Posters, Presentations, and Abstracts

Dr. Paul Lipton
UROP Director
July 31, 2017
Posters, Presentations, and Abstracts

1. Posters
2. Oral Presentations
3. Abstracts
4. 20th Annual UROP Symposium
Posters vs. Oral Presentations

Posters

- Roaming audience
- Interactive discussion: small groups or often 1-on-1
- More informal, not structured
- Flexible content, depending on listener
- <5 minutes
Structure of a Poster or Presentation

- **Title and names**
  - What is your research about and who is involved? Make a conclusion if you can.

- **Introduction and Objective**
  - Why did you do this research?

- **Methodology**
  - How did you do the research?
  - What steps did you follow?

- **Results**
  - What new information did you learn?
  **Use figures** to illustrate.
Structure of a Poster or Presentation

- **Summary and Conclusions**
  - Why are your results important and how do they contribute to the bigger picture?
  - What are the key things that were learned. Use bullet points.

- **Future Directions**
  - What studies should follow from your work?

- **Acknowledgments**
  - Sources of financial and technical support
Hippocampal neurons encode the order of events in unique experiences

Joseph Manns and Howard Eichenbaum
Center for Memory and Brain, Boston University

Marc Howard
Department of Psychology, Syracuse University

Task: Select the odor that came earliest in the sequence
A 10 sec  B 10 sec  C 10 sec  D 10 sec  E 10 sec  B+ vs. D-

• Unique sequence on every trial
• Meant to test a component of episodic memory
• Depends on intact hippocampus

Question: How does hippocampal activity support performance on test of memory for order?

We considered three possible ways

1. Provide a signal of memory strength from which animal can deduce temporal order
   B+ vs. D-

2. Associate ordinal position with each odor
   A = 1st  B = 2nd  C = 3rd  D = 4th  E = 5th
   1st vs. 4th

3. Encode items in their temporal-spatial context, allowing temporally-adjacent items to be represented more similarly than temporally-distant items.
   A → B → C → D → E

We used tetrodes to record CA1 hippocampal units from 5 rats as they performed task

• Across 17 recording sessions, each of 5 rats typically completed 20 trials of the task at 77.8 percent correct (SEM = 1.8%).

Example Session with 15 CA1 pyramidal units

We calculated similarity between sampling events as a function of lag (1 to 4) between ordinal positions. We plotted results separately for comparisons of events in the same position versus events in different positions.

Correct trials
Incorrect trials

MAIN FINDING #1: Events closer in sequence are more similar than events farther apart.

We also calculated similarity between sampling events as a function of lag (1 to 18) between trials.

MAIN FINDING #2: Events closer in session are more similar than events farther apart.

Results suggest that hippocampus allows items to be associated with a gradually changing temporal-spatial context, which provides temporal structure to memory.

Supported by NIH grants MH051570 and MH068982
Poster Presentation Tips

- Be prepared—know more than is displayed on your poster
- Don’t assume observers have prior knowledge of project
- Try to figure out the level of understanding of the listener

- Content should be easy to see
- Explain graphs and figures
- Engage your audience
Font Choice

- Big enough to see from 4-6 feet away!

- Highlight important points with CAPITALS, **bold**, *color* or *italics*

- But: Don’t use *too* many fonts or colors on *same* page

- ALL CAPITALS ARE HARD TO READ AND GIVE THE IMPRESSION OF YELLING.
Common Poster Mistakes

- Font size is too small to be useful
- Too many design features
- Too much text
- Poster elements exceed space
- Graphs or data charts are not labeled
- Elements of the poster appear randomly
- Assuming too much knowledge of audience

ABSTRACT:
One ignored benefit of space travel is a potential elimination of obesity, a chronic problem for a growing majority in many parts of the world. In theory, when an individual is in a condition of zero gravity, weight is eliminated. Indeed, in space one could conceivably follow ad libitum feeding and never gain an ounce, and the only side effect would be the need to upgrade one's stretch pants/exercise pantry, but because many diet schemes start as very good theories only to be found to be rather harmful, we tested our predictions with a long-term experiment in a colony of Guinea pigs (Cavia porcellus) maintained on the International Space Station. Individuals were housed separately and given unlimited amounts of high-calorie food pellets. These fruits and vegetables were not available in space so were not offered. Every 30 days, each Guinea pig was weighed. After 6 years, we found that individuals, on average, weighed nothing. In addition to weighing nothing, no weight appeared to be gained over the duration of the protocol. Clinical observations in the astronauts and cosmonauts, and we believe that assumption is sound, we believe that extending the overweight — and those at risk for overweight — to space would be a lasting cure.

INTRODUCTION:
The current obesity epidemic started in the early 1960s with the invention and proliferation of elastane and related stretchy pants in public, primarily because the constraining pressure forces fat molecules to adopt a more compact density structure (Kivel 1965).

Likewise, at the same time that fabrics became stretchy, the race to the moon between the United States and the former Soviet Union yielded a useful fact: gravity in outer space is minimal to nonexistent. When gravity is zero, objects cease to have weight. Indeed, early astronauts and cosmonauts had to secure themselves to their ships with seat belts and sturdy boots. The potential application to weight loss was noted immediately, but at the time, travel to space was prohibitively expensive and that the issue was not seriously pursued. Now, however, multiple companies are developing cheap extra-terrestrial travel options for normal consumers, and potential travelers are also creating new ways to pay for products and services that they cannot actually afford. Together, these factors open the possibility that moving to space could cure overweight (somebody's quirk and permanently for a large number of humans).

RESULTS:
Mean weight of pigs in space was 0.0003 ± 0.0002 g. Some individuals weighed less than zero; some more, but those variations were due to reaction to the duct tape, we believe, which caused them to be alarmed and vastly against the force plate in the balance. Individuals on the Earth, the control cohort, gained about 240 g/month (p = 0.0002). Males and females gained a similar amount of weight on Earth (no main effect of sex), and size at any point during the study was related to starting size (which was used as a covariate in the ANCOVA). Females and space pigs developed substantial deviations (double chins) and were laudable at the conclusion of the study.

CONCLUSIONS:
Our view that weight and weight gain would be zero in space was confirmed. Although we have not replicated this experiment on larger animals or primates, we are confident that our result would be mirrored in other model organisms. We are currently in the process of obtaining necessary human trial permissions, and should our planned experiment initiated within 8 years, pending expedited review by local and Federal IRB.

ACKNOWLEDGEMENTS:
I am grateful for generous support from the National Research Foundation, The Black Hole Diet Plans, and the High Fructose Sugar Association. Transport flights were funded by SPACE-EXES, the consortium of wives divorced from insanely wealthy space-flight startups. I am also grateful for comments on early drafts by Marlene Athletic Club, Corpus Christi, USA. Finally, sincere thanks to the City Foundation for generously donating animal care after the conclusion of the study.

LITERATURE CITED:
Electronic Posters
E-Poster Examples
What researchers usually put on posters

- Abstract
- Email addresses
- Institutional logos
- Detailed methods
- Funding sources
- Reference list
- Lab website

What viewers care about

- Title
- Author’s names
- Data
- The question
- Take-home message
Posters vs. Oral Presentations

Posters
- Roaming audience
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Oral Presentations
- Audience focused on speaker
- Content is targeted toward the specific audience
- Formal and structured
- Set amount of time to present (~12-50 minutes)
- Q&A session at end
Effective Oral Presentations

- Tell a story!
- Slide is a **tool**, not the message
- Remove *all* irrelevant information from slides

*Worldwide non-commercial space launches correlates with Sociology doctorates awarded (US)*

- Sociology doctorates awarded (US) Worldwide non-commercial space launches

[Graph showing the correlation between worldwide non-commercial space launches and sociology doctorates awarded (US) from 1997 to 2009.]

[Graph details: 1997-2009, 30, 40, 50, 60 launches with corresponding sociology degrees awarded (500, 550, 600, 650, 700).]
Effective Oral Presentations

- Be nervous
- Practice your introduction and speak slowly, especially at first
- Don’t be afraid to tell a conclusion up front
- Don’t read directly from the slide or notes
- Use the pointer properly
- Ask for questions at the end
  - Let person ask question fully, repeat question
Common Talk & Slide Mistakes

- Font size is too small on slides
- **Overuse** of color or too many design features
- **Poor choice of background and text**
- Too much text on slide
- Presentation is too long
- Slides have more information than necessary
- Images are not labeled
- Titles of slides do not give a take-home message
- Overuse of animation
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Preparing Your Abstract

- A short description of what you did and learned
- Should be informative and interesting
- Keep to the requested format (for UROP, <250 words, ½ page)
- Write for a broad audience: explain key concepts briefly and spell out abbreviations on first use
- Don’t assume reader knows why your work is important
- Don’t get caught up in numbers - include only numbers that are most important
Abstract Layout

- **Introduction**
  - 1 sentence placing the study in context
  - 1-2 sentences explicitly stating what the study investigated and why it was special

- **Body**
  - 1-3 sentences summing up the approach, or the most important methods used to investigate the problem

- **Results and Discussion**
  - 1-3 sentences that summarize the MAJOR results and potential future applications

- **Summary**
  - 1 sentence that summarizes why your results are significant and perhaps what you will do in the future
Common Abstract Formatting Mistakes

- References to other literature
- References to figures or images
- Overuse of abbreviations or acronyms
- Repetition
- Including unnecessary or vague sentences
- Going over (or way under) the word limit
- Not following abstract guidelines (font, length, title, authors)
Abstract Submission

- Abstracts due **Friday, August 11th**
- Follow the abstract format **EXACTLY** for inclusion in the symposium booklet
  - Formatting instructions and template emailed & available at [www.bu.edu/urop](http://www.bu.edu/urop)
  - Abstracts submitted via electronic form
- Abstracts **must not exceed one half page** (250 words)
Friday, October 13, 2017
- Friends & Family Weekend
- GSU Metcalf Hall
- 11AM – 1PM

Poster Presentations
- two 1-hour sessions

Electronic Posters

Mentor Awards