Office of Undergraduate Research (OUR)
Prairie View A&M University

Guidelines: Developing Your Abstract & Poster

Grace Abolaji, Ph.D.

What is an abstract? (Publication Manual of the APA, 7th Ed., 2020)

- "A brief, comprehensive summary of the contents of the paper"

  (Publication Manual of the APA, 7th Ed., 2020, pg. 73)

- GOOD abstracts have these qualities:
  - **Accurate** – "…reflects the purpose and content of the paper."
  - **Nonevaluative** – Not an "opinion paper;" reports on the data
  - **Coherent and Readable** – Specific, clear, active, and deliberative writing
  - **Concise** – Includes the top 4-6 important "concepts, findings, or implications"

The Four C's - Reiterated

Abstracts should be:

- **Complete**
  - Covers the major parts of the project
- **Concise**
  - Avoid excess wordiness, unnecessary information, and narration
    - For example, "It is my opinion that/I have concluded/the main point supporting my view concerns/or certainly there is little doubt as to..."
  - Meets the maximum word count – **300 words**
- **Clear**
  - Readable
  - Well organized
  - Avoid jargon/slang – overly technical language
  - NO spelling or grammatical errors
    - Use Word's "ABC Spelling & Grammar" check under the "Review" tab **OR**
    - Download the free program called Grammarly (https://www.grammarly.com/)
- **Cohesive**
  - Flows smoothly

Abstract Formatting Instructions

- Use either Times New Roman or Arial font
- 12 pt. font, Single-Spaced
- Center and **bold** the title
- Add space below title, and then list authors' information
  - Underline the primary author
  - Put "(Faculty Mentor)" after faculty mentor's name [e.g., Grace Abolaji, Ph.D. (Faculty Mentor)]
- Left-justify the body of the abstract
- Within the abstract, add section terms in **bold** (e.g., **Background, Aims or Objectives, Methods and Materials, Results, Conclusion**)
- Add space below abstract
- List approximately five "Keywords"

Format: Quantitative Data (1 of 3)

(Publication Manual of the APA, 7th Ed., 2020, pp 77-78)

- Abstracts detailing **QUANTITATIVE DATA** should meet the following format:
  - **Background, Objectives/Aims:**
    - State the problem under investigation, including main hypotheses.
  - **Participants:**
    - Describe subjects or participants.
    - Specify pertinent characteristics for the study
    - Animal Research: Include genus and species
    - Describe participants in greater detail in the BODY of the paper – not the abstract

Format: Quantitative Data (2 of 3)

(Publication Manual of the APA, 7th Ed., 2020, pp 77-78)

- **QUANTITATIVE DATA Abstracts**
  - **Study Methods and Materials:**
    - Research design (e.g., experiment, observational study, etc.)
    - Sample size (*n=XX)*
    - Materials used (e.g., instruments, apparatus, etc.)
    - Outcome measures
    - Data-gathering procedures, including source of secondary data. Indicate if study is secondary data analysis.

Format: Quantitative Data (3 of 3)

(Publication Manual of the APA, 7th Ed., 2020, pp 77-78)

- **QUANTITATIVE DATA Abstracts**
  - **Findings/Results**
    - Report findings.
    - Include effect sizes, confidence intervals, or statistical significance levels
  - **Conclusion**
    - State conclusion – beyond just the results
    - Report implications or applications
  - **Identify five keywords**

Quantitative Data Abstract Example

Student presentation at the 2019 14th Annual PVAMU Research Symposium

(Modified for this training)

The Student-Instructor Tango: Understanding the relationship between Rapport, Self-concept, and Course engagement

Daniel Vega, Riley Martin, Luke Whiteley, Connor Smith
Katherine Wickes, Ph.D. and Benjamin White (Faculty Advisors)

Blinn College

Background: Student success has become a key goal of community colleges, but what factors drive success within a classroom? Prior research found that both teacher behaviors and student traits impact success within a classroom (Komarraju, 2013; Lammers & Gallaspy 2013). Students' perception of their instructor's communication skills, positive rapport, and are caring and supportive positively impact their ratings of instructors and course performance (Lammers & Gallaspy 2013; Keeley, Smith, & Buskist, 2006; Wilson, Ryan, & Pugh, 2010). Prior studies often measure student success in terms of final course grade and fail to account for student variables that may impact success (Komarraju, 2013). **Aims:** Current research examines the relationship between instructor rapport, academic self-concept, and course engagement in community college students. **Materials and Methods:** Participants were 194 community college students who completed a 96-question survey to measure academic self-concept, ratings of teacher behaviors, instructor rapport, and course engagement. **Results:** Students' academic self-concept was related to their global course engagement ($r(193) = 0.20$, $p < .05$). Instructor behaviors and traits were related to the level of engagement that students reported. Instructor rapport was positively related to both global course engagement ($r(193) = 0.18$, $p < .05$), and course level engagement ($r(193) = 0.38$, $p < .05$). Rapport related to how students perceived their instructors; high levels of rapport correlated with endorsement of positive teacher behaviors ($r(193) = 0.65$, $p < .05$), and student ratings of academic self-concept ($r(193) = 0.17$, $p < .05$). Students' GPA related to academic self-concept ($r(193) = 0.21$, $P < .05$) but did not relate to rapport or teacher behavior. **Conclusion:** These findings indicate that positive teacher attributes can strengthen student engagement within a course and that engagement can have positive carryover effects into other courses. Future research is needed to examine if there are specific teacher behaviors that are most likely to impact rapport and to examine the findings apply to other settings, such as online classes.

Keywords: Student Success, Rapport, Self-Concept, Course Engagement

Quantitative Data Abstract Example

Student presentation at the 2019 14th Annual PVAMU Research Symposium

(Modified for this training)

The Evaluation of Vegetable Amaranth in Southeast Texas

Kolade Adelaja, Eric Obeng, Aruna Weerasooriya, Godson Osuji
Peter A.Y. Ampim, Ph.D. (Faculty Advisor)

College of Agriculture and Human Sciences, Prairie View A&M University

Background: Vegetable amaranth (*Amaranthus* spp.) is a leafy vegetable with high nutritive value, and has the ability to thrive under drought conditions. It is also a niche crop with tremendous potential as an alternative crop for small-scale producers in Texas. **Objective:** The objective of this study was to evaluate five varieties of vegetable amaranth and to identify suitable varieties for cultivation in Texas. **Materials and Methods:** Amaranth varieties including Red Leaf, White Leaf, Red Beauty, Red Garnet, and All Red were planted in spring 2018 in a completely randomized design with three replications. The amaranth was broadcast seed at 1g per $1m^2$ plots carved out in plastic mulch covered beds supplied with drip irrigation. Harvesting was done every other week, 4 weeks after planting. Data collected including SPAD meter readings, insect damage score, and yield per plant was subjected to ANOVA at 5% significance level using JMP software. **Results:** Leaf chlorophyll content for Red Beauty was significantly greater than the other varieties. Red Leaf was significantly less susceptible to insect damage compared to All Red and White Leaf, and produced significantly more yield. Red Beauty and Red Garnet were intermediate in their susceptibility to insect damage and yield among the amaranth varieties evaluated. There was a significant negative correlation between insect damage score and yield per plant (p=0.0099) indicating that the higher the variety is susceptible to insect attack the lower the yield potential. **Conclusion:** These results suggest that Red Leaf amaranth could be the variety most suited for the humid and hot southwest Region of Texas.

Keywords: Amaranth, Red Leaf Amaranth, Southeast Texas, Small-Scale Farmers, JMP software

Format: Qualitative Data

(Publication Manual of the APA, 7th Ed., 2020, p. 95)

- Abstracts detailing **QUALITATIVE DATA** should meet the following format:
  - **Objectives:**
    - State the problem/question/objectives under investigation
  - **Indicate**
    - Study design (e.g., interview, focus groups, observation, etc.)
    - Theoretical approach (unless this is too complex to explain in the allotted word count)
    - Types of participants or data sources
    - Analytic strategy – How will you analyze the data
    - Main results/findings
    - Main implications or significance
  - **Identify five keywords**

Qualitative Data Abstract Example

Kaveh, O., & Peyrovi, H. (2019). Exploring Iranian obese women's perceptions of barriers to and facilitators of self-management of obesity: A qualitative study. *Journal of Family Medicine and Primary Care, 8*(11), 3538-3543

Exploring Iranian obese women's perceptions of barriers to and facilitators of self-management of obesity: A qualitative study

Omolhoda Kaveh[1], Hamid Peyrovi[2]
[1] International Campus, Department of Medical-Surgical Nursing, Iran University of Medical Sciences, [2] Nursing Care Research Centre, Iran University of Medical Sciences, Tehran, Iran

Abstract

Background: Despite the clinical importance of self-management for obesity, poor compliance or noncompliance with the treatment regimen is a prevalent and persistent problem concerning people with obesity. **Aims**: The aim of this study was to explore Iranian obese women's perceptions regarding the barriers to and facilitators of self-management of obesity. **Materials and Methods:** In this qualitative study, the participants were selected through purposeful sampling and the data were collected using semistructured interviews and focus groups between July 2017 and September 2018. Nineteen participants between the age range of 28–50 years and mean age of 38.56 years were interviewed. A focus group with seven participants was conducted to reach data saturation. All the interviews and the focus group were transcribed verbatim and the data were analyzed using constant comparative method. **Results**: The perceived barriers to obese women's self-management for obesity were identified and classified into four main categories: (I) restrictions, (II) the pressures of being in the group, (III (temptation, (IV) resonators. In addition, seven main categories emerged as facilitators of obese women's self-management for obesity: (I) achieving self-awareness, (II) positive consequences for weight loss success, (III) positive outcomes of exercise and physical activity, (IV) peers experience, (V) correct and logical program, (VI) autonomy and empowerment, and (VII) having supporting umbrella. **Conclusion**: This qualitative research provided a range of facilitators and barriers to self-management of obesity perceived by an obese woman to improve our understanding of the complex nature of self-management of obesity. Healthcare providers may consider this issue while designing and implementing appropriate interventions to upgrades woman's ability for self-management of obesity.

Keywords: Obesity, obesity self-management, qualitative research, women

Format: Mixed Methods (1 of 2)

(Publication Manual of the APA, 7th Ed., 2020, p. 106)

- Abstracts detailing **Mixed Methods** should meet the following format:
  - **Design**
    - Mixed Methods design (e.g., Triangulation, Embedded, Explanatory, Exploratory, etc. design; Creswell, 2006, Chapter 4)
  - **Objectives**
    - Describe the problem addressed
    - Describe the purpose for using Mixed Methods
  - **Participants**
    - Types of participants or sources of data

Format: Mixed Methods (2 of 2)

(Publication Manual of the APA, 7th Ed., 2020, p. 106)

- **Mixed Methods (con't)**
  - **Study Methods**
    - Analytic strategy: Describe your approach(es) to the inquiry
    - Describe how the intersecting approaches were combined
  - **Results**
    - Main results/findings
  - **Conclusion**
    - Report major implications and significance
  - **Identify five keywords**

Mixed Methods Abstract Example

Roelofs, S., Edwards, N., Viehbeck, S., & Anderson, C. (2019). Formative, embedded evaluation to strengthen interdisciplinary team science: Results of a 4-year, mixed methods, multi-county case study. *Research Evaluation, 28*(1), 37-50.

(Modified for this training)

Formative, embedded evaluation to strengthen interdisciplinary team science: Results of a 4-year, mixed methods, multi-country case study

Susan Roelofs[1], Nancy Edwards[1], Sarah Viehbeck[2,3] and Cody Anderson[4]

[1] School of Nursing, University of Ottawa, 1 Stewart St., Room 212, Ottawa, ON K1N 6N5, Canada, [2] School of Public Health and Health Systems, University of Waterloo, 200 University Ave W, Waterloo, ON N2L 3G1, Canada, [3] Interdisciplinary School of Health Sciences, University of Ottawa, 1 Stewart St., Room 212, Ottawa, ON K1N 6N5, Canada; and [4] Research Advisor, Public Safety Canada, 269 Laurier Avenue West, Ottawa, ON K1A 0P8, Canada

Design and Objectives: Evaluation of interdisciplinary, team science research initiatives is an evolving and challenging field. This descriptive, longitudinal, mixed methods case study examined how an embedded, formative evaluation approach contributed to team science in the interdisciplinary Research into Policy to Enhance Physical Activity (REPOPA) project, which focused on physical activity policymaking in six European countries with divergent policy systems and researcher–policymaker networks. We assessed internal project collaboration, communication, and networking in four annual data collection cycles with REPOPA team members. **Methods:** Data were collected using work package team and individual interviews, and quantitative collaboration and social network questionnaires. Interviews were content analyzed; social networks among team members and with external stakeholder were examined; collaboration scores were compared across 4 years using analysis of variance (ANOVA). Annual monitoring reports with action recommendations were prepared and discussed with consortium members. **Results:** Results revealed consistently high response rates. Collaboration and communication scores, high at baseline, improved slightly, but ANOVA results were nonsignificant. Internal network changes tracked closely with implementation progress. External stakeholders were primarily governmental, with a marked shift from local/provincial level to national/international during the project. Diversity (disciplinary, organizational, and geopolitical) was a project asset influencing and also challenging collaboration, implementation, and knowledge translation strategies. **Conclusion:** In conclusion, formative evaluation using an embedded, participatory approach demonstrated utility, acceptability, and researcher engagement. A trusting relationship between evaluators and other project members built on joint identification of team science objectives for the evaluation at project outset, codeveloping guiding principles, and encouraging team reflexivity throughout the evaluation.

Keywords: formative evaluation; embedded evaluation; team science; interdisciplinary research; collaboration; diversity

Before submitting your abstract

- Make sure it is no more than 300 words.
- Provide just the essential information
- Use language understandable by a non-specialist
- Avoid writing for an audience that includes only you and your professor
- Your faculty mentor work MUST approve the abstract before submitting it online
- Only one abstract per person is allowed

Poster Presentation (Youngblood, 2019)

- **Purpose**
  - Share knowledge
  - Invite feedback
- **Instructions**
  - Must be visually appealing
  - Include:
    - Graphs
    - Tables
    - Illustrations
- **Instructions (con't)**
  - Clear hypothesis or objective(s)
    - Give the reason for the study
  - No grammatical errors
  - Make conclusions from the study
  - Provide future ideas

Poster Organization Sample

Title Goes Here Title Goes Here Title Goes Here Title Goes Here

Student One, Student Two and Some Professor, Ph.D.

Some Department, Some University, Some City, Some State Zip

Abstract

Use this slide as a template. Cut and paste to fill in the boxes.

Introduction

Objective

Hypothesis

Methods

Results

TABLE or Graph

Results

TABLE or Graph

Summary

Future Studies

References

Acknowledgements

Developing Your Poster in PowerPoint

- Online instructions regarding how to create you poster : https://guides.lib.unc.edu/posters/pptwindows2016
  - Launch PowerPoint and select a Blank Presentation
  - Delete the existing boxes on the presentation slide – You will create your own
  - Click on the Design tab and select "Slide Size" on the "Customize" tab
  - Enter the size of your poster: 42 inches for Width and 33 inches for Height
  - Click "OK"
  - Add your individual text boxes using the "Insert" tab
- Time to create!
- Contact Center for Instructional Innovation and Technology Services (***CIITS***)

Center for Instructional Innovation and Technology Services (***CIITS***)

- Please visit the CIITS site for standards and a template. https://www.pvamu.edu/dlearning/poster-printing/
- This office needs at least two weeks to prepare a poster.
- Your advisor must approve.
- You must submit use the above link to request your poster. Teach author must request their own poster and follow the guidelines. The symposium committee does not print posters.

Example of a Poster

ERN Conference Washington, D.C. 2019

Acetic acid, Eucalyptus Oil and Okanin Extract as a Viable Organic Herbicide Cocktail

Chonique Long and Yolander Youngblood, Ph.D.

Department of Biology, Prairie View A & M University, Prairie View, TX 77446

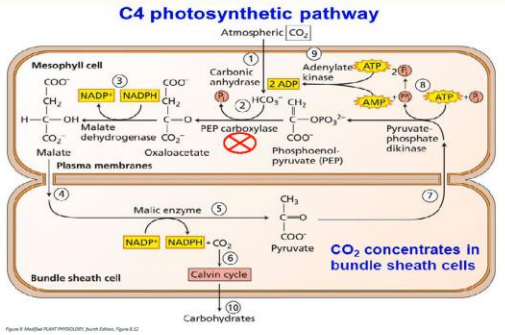
PRAIRIE VIEW A&M UNIVERSITY

Abstract

Certain species of *Amaranthus* are common weeds that have adaptive abilities that give them competitive advantages and invasive tendencies. Their high seed production, seed viability, quick growth rate, and C4 metabolism have allowed some of the species, like *Amaranthus palmeri*, to evolve strains that are resistant to traditional herbicides. This has led to additional soybean, corn, and cotton crop losses. For this investigation, different concentrations of acetic acid, eucalyptus oil, and okanin extract (from *Bidens pilosa*) were combined in a cocktail to test the hypothesis that the combination of the unique characteristics of each organic herbicide should safely and effectively deter *Amaranthus* growth, at low concentrations, but not affect crop yield for cotton, corn or soybean. To complete this study, twelve pots per plant species/strain were filled with field soil. The first six pots contained the control set for comparison and the next six pots contained the sprayed set. The control and sprayed sets both contained approximately 100 seeds of *Amaranthus species*. The cocktail contained 5% glacial acetic acid, 0.2% eucalyptus oil, 17.65% okanin extract, 0.1% of Tween 20, and 2.4% DMSO in DI water. The organic cocktail significantly decreased the germination rates of Resistant *A. palmeri* (from 7% to 3%), Susceptible *A. palmeri* (from 19% to 4%), *A. viridis* (from 45% to 5%), and *A. tricolor* (10% to 3%). After daily applications of the cocktail, sprouts that did emerge died within 5 days of emerging from the soil. This cocktail should be a viable organic herbicide option, especially for susceptible *A. palmeri*. In conclusion, due to the components availability and low cost, the proposed organic herbicide cocktail is a cheaper and effective alternative to traditional herbicides.

Introduction

The alternative organic herbicide cocktail: acetic acid, Eucalyptus oil, and Okanin have separately shown substantial results in controlling the growth of Amaranthus species. The acetic acid removes the epicuticular wax on leaves, thereby ceasing plant's ability to retain proper moisture levels. The selective Eucalyptus volatile oil has allelopathic potential against *Amaranthus* by inhibiting growth and inducing oxidative stress in roots, destroying chlorophyll, and reducing seed germination. Another selective herbicide Okanin, obtained from *Bidens pilosa*, inhibits Phosphoenolpyruvate carboxylase (PEPC).



Results

Figure 1: An adult *A. palmeri* (20cm) is sprayed with cocktail of acetic acid, Eucalyptus oil, and Okanin effects were monitored at intervals. (Left to Right) Adult plant is fully erect before cocktail is applied; 3 Hours after application plant shows visible droop, wilting, and spots of lighter discoloration appear on leaves; 5 Days after application most leaves wilted along with parts of the stem.

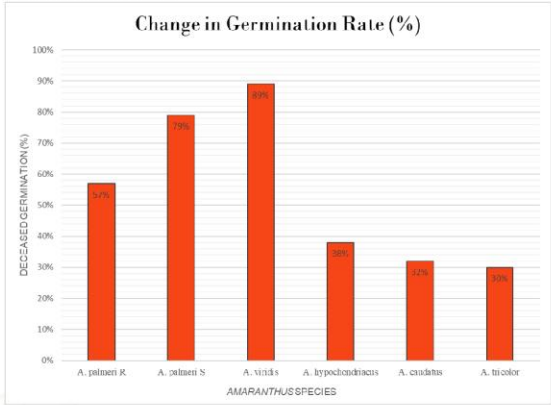


Figure 2: The change in germination rate (percentage) of *Amaranthus* species when cocktail is applied after an 8 day period.

Results (cont.)

- Figure 2 presents the change in germination rates of six types of *Amaranthus* species.
- The largest decrease in germination rates are *A. viridis,* Susceptible *A. palmeri,* and Resistant *A. palmeri*.
- The lowest decease in germination percentages are *A. hypochondriacus*, *A. tricolor*, and *A. caudatus*.

Conclusion

- The Cocktail displays promise as an alternative herbicide compared to Glyphosate.
- While Glyphosate inhibits only the shikimic acid pathway, The cocktail inhibits the C4 pathway, pre-emergence, and moisture retention.
- If used with nonherbicidal methods of management, the effect of *Amaranthus* on agriculture crops will decrease.
- Due to the availability and low cost, it may be a cheaper alternative to traditional herbicides.
- Based on research studies of each individual compound the combination of the three compounds at low concentrations should be effective at controlling *Amaranthus* growth with minimal environmental buildup.

References

Kaur, S., Singh, H. P., Batish, D. R., & Kohli, R. K. (2011). Chemical characterization and allelopathic potential of volatile oil of eucalyptus tereticornis against amaranthus viridis. *Journal of Plant Interactions, 6*(4), 297-302. doi:10.1080/17429145.2010.539709

Nguyen, G. T. T., Erlenkamp, G., Jäck, O., Küberl, A., Bott, M., Fiorani, F., . . . Groth, G. (2016). Chalcone-based selective inhibitors of a C4 plant key enzyme as novel potential herbicides. *6*, 27333. Retrieved from http://dx.doi.org/10.1038/srep27333

O'leary, B., Park, J., & Plaxton, W. (2011). The remarkable diversity of plant PEPC (phosphoenolpyruvate carboxylase): Recent insights into the physiological functions and post-translational controls of non-photosynthetic PEPCs. *Biochemical Society, 436*, 15-34. doi:10.1042/BJ20110078

Smith-Fiola, D., & Gill, S. (2017). Vinegar: An alternative to glyphosate? *The University of Maryland Extension*,

Stallknecht, G., & Schulz-Schaeffer, J. (1993). Amaranth rediscovered. *New Crops.Wiley, New York*, , 211-218.

Ward, S. M., Webster, T. M., & Steckel, L. E. (2013). *Palmer amaranth (amaranthus palmeri): A review* Weed Science Society of America. doi:10.1614/WT-D-12-00113.1

Acknowledgements

I would like to thank the SREP for the opportunity to research, along with Dr. Thompson for her help with supplies and instructions on equipment. I would also like to thank Dr. Moore, Dr. Ashley, and Dr. Giles for their assistance with certain lab equipment and supplies. And lastly, like to acknowledge the staff at Mercer Botanical Gardens who granted access into their grounds to obtain *Bidens pilosa*.

Questions?

- First speak with your mentor – Remember – They **MUST** approve the abstract, poster and/or presentation!
- If that doesn't help, contact us
  - Grace Abolaji, gtabolaji@pvamu.edu