



# **Achieving Science & Engineering Fair Success – Creating an Impact – From Data Analysis to Display**

01/12/19



# Agenda

- The Scientific Notebook cont.
- Writing an Abstract
- Putting Together a Display
- Screening information
- Peer Mentoring



# Conclusions

- This is where you give the answer to your hypothesis
- Restate your Hypothesis, and then follow it with your findings
- Use the information from your Results/Data Analysis summary to support your Conclusion
- Note: Sometimes the results of your project do not support your hypothesis. This is okay! (Unexpected findings can often be used for additional experimentation)
- Make sure you can come up with reasons as to why the results were unexpected



## Results/Data Analysis

- Identify/discuss trends or patterns in data
- Compare/contrast the data
- If appropriate, calculate averages/mean, median, mode, and/or standard deviation as needed
  - Can summarize data as ratios or percents
- Statements need to be objective and ONLY based on the data. Save opinions for the Conclusion.



# Recommendations

- Explain possible experimental errors
- Detail how you would improve your project if you could
  - How would you change your procedure?
  - What would you NOT do again?
- If you were to do a continuation project what would you test?
- Are you planning on patenting/publishing your work?
- Be prepared to answer these questions, as judges love asking questions like these!



# Bibliography

- Page of references crediting sources used during research and experimentation process
- Must have at least 10 sources
- Cite book, electronic and personal sources

ex. internet citation:

AN INTERNET SOURCE:

Author(s)."Article Title." Name of web site. Date of posting. Name of institution/organization affiliated with site. Date of access <electronic address>.



## Appendix

- A section at the end of your work that contains information not appropriate in the primary text, but is still important
- Raw data including notes, logs, graphs, pictures, photographs etc.
  - Make sure to include KEEP all of your ORIGINAL RAW DATA. (Don't recopy!)
  - Include them as part of your appendix, or add a separate lab notebook with your display.
  - Raw data is extremely important because it shows your original findings and time stamps



## Raw Data

- Pure, unrefined raw data is stored here.
- Included in the appendix at the end of your notebook.
- Items include (Experiment values, Notes, Observations, Photos)  
all evidence of your project
- Data in numerical forms are best shown in it's numerical form
- Observations are best recorded in photo if possible to  
supplement description of event





# Writing an Abstract

- This is written LAST but will be first section of your notebook
- The abstract is brief, limited to 250 words
- Summarize your project
  - Hypothesis
  - General Procedure
  - Results and Conclusion
- Can be less technical than other sections of the notebook
- The most important part of your work!



# Putting Your Display Board Together



<b>Problem/Question</b>	<b>Project Title</b> (10 words or fewer)		<b>Results/Data Analysis</b>
<b>Background Research</b>	<b>Materials</b>	<b>Results</b> Data Table(s)      Graph(s)	
			<b>Conclusion</b>
<b>Hypothesis</b>	<b>Procedures</b>		
			<b>Significance</b>
<b>Variables</b>			



## Left Panel

Usually encompasses the beginning parts of the project report:

- Problem/Question: state clearly and concisely
- Background Research/Introduction: summarize the most important info
  - Can use bullet points
- Hypothesis



## Center Panel

- Usually the largest panel of the board
- Project Title on top (as big as possible)
- Materials and Procedures (can be combined)
- Majority of the panel is results
  - Include all relevant data tables, graphs etc. (use the data you put in your notebook); have captions
- Trends in your data should be easily identifiable to viewers
- Photographs recommended, but should not include direct face shots
  - Make sure to include captions



## Right Panel

- As the left side of the board is beginning, the right side is used for conclusive parts to your project
- Typical Sections:
  - Results/Data Analysis: objective summary, don't explain why
- Conclusions
- Recommendations/Significance
- Acknowledgements



## General Tips for the Board

- Make sure your board is presentable
- Less text and more images
- Use appropriate colors to make content readable and presentable
- All text, graphs, diagrams should be clear to see and easy to present (head height or judge's line of sight)
- Make sure graphs or important items aren't too high or low on the board.



## Fair Week Schedule

Tuesday, March 12th: Project Set-Up Day \*\*1-7pm, may come at any time

Wednesday, March 13th: Judging Day! \*\*Students present all day

Thursday, March 14th: Awards Ceremony \*\*Evening

Sunday, March 17th: Family Fun Day/Clean Up Day \*\*Boards must be cleaned up by 4pm





# Future Workshops!

- February 27th, 2019 4:40-7pm
  - Room 401-402
  - All about judging, what to expect at the fair, and practicing your presentations!