Presentation Outline:
- Manuscript Structure and Content
- Title
- Abstract
- Introduction
- Experimental Procedure
- Results and Discussion
- Conclusions and Recommendations
Title

The TITLE should:

- Summarize and be a concise statement of the main idea of the manuscript
- Identify the variables or theoretical issues under investigation and the relationship between them
- Be fully explanatory of the main topic when standing alone

- Use key words in the title – active verbs showing relationship or causality
Title cont’d.

- Avoid words that serve no useful purpose (e.g., method, results, a study of, an experimental investigation of)
- Avoid using abbreviations

Technical tips:
- Recommended length is no more than 12 words
- Should be typed in uppercase and lowercase, and centered
- Examples:
  - E2F1 stabilizes p53 and suppresses neovascularization in the ischemic myocardium
  - Development of Metastatic Precursor Lesions in Murine Pancreas following Mutant Kras Expression in Adult Pdx-1 Positive Cells
  - Well-defined nurse ID badge enhances patient’s ability to identify their nurse
Abstract

- A brief, comprehensive summary of the contents of the article
- Make the abstract:
  - **Accurate**: ensure it correctly reflects the purpose and content of the manuscript; do not include information that does not appear in the body of the manuscript
  - **Non-evaluative**: report rather than evaluate; do not comment on what is in the body of manuscript
  - **Coherent and readable**: use verbs rather than nouns and active rather than passive voice (e.g., investigated rather than an investigation of; authors presented the results rather than the results were presented)
  - **Concise**: make each sentence maximally informative; begin with the most important points; include only four or five most important concepts/findings/implications

- **NOTE**: The Abstract does not lead in to your Introduction – it is a stand-alone section of text
Abstract cont’d.

Tip: write AFTER you have written ENTIRE report

Pitfalls to avoid:

- Wordiness
- Providing too much or too little motivation
- Failure to include a relevant conclusion
- Abbreviations, jargon, or references to the literature, tables, or figures
- Claims that do not correspond to the findings in the article itself
Abstract: technical guidelines

- Consult the instructions to authors of the journal to which you plan to submit for specific instructions.
- Contains the following sections:
  - Introduction
  - Methods
  - Results
  - Conclusion/implementations
- The abstract is never more than 350 words.
- Begin the abstract on a new page of manuscript.
- Identity it with a running head and the page number.
- The label “Abstract” should appear in uppercase and lowercase letters, centered, and at the top of the page.
Introduction

- Organized as a funnel that begins with a definition of why the study was performed and ends with a specific statement of your research hypothesis/specific aims/objectives
- Introduce the problem
- Explore the importance of the problem
- Describe relevant scholarship
- State hypotheses and their correspondence to research design
- Before writing the Introduction, ask yourself the following questions:
  - Why is this problem important
  - How does this study relate to previous work in the area
  - What are primary and secondary hypotheses and objectives of study
Introduction cont’d.

➢ Introducing the problem
  ▪ Present the specific problem under study
  ▪ Describe the research strategy
  ▪ Summarize past evidence and gaps in the literature

➢ Exploring the importance of the problem
  ▪ State why the problem deserves new research
  ▪ Conclude the statement of problem with brief & formal statement of the purpose of the research
Methods

- Thoroughly describe how the study was conducted, including conceptual and operational definitions of the variables used in the study.
- Remember that the Methods section allows the reader to evaluate the reliability of the study and also replicate it.
- First step: Identify Subsections
  - Divide the Methods section into labeled subsections to make the paper more conventional and easy to follow.
  - Subsections may include: study design, patient selection, study procedures, statistical analyses.
Participan (subject) characteristics

- Describe research participants (sample) so that generalizing findings, making comparisons, and secondary data analyses is possible
- Detail the sample’s major demographics: age, sex, inclusion and exclusion criteria
- As a rule, describe the groups as specifically as possible, with particular emphasis on characteristics that may have bearing on the interpretation of the results

Sampling procedure (sample size estimate)

- Describe procedure for selecting participants, including sampling method, % of sample approached that participated, and # of participants who selected themselves into the sample (if applicable)
- Describe the setting and locations in which the data were collected as well as any agreements and payments made
Sample size, power, and precision

- Give the intended size of the sample and the achieved sample size
- State how the intended sample size was determined
- When applying inferential statistics, make note of the statistical power considerations associated with the tests of hypotheses and provide evidence that the study has sufficient power to detect effects of substantive interest
- Consider using confidence intervals to justify conclusions concerning effect sizes
Methods cont’d.

- **Measures and Covariates**
  - Include information that provides definitions of all primary and secondary outcome measures and covariates, including measures collected but not included in this report
  - Describe the methods used to collect the data
    - written questionnaires, interviews, scales, observations
  - Describe methods used to enhance the quality of measurements
    - training and reliability of evaluators
  - Describe the instruments used to collect the data
    - make sure to include instruments’ properties and evidence of validity
Methods cont’d.

- Specify Research Design
  - Explain whether subjects were placed into conditions that were manipulated, or in ones where they were observed naturalistically
  - Describe how participants were assigned to conditions: through random assignment or some other selection mechanism
  - Provide sufficient description of the study procedures to allow the reader to fully comprehend the complexity of the study

- Examples
Methods cont’d.

- Research manipulations or interventions
  - If manipulations or interventions were used in study, describe their specific content for both experimental and control groups (if applicable)
  - Describe the methods of manipulation and data acquisition
  - Provide a description of who delivered the intervention, including their level of professional training
  - Provide information about the setting where the intervention was delivered, the quantity and duration of exposure to the intervention, the time span taken for the delivery of the intervention, and the activities or incentives used to increase compliance
Results

- Summarize the collected data and analyze data relevant to the discourse that is to follow
- Report data in sufficient detail to justify conclusions
- Include results that run counter to expectation
  - Include small effect sizes/statistically nonsignificant findings when theory predicts large ones
- Provide dates that define recruitment period, follow-up, and primary sources of subjects
Results cont’d.

➢ Baseline data
  ▪ Provide baseline demographic and/or clinical characteristics of each group

➢ For studies reporting results of experimental manipulations/ interventions
  ▪ Provide evidence on whether interv. and manip. were delivered as intended
  ▪ Clarify whether analysis was by intent-to-treat
  ▪ Adverse events (AEs)
    • Detail all important AEs and/or side effects for each intervention group

➢ Missing data
  ▪ Describe methods for addressing missing data
 Results: statistics and data analysis

- Assume that the reader has a professional knowledge of statistical methods
- When reporting the results of inferential statistics / estimates of parameters or effect sizes:
  - Provide enough information – per-group sample sizes, frequencies and means for each category (if applicable), standard deviations
- For inferential statistical tests (e.g., t-test and chi square) include (when applicable):
  - Obtained magnitude or value of the test statistic
  - Degrees of freedom
  - Probability (P-value)
  - Size and direction of the effect
  - Measure of variability/standard error and measure of effect size
  - Confidence intervals (CIs)
    - Use a single CI (e.g., 95% CI) throughout the manuscript
Discussion

- Evaluate, examine, interpret, and qualify the Results, then draw interferences and conclusions from them.
- Start with a clear statement of whether you support or nonsupport your original hypotheses, primary and secondary.
  - For nonsupport: offer post hoc explanations.
  - Contextualize, confirm, clarify conclusions using similarities and differences between your results and the results of others.
- Take into account weaknesses or limitations such as:
  - Sources of potential bias and other threats to internal validity.
  - Imprecision of measures.
  - Overall number of tests.
  - Observed effect sizes.
Discussion cont’d.

- Acknowledge limitations and address alternative explanations of the results
- Discuss the generalizability, or external validity
  - Take into account differences between target population and accessed sample
  - For interventions, discuss characteristics that can more or less apply to other circumstances not included in the study
Discussion cont’d.

- End with reasoned and justifiable commentary on the importance of your findings
  - Why problem is important, what larger issues may hinge on the findings, and what propositions by the extrapolation to other issues are confirmed
  - What is the theoretical, clinical, or practical significance of the outcomes, and what is the basis for these interpretations?
  - What real life phenomena might be explained or modeled by the results?
  - Are applications warranted based on this research?
  - What problems remain unsolved or arise anew because of the findings?
References

- American College of Physicians: Effective Clinical Practice
  - http://www.acponline.org/clinical_information/journals_publications/ecp/mayjun99/welch.htm

- Stanford Medical School
  - http://medblog.stanford.edu/lane-faq/archives/Ms.Writing_1.ppt

- Dartmouth-Hitchcock: Writing Peer-reviewed biomedical manuscripts
  - http://cancer.dartmouth.edu/res/writing_manuscripts.html

- Journal of Strength and Conditioning Research

- Previous internal Advocate research department presentations
Presentation Feedback

Thank you for your review.

If you would like to provide feedback on the content of the presentation, please complete the short survey which can be found at this link: [Presentation Evaluation Survey](#)

- Please note the survey should not take more than 5 minutes to complete.

Thank you in advance for completing the survey!
Thank You!