  
  • It was not possible to explain what was learned.  
  • Presenter does not understand questions. |