go.umd.edu/PosterDesign
Workshop Objectives

- How does a poster presentation work?
- What are some aspects of good poster design?
- How do I make and print the poster?
- How do I deliver my poster presentation?
The Rhetorical Situation

Rhetorical Situation = the situation that shapes the argument and the potential of the argument

- What’s in that situation?
  - Audience
  - Speaker/author
  - Purpose
  - Issue/topic
  - Constraints (word limit, medium, etc.)
  - The particular moment (exigence)
“Before you start preparing the poster, ask yourself the following questions: **What do you want the person passing by your poster to do?** Engage in a discussion about the content? Learn enough to go off and want to try something for themselves? Want to collaborate? All the above, or none of the above but something else? Style your poster accordingly.”
Think Visually

Scott McCloud, Understanding Comics
54 years after the United States passed the Equal Pay Act, women in the US still face a substantial gender wage gap across the spectrum.

Today, on average, a woman earns 79 cents for every dollar a man earns, and women’s median annual earnings are $10,800 less than men’s, according to a report released by the Senate Joint Economic Committee Democratic Staff last April.
Figure A

Women earn less than men at every education level
Average hourly wages, by gender and education, 2015

<table>
<thead>
<tr>
<th>Education</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school</td>
<td>$13.93</td>
<td>$10.89</td>
</tr>
<tr>
<td>High school</td>
<td>$18.61</td>
<td>$14.57</td>
</tr>
<tr>
<td>Some college</td>
<td>$20.95</td>
<td>$16.59</td>
</tr>
<tr>
<td>College</td>
<td>$35.23</td>
<td>$26.51</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>$45.84</td>
<td>$33.65</td>
</tr>
</tbody>
</table>

Source: EPI analysis of Current Population Survey Outgoing Rotation Group microdata
Economic Policy Institute
Think Visually

U.S. pay gap:
All full-time working men vs. women

$1

79¢
54 years after the United States passed the Equal Pay Act, women in the US still face a substantial gender wage gap across the spectrum. Today, on average, a woman earns 79 cents for every dollar a man earns, and women’s median annual earnings are $10,800 less than men’s, according to a report released by the Senate Joint Economic Committee Democratic Staff last April.
Title of Poster
Author Name and Affiliation

Abstract

Introduction

Discussion

References
Main finding goes here, translated into **plain english**. **Emphasize** the important words.
Improving surface temperature data quality by leveraging daily satellite observations and machine-learning techniques

Yuhan Rao¹, Shunlin Liang², Dongdong Wang³, Yunyue Yu¹
1. North Carolina State University/NCCES
2. University of Maryland, College Park
3. NOAA/NESSIS/STAR

INTRODUCTION
- The northern high latitudes (NH, above 60°N) have very limited temperature data;
- The lack of temperature data leads to large uncertainty in climate analysis over the NH;
- A machine-learning framework can be used to estimate all-day surface temperature data using satellite observations.

METHODS
2. Input: MODIS land surface temperature (LST), incident solar radiation (IS), top-of-atmosphere (TOA) shortwave, outgoing longwave radiation (OLR), geolocation, day of year;
3. Training: daily MODIS / GCM-D data match ups of 50 stations (data records longer than 10 years);
4. Evaluation: daily MODIS / GCM-D data match ups of 50 stations (data records shorter than 10 years).

RESULTS

DISCUSSION
- The all-day MARS estimation shows promising performance;
- More evaluation needed for Greenland (compare with PROMIS).

With a carefully designed machine-learning framework, we can use satellite data to fill the knowledge gap of surface temperature change over regions with limited in situ measurements.
The Sensitivity of Temperature Measurements to Built-Up Environments: A Case Study In Oak Ridge, TN

Ronald D. Leeper1, John Kochendorfer2, Timothy Henderson3, and Michael A Paleck3
1Cooperative Institute for Climate and Satellites-NC (CICS-NC), North Carolina State University (NCSU), Asheville, NC
2NOAA's Atmospheric Turbulent Diffusion Division (ATDD) Oak Ridge, TN; 3North Carolina State Climate Office Raleigh, NC; 4NOAA/NESDIS/National Centers for Environmental Information (NCEI), Asheville, NC

Introduction

The influence of urban heat island (UHI) on air temperature measurements is well understood. However, the reach and impact of small-scale urban encroachment (establishment of parking lots, single story buildings, or two-road highways) on air temperature warrants further review. This was particularly true in context of climate studies where the influence of artificial heating sources can obscure results. In this study, observation towers were placed at five distances (1, 50, 90, 124, and 309 meters) from a small-scale built environment (Fig. 1) to simulate different degrees of exposure to encroachment on station measurements. The towers were instrumented with both aspirated and unaspirated thermistors to delineate encroachment impacts by aspiration type (e.g., natural versus fan-driven aspiration).

Results

Figure 2. Averaged temperature differences between tower A and tower B for aspirated (blue) and unaspirated (orange) PT100s.

Figure 3. Tower D mean temperature differences by: a) light (light green), b) moderate (light green), c) strong (light green), d) wind direction (light green). Figure 4. Tower D mean temperature differences observed during day and night by sensor type.

Discussion and Conclusions

These results were inline with the literature with differential warming and cooling rates between field and artificial surfaces explaining much of the differences.

- Mean temperature differences at night exceeded 0.8°C.
- Changes in TSI (-0.35°C) were quite large.
- Fan aspirated sensors detected a stronger signal, making them more similar to unaspirated sensors.

Methodology

Temperature biases related to small-scale urban encroachment were evaluated by differing the respective aspirated and unaspirated sensors at towers A-C with tower D, which served as the control. In addition to automated and manual quality control checks, temperature measurements were calibrated to tower D using a linear approximation. The sensor specific calibrations were based on measurements collected during a collocation study conducted on tower D, just prior to the field experiment. Finally, the 16-second resolution dataset was averaged over a moving 5-minute window to limit the impact of response time differences, which can occur between sensors with differing types of aspiration.
Small-scale urban encroachment increases measured temperatures.

The effect is larger: at night for aspirated sensors with lighter winds on sunnier days.

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>All</th>
<th>Day</th>
<th>Night</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirated</td>
<td>0.31°C</td>
<td>0.16°C</td>
<td>0.47°C</td>
</tr>
<tr>
<td>Unaspirated</td>
<td>0.23°C</td>
<td>0.05°C</td>
<td>0.40°C</td>
</tr>
</tbody>
</table>
Engineering fungi to prevent malaria transmission

Burkina Faso, Africa

We need new mosquito control techniques to manage insecticide resistance in Africa.

Metarhizium

A natural fungal disease has promoters that express genes only in mosquito hemolymph.

College Park, Maryland

Blue Mountains Funnel-Web

Spiders have been evolving insect-specific toxins for millions of years, like Hybrid Toxin.

Queensland, Australia

We transformed Metarhizium to express Hybrid Toxin only in mosquito blood.

Hybrid Toxin

Industries de la Santé

We need to show efficacy, approval, and acceptance.

Uninfected

We built a MosquitoSphere facility to test the efficacy of our transgenic technology.

5 days-post-infection

We applied a sesame-oil formulation of this fungus to local, black cotton sheets.

3 days-post-infection

The transgenic fungus killed more mosquitoes and killed them faster.

NIH

The transgenic fungus causes established populations to collapse in the Sphere.

NIH/NIAD

Before open field trials, we need to show efficacy, approval, and acceptance.

Regulatory Approval

Fungus infection restored susceptibility to insecticides in resistant mosquitoes.

Knock Down

The number of transgenic spores transferred during mating are enough to kill the mate.

Community Acceptance

Contact: lovette@umd.edu
How is sister chromatid cohesion established in eukaryotic cells?}

1. Introduction

Sister chromatid cohesion is a crucial mechanism that ensures the accurate segregation of chromosomes during cell division. It is essential for maintaining the integrity of the genome and is involved in various cellular processes. The establishment of sister chromatid cohesion occurs during the interphase of the cell cycle and is mediated by a complex network of proteins and pathways. The cohesion is maintained through the interaction of specific proteins that form a bridge between the two sister chromatids. These proteins are dynamically regulated throughout the cell cycle, ensuring that cohesion is established at the right time and place.

2. Models of Cohesion Establishment

- The cohesin model: This model proposes that sister chromatid cohesion is established by the cohesin protein complex, which is composed of four subunits (Scc1, Pds5, Smc1, and Smc3). The cohesin complex is recruited to the chromosome arms at a specific location, known as the cohesion没啥...
Design best practices

1. Design is more than just decoration
2. Avoid personal preferences (think about your audience)
3. Do not fill up every inch of space provided
4. Balance text and image/graphics
   a. Most people won’t read everything you write
Design sins

1. Warped photos
2. Bulky borders and boxes
3. Cluttered spaces
4. Centering everything
5. ‘Tacky type' emphasis
6. ‘Bad' bullets
7. ‘Trapped’ negative space
8. ‘Cheated' margins

Adapted from White Space is Not Your Enemy, Kim Golombisky and Rebecca Hagen
Less is best

- Offer enough to explain and start conversation
- Answer the basic questions:
  - Why did I do this? (introduction)
  - What did I do? (methods)
  - What did I figure out? (results)
  - Why does it matter? (discussion)
  - Who helped? (acknowledgements)
Words!

USE TEXT TO CREATE HIERARCHY

A consistent pattern will help readers understand what’s most important

• And how to focus their attention
Titles should be large enough to read from across the room
Serif fonts often look more academic.

But sans serif fonts can be easier to read.

And weird fonts are just... Weird.
DO left justify your text. The small break we get at the end of a line reading left justified text actually contributes to clarity.
Instead, when prose is centered it often makes for strange spaces between words and that looks jarring or even unnecessarily loose.
Low Contrast
Is hard to read
It blends into the background

High Contrast
Is easier to read
It pops out from the background
PIGS IN SPACE:
EFFECT OF ZERO-GR AVITY AND AD LIBITUM FEEDING ON WEIGHT GAIN IN Cavia Porcellus

Colin B. Purrington
6573 College Avenue, Swarthmore, PA 19081 USA

ABSTRACT:
One surprising benefit of space travel is a potential increase in weight. In a recent study, a group of pigs was exposed to microgravity conditions for 14 days. The pigs gained an average of 4.5 kg during the flight, which is significantly more than the 0.2 kg gain observed in a control group of pigs that remained on Earth. The increased weight gain was attributed to a decrease in energy expenditure, possibly due to a decrease in physical activity. These findings suggest that space travel may offer a novel method for promoting weight gain in pigs and other animals.

INTRODUCTION:
The current study was conducted to evaluate the effects of microgravity on the growth and development of pigs. The study was funded by the National Aeronautics and Space Administration (NASA) and was carried out at the Raspberry Ridge Research Station in Texas. The pigs were housed in a special environment that simulated microgravity conditions for the duration of the study.

RESULTS:
The results of the study showed that the pigs exposed to microgravity conditions gained significantly more weight than the control group of pigs that remained on Earth. The average weight gain for the microgravity group was 4.5 kg, while the weight gain for the control group was only 0.2 kg. The difference in weight gain was statistically significant (p < 0.05).

CONCLUSIONS:
The findings of this study suggest that microgravity may offer a novel method for promoting weight gain in pigs and other animals. The results may have implications for the development of new strategies for improving weight gain in pigs, as well as for the development of new methods for promoting weight gain in other species.

ACKNOWLEDGEMENTS:
This work was supported by NASA grant NNX10AH44G. The authors would like to thank the staff at the Raspberry Ridge Research Station for their assistance in conducting the study.

LITERATURE CITED:

https://colinpurrington.com/tips/poster-design/bad
Think Visually

• But what are you thinking about?

• What are your key ideas?
  ○ Think of an outline or information hierarchy – what is the most important thing to say, how will you say it, where does it go?
  ○ Develop a layout that reflects this information hierarchy
Try it!

Imagine you are making a poster to present whatever you are working on right now.

- What is the key takeaway?
- What are the main points you want your audience to know (know your audience first!)
Sketch your poster

Think about:
Flow
Balance of text + image
Graphs and charts
Color!
Go digital

- Use powerpoint, InDesign
- Check out department templates here and here!
- SmartArt is built into Powerpoint and Word
- Use UMD colors and logos: UMD Brand toolkit
- Maryland Undergraduate Center Poster Design tips
Some final suggestions

- Print out an 8X11 version of your poster. It should be clear enough to read.
  - Consider making copies to distribute to interested attendees
Presentation

- Casual setting
- Some people read without talking to you, the opposite is also true
- Group vs. single person
- Remember what you have
  - Have talking points
- Have cards, quick links (like bitly), QR code ready
- Practice explaining your poster to someone who does not know anything about the topic
Some final suggestions

- Prepare a 3-5 minute talk about the research shared on the poster.

  - Prepare, don’t deliver robotically. Practice talking and having some variety in your talk.
    
    Remember, you want to engage attendees, not perform at them.
Bonus: creative commons license

Do you want to receive credit for your poster if used in the future? Think about a creative commons license.
Printing on Campus

McKeldin Large Format Printing
https://www.lib.umd.edu/tlc/tlc-tech-desk

UMD Copy Services (Stamp, Marie Mount, Tydings, Van Munching)
http://www.dbs.umd.edu/copy/prices.php#large

UMD Engineering School http://www.copycenter.umd.edu/posters

School of Architecture
http://www.arch.umd.edu/tutorial/large-format-color-printers
TIME FOR QUESTIONS
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Ramsewak, A. (2012). How to...Create a poster presentation. Education For Primary Care, 23(5), 360-361.


THANKS!

Do you have any questions?
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lib.umd.edu/rc

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