

Making an Effective Research Poster

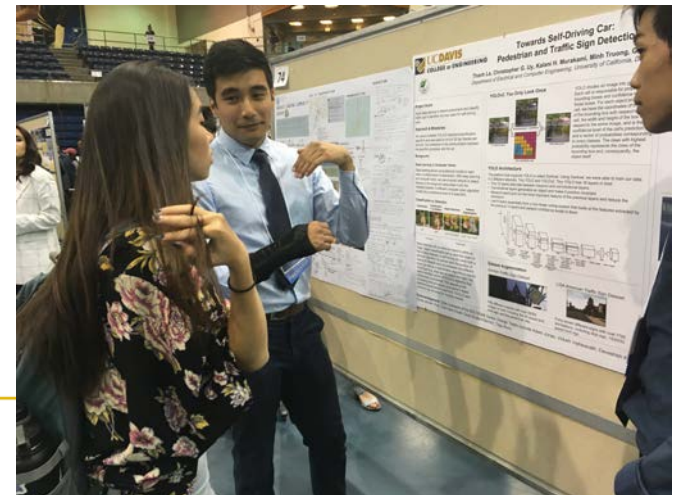
Elizabeth M. Nuñez
Assistant Director
Undergraduate Research Center



Why present a research poster?



- Great experience for first time presenters
- Experience presenting your research in a formal setting
- Get feedback from peers, faculty, and other experts
- Share ideas and learn from others
- Network with in your area of study
- Enhance your resume





What is a Research Poster?

- A summary of research
- A way to share ideas and generate discussion
- A visual display
- Includes a mixture of text, graphs, pictures, tables, etc.





Purpose of a Research Poster?

- Video: How to Design a Research Poster Part I



<https://www.youtube.com/watch?v=WCKhmKeAXY0>



Components of a Research Poster

- Title
 - Authors and Institutional Affiliation
- Abstract
- Introduction
- Methods
- Results/Findings
- Discussion/Conclusions
- Acknowledgements
- References
- Contact Information

**Remember that posters may
take different formats**

Research Poster Template



	Poster Title <i>Student Name(s):</i> <i>Faculty Sponsor:</i> University of California Davis	
Abstract	Results	Discussion
Introduction	Conclusions	
Methods	Acknowledgments	



Poster Title

Student Name(s):
Faculty Sponsor:
University of California Davis



Abstract

Discussion



Title: Keep it short, 10 words or less.

Introduction

Conclusions

Methods

Acknowledgments



Poster Title

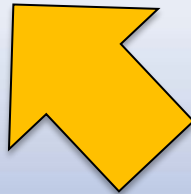
Student Name(s):
Faculty Sponsor:
University of California Davis



Abstract

Results

Discussion



Introduction

Conclusions

Methods

Acknowledgments

Abstract: Should be concise and to the point, including the essential components of research. (not required for URC Conference – use an introduction)



Poster Title

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Abstract

Results

Discussion

Introduction

Conclusions

Methods

Acknowledgments

Introduction: Introduce your topic or issue, what is the purpose of your work, and provide any critical information needed for the audience to understand your research



Poster Title

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Abstract

Results

Discussion

Introduction

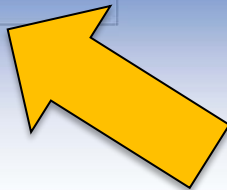
Conclusions

Methods

Acknowledgments

Methodology:

This section outlines the methods, procedures, data collection process, and materials for your research.





Poster Title

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Abstract

Results

Discussion

Introduction

Conclusions

Methods

Acknowledgments

Results/Findings:

Outline the key findings of your research.

Utilize visual aspects of your data to support your findings such as quotes from interviews, charts, tables, or graphs that summarize the data.



Poster Title

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Abstract

Results

Discussion

Introduction

Discussion/Conclusion: Briefly review the purpose of your research, key findings, and most importantly for this section discuss why your work is relevant and important, and the future work if relevant.

Conclusions

Methods

Acknowledgments



Poster Title

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University of California Davis



Abstract

Results

Discussion

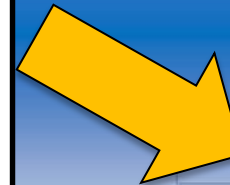
Introduction

Conclusions

Methods

Acknowledgements: Credit all individuals who have provided you with support in completing this work, including any funding support.

References: If any sources are cited, include a reference list, this can usually be in a smaller font



Acknowledgments



Research Poster Best Practices

- Video: How to Design a Research Poster Part II



https://www.youtube.com/watch?v=kD_zCBT3GUk

Examples of Research Posters



If you can read this you must be nocturnal...

Read about this, and wonder at others.

Take advantage of your nocturnal eyes.

Abstract

Abstract text block containing summary information about the research study, including objectives, methods, results, and conclusions. This section provides a concise overview of the entire poster.

Introduction

Introduction text block providing background information and context for the research. It typically includes a brief overview of the field and the specific problem being addressed.

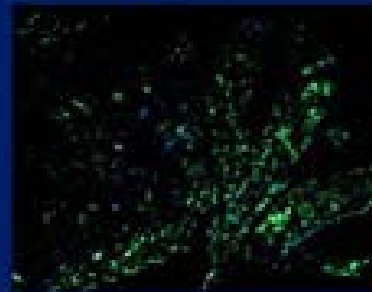
Outcomes

Outcomes text block detailing the results of the study. This section often includes data, figures, and tables that support the findings of the research.

Hypothesis

Hypothesis text block stating the research hypothesis or the expected outcome of the study. This section typically includes a clear statement of the research question and the predicted results.

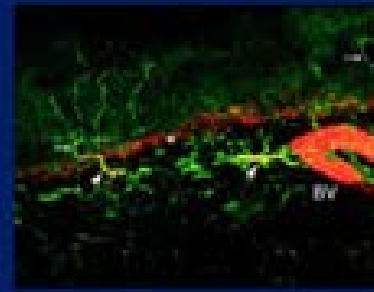
Results



Methods & Materials

Methods & Materials text block describing the experimental procedures and materials used in the study. This section provides a detailed account of the research methodology, including the design, participants, and data collection methods.

Results



Methods & Materials

Methods & Materials text block describing the experimental procedures and materials used in the study. This section provides a detailed account of the research methodology, including the design, participants, and data collection methods.

Discussion

Discussion text block providing an interpretation of the results and their implications. This section typically includes a comparison of the findings with existing literature and a discussion of the study's limitations and strengths.

Conclusion

Conclusion text block summarizing the main findings of the study and providing a final statement on the research. This section typically includes a brief overview of the study's objectives and a final statement on the significance of the findings.

References

References text block listing the sources of information used in the study. This section typically includes a list of references in a standard format, such as APA or MLA.

Acknowledgements

Acknowledgements text block expressing gratitude to the individuals or organizations that supported the research. This section typically includes a list of names and a brief statement of appreciation.

Examples of Research Posters





PODS IN SPACE EFFECT OF ZERO-GRAVITY AND AD LIBITUM FEEDING ON WEIGHT GAIN IN *CAVIA PORCELLUS*



Colin B. Purrington*

6673 College Avenue, Swarthmore, PA 19081 USA

ABSTRACT:

One primary concern of space flight is a potential deterioration of health, a serious problem for a growing number of space flights in the world. In many cases, it is a combination of diet, gravity, weight, and other factors that can lead to health deterioration. One of the most serious health problems of space flight is the loss of body mass. After weeks in space, astronauts are found to have lost significant weight. This is a serious problem because weight is a key factor in determining the health of an astronaut. We found that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed. We found that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed.

INTRODUCTION:

The human body is a complex system, and the effects of space flight on the body are not fully understood. One of the most serious health problems of space flight is the loss of body mass. After weeks in space, astronauts are found to have lost significant weight. This is a serious problem because weight is a key factor in determining the health of an astronaut. We found that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed.

MATERIALS AND METHODS:

Our research was conducted in the International Space Station (ISS) during the STS-107 mission. We used a variety of methods to measure the weight of the astronauts, including a scale and a body composition analyzer. We also used a variety of methods to measure the food intake of the astronauts, including a scale and a food diary.

RESULTS:

We found that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed. We found that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed.

CONCLUSIONS:

Our research shows that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed. We found that astronauts who were in space for 10 days lost an average of 10% of their body weight. This is a significant loss of weight, and it is a problem that must be addressed.

ACKNOWLEDGEMENTS:

I am grateful for the support of the National Aeronautics and Space Administration (NASA) and the Johnson Space Center. I am also grateful for the support of the Swarthmore College and the Swarthmore College Physics Department.

LITERATURE CITED:

1. NASA, "The Human Body in Space," NASA Technical Report, 1970.
2. NASA, "The Human Body in Space," NASA Technical Report, 1970.
3. NASA, "The Human Body in Space," NASA Technical Report, 1970.

Examples of Research Posters



Active Video Game Use and its Effects on Sedentary Behaviors

Draycen D. DeCator, M.A., Yvette Ramirez, & Jocelyn Smith Carter, Ph. D.

DePaul University



Introduction

Despite a lot of research attention, the obesity epidemic in United States youth is a continuing problem (Centers for Disease Control and Prevention, 2012). The problem is receiving attention from researchers hoping to reverse the trend of increasing Body Mass Indices (BMI's). An area of focus revolves around the use of active video games (AVG's) to increase physical activity levels in youth (e.g., Maddison, Mhurchu, & Jull, 2012). Having an understanding of the way in which AVG's can help decrease BMI can lead to the creation of AVG's with an increased likelihood of being played, and can thus increase the number of youth that will benefit from the game.

Results from previous studies using AVG's have shown that children given an AVG spent less time playing sedentary video games and spent more time playing AVG's (Mhurchu et al., 2008). These children also had lower waist circumferences compared to the control group that did not receive an AVG. In a review by Active Healthy Kids Canada, the results did not support AVG's as a strategy to help children be more physically active (Chaput et al., 2013), but suggested that AVG's may help children to reduce sedentary time. Therefore, youth with high levels of baseline sedentary behaviors may benefit most from AVG use. The success of introducing AVG's will also likely depend on characteristics of the youth, such as temperament (Wu, Dixon, Dalton, Tudver, & Liu, 2011). That is, the findings of these studies may have been mixed because of relevant variables not being taken into consideration such as baseline sedentary levels and temperament (e.g., surgency/high intensity pleasure seeking).

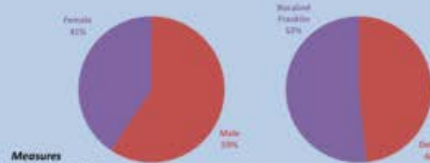
The current study researched: 1) whether sedentary time, AVG use, and levels of surgency predicted BMI, and 2) if any interactions were present.

Methods

The Active Project (TAP) for Kids is a broader research project being conducted by DePaul University and Rosalind Franklin University. TAP's aim has been to help understand what makes kids more likely to play active video games (AVG's), and how they can be encouraged to be more physically active through the use of AVG's.

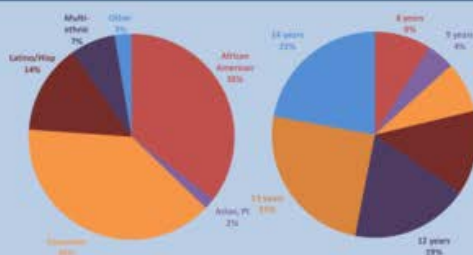
Participants

Participants in the current study consist of a subset of youth from the TAP for Kids project that had complete data for all study variables ($n = 96$). Participants for the study were youth between the ages of 8 and 14 from the Chicago area. The study measured sedentary time, AVG use, temperament, and BMI of each child.



Measures

- Sedentary time
 - Self-report
 - 6 items (3 tasks, weekdays and weekend days)
 - Combined for weekly average time
- AVG use
 - Self-report
 - Time during one week
- Temperament
 - Early Adolescent Temperament Questionnaire - Revised (EATQ-R; Rothbart, Ellis, Rosario Rueda, & Posner, 2003)
 - 6 items for surgency subscale
 - Example: "I would not be afraid to try a risky sport, like deep-sea diving"



Results

Data Analysis

Preliminary MANCOVAs were run to determine whether group differences existed (see Table 1). Hierarchical multiple regression was conducted to test the complete model (see Table 2)

Preliminary Analyses (Group Differences)	
	Gender
AVG use	$F(1, 92) = 0.002$
Sedentary time	$F(1, 92) = 4.53^*$
Surgency	$F(1, 92) = 0.01$
BMIz	$F(1, 92) = 4.20^*$
	Agency
AVG use	$F(1, 92) = 7.82^{**}$
Sedentary time	$F(1, 92) = 1.12$
Surgency	$F(1, 92) = 2.53$
BMIz	$F(1, 92) = 1.89$

Table 1. Preliminary analyses of group differences.

Note. Controlling for age; * $p < .05$; ** $p < .01$.

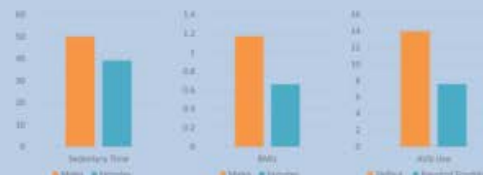


Figure 1. Bar graphs of significant group differences.

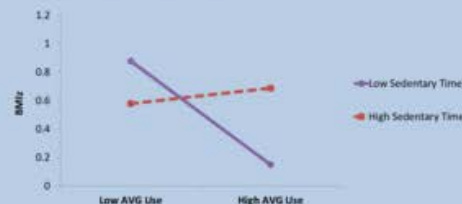


Figure 2. Simple slopes of interaction.

Note. * Difference between slopes: $p < .05$.

Hierarchical Linear Regression Models			
Predictors	ΔR^2	β at step	Final β
Step 1 (R^2)			
Child sex	.11	.22*	.19
Child ethnicity		.02	.06
Agency		.12	.17
Surgency		-.22*	-.21*
Step 2 (ΔR^2)			
AVG use	.01	-.01	-.15
Sedentary time		.08	.04
Step 3 (ΔR^2)			
AVG x Sedentary time	.04		.26*

Table 2. Hierarchical Linear Regression Models Predicting BMIz.

Note. * $p < .05$.

Hierarchical multiple regression was used to examine surgency, AVG use, sedentary time, and AVG use moderated by sedentary time as predictors of BMIz (while controlling for sex, ethnicity, and agency of participation). A significant AVG use X sedentary time interaction was found ($\beta = 0.26$, $p < .05$). Additionally, surgency was found to be a significant independent predictor even when accounting for the AVG use X sedentary time interaction ($\beta = -0.21$, $p < .05$). However, a three-way interaction between AVG use, sedentary time, and surgency was found to be non-significant ($\beta = -0.03$, ns).

A simple slopes analysis was conducted to help interpret the significant interaction (Figure 2). The analysis showed that AVG use was most predictive of BMIz for youth with low sedentary tendencies, whereas children with high sedentary tendencies benefitted less from high AVG use. The differences between the slopes was found to be significant ($p < .05$).

Discussion

The current study provides support for AVG use as a predictor of BMIz, at least for youth with already low sedentary tendencies. Emerging intervention programs that seek to promote AVG use as a form of physical activity should take into account that the success of introducing AVG's will likely depend on already-established behaviors of the youth. However, the current study does not support a link between temperament and sedentary time or AVG use.

Future studies should examine the effect of introducing AVG's to youth longitudinally, to see if AVG use can lead to decreases in BMI or if the current findings are due to a confound variable predicting lower BMI, higher AVG use, and lower sedentary tendencies. In addition, there is a need to replicate the findings of the current study with populations in other areas, as the current results are limited to a predominantly Caucasian and African American population in the Midwest.

References

- Centers for Disease Control and Prevention. (2012). Trends in the prevalence of extreme obesity among US preschool-aged children living in low-income families, 1998-2010. *Journal of the American Medical Association*, 308(24), 2543-2545.
- Chaput, J. P., LeBlanc, A. G., McArthur, A., Colley, R. C., Thivel, D., Bédard, S. J. H., ... Tremblay, M. S. (2013). Active healthy kids Canada's position on active video games for children and youth. *Pediatrics and Child Health*, 121(10), 529-532.
- Maddison, R., Mhurchu, C. N., & Jull, A. (2012). Active video games: The mediating effect of aerobic fitness on body composition. *The International Journal of Behavioral Nutrition and Physical Activity*, 9, 1-4.
- Mhurchu, C. N., Mhurchu, R., Tang, X., Jull, A., Pappas, H., & Rodgers, A. (2009). Couch potatoes to jumping beans: A pilot study of the effect of active video games on physical activity in children. *International Journal of Behavioral Nutrition and Physical Activity*, 11(1), 8-12.
- Rothbart, M. R., Ellis, L. R., Rosario Rueda, M., & Posner, M. I. (2003). Developing mechanisms of temperamental effortful control. *Journal of Personality*, 71(3), 1313-1344.
- Wu, T., Dixon, W., Dalton, W., Tudver, F., & Liu, R. (2011). Joint effects of child temperament and maternal sensitivity on the development of childhood obesity. *Maternal and Child Health Journal*, 15(4), 469-477.

Examples of Research Posters



Community Building Through Assessment: Creating a Culture of Practice



Sarah Jardeleza, Gabe Ording, Julie Libarkin: CENTER FOR INTEGRATIVE STUDIES IN GENERAL SCIENCE

COMMUNITY OF PRACTICE?

Can CISGS be transformed into a community of practice (Wenger 1998) through assessment?

WHY ASSESSMENT?

- Easy segue for scientists: assessment and evaluation are similar to experimentation and scientific processes
- Discipline-Based Education Research (DBER; NRC 2012)
- Continuous improvement of teaching and learning



Figure 1. Assessment cycle for continuous improvement.

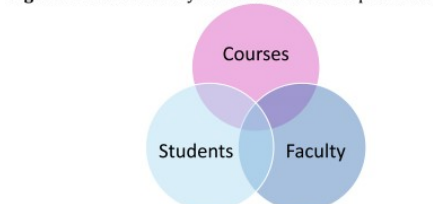


Figure 2. Structures for participation in CISGS program evaluation and continuous improvement.

Table 1. Faculty and student interaction with assessment process (% by AY for lunch meetings or semester for surveys).

Semester	Student: Surveys	Faculty: Surveys	Faculty: Lunch Meetings
Spring 2011	n/a ^{Early} ; 62% ^{Late}	37% ^{An} ; 37% ^{In}	67%
Fall 2011	39% ^{Early} ; 32% ^{Late}	56% ^{An} ; 40% ^{In}	
Spring 2012	33% ^{Early} ; 30% ^{Late}	52% ^{An} ; 40% ^{In}	61%
Fall 2012	49% ^{Early} ; 41% ^{Late}	39% ^{An} ; 30% ^{In}	
Spring 2013	49% ^{Early} ; 37% ^{Late}	41% ^{An} ; 38% ^{In}	72%

OUTCOMES:

Jardeleza, S., A. Cognato, M. Gottfried, R. Kimbirauskas, J. Libarkin, R. Olson, G. Ording, J. Owen, P. Rasmussen, J. Stoltzfus, S. Thomas (accepted). Summer 2013. The Value of Community Building: One Center's Story of How the AAC&U VALUE Rubrics Provided Common Ground. Liberal Education - AAC&U Press: 99(3).



Global Learning VALUE Rubric Review:

1. Professional development related to rubrics
2. Collaborative iterative feedback for rubric improvement
3. Alignment of instructor's course goals with the rubric
4. Shared effective rubric-related instructional activities
5. Developed innovative rubric-related instructional activities
6. Improved community of practice with faculty across disciplinary boundaries.

Energy Concept Inventory:

- What is a set of concepts common across CISGS?
- Syllabus review, faculty discussion = Energy
- Research /Development
- AAAS Project 2061, etc.
- AOP
 - Survey Creation & Student Pilot Testing #1
 - Administered survey during student orientation
- Angel
 - Survey Revision & Student Pilot Testing #2
 - Administered survey early-course FS2012
- FLC
 - Faculty Feedback
 - Item revision and creation
- Angel
 - Survey Revision & Student Pilot Testing #3
 - Administered survey late-course FS2012

Example Question

Which of the following contain(s) energy?
CHOOSE ALL THAT APPLY.

- ☐ A) Rocks sitting on a hill
- ☐ B) Rocks rolling on a hill
- ☐ C) Rocks sitting on the ocean floor
- ☐ D) Rocks rolling on the ocean floor
- ☐ E) I do not know

Faculty DBER Projects:

1. Dr. Remke Van Dam – Weather, Climate, Water, and Communication



2. Dr. Jon Stoltzfus – Flipped REAL Classroom



3. Drs. Julie Libarkin, Stephen Thomas, Gabe Ording



Figure 3. Ideal student and expert models of the greenhouse effect.

FUTURE STEPS

- Faculty Collaborative DBER AOP Assessments
- Coordinated embedded assessments
- Automated course reports for faculty as requested
- Continued Collaborative Publications
- Collaborative Grants

CITATIONS

- AAAS Science Assessment ~ Home. <http://assessment.aaas.org/>.
- National Research Council (2012) Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering.
- Wenger, E. (1998) Communities of Practice: Learning, Meaning, and Identity. Cambridge University Press.

Presenting Your Research



- Remember that you are the expert!
- Don't block your poster
 - Have more than one presenter?
- Treat your poster presentation like a conversation
 - Allow for questions
- Practice!
 - Prepare 1-2 sentences per section



Presenting Your Research



- Prepare and practice for common open-ended questions
 - Tell me about your research...
 - How does this relate to the field?
 - How will this research impact your future research?
- Be enthusiastic about your work
 - Have more than one presenter?
- Practice projecting your voice
 - Have water
- Dress appropriately



QUESTIONS?

