HIDDEN FIGURES

Data that Drives Policy & Data that Doesn't

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The Inspiration

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HR 1396: “Hidden Figures Congressional Gold Medal Act”

A BILL

To award Congressional Gold Medals to Katherine Johnson and Dr. Christine Darden, to posthumously award Congressional Gold Medals to Dorothy Vaughan and Mary Jackson, and to award a Congressional Gold Medal to honor all of the women who contributed to the success of the National Aeronautics and Space Administration during the Space Race.

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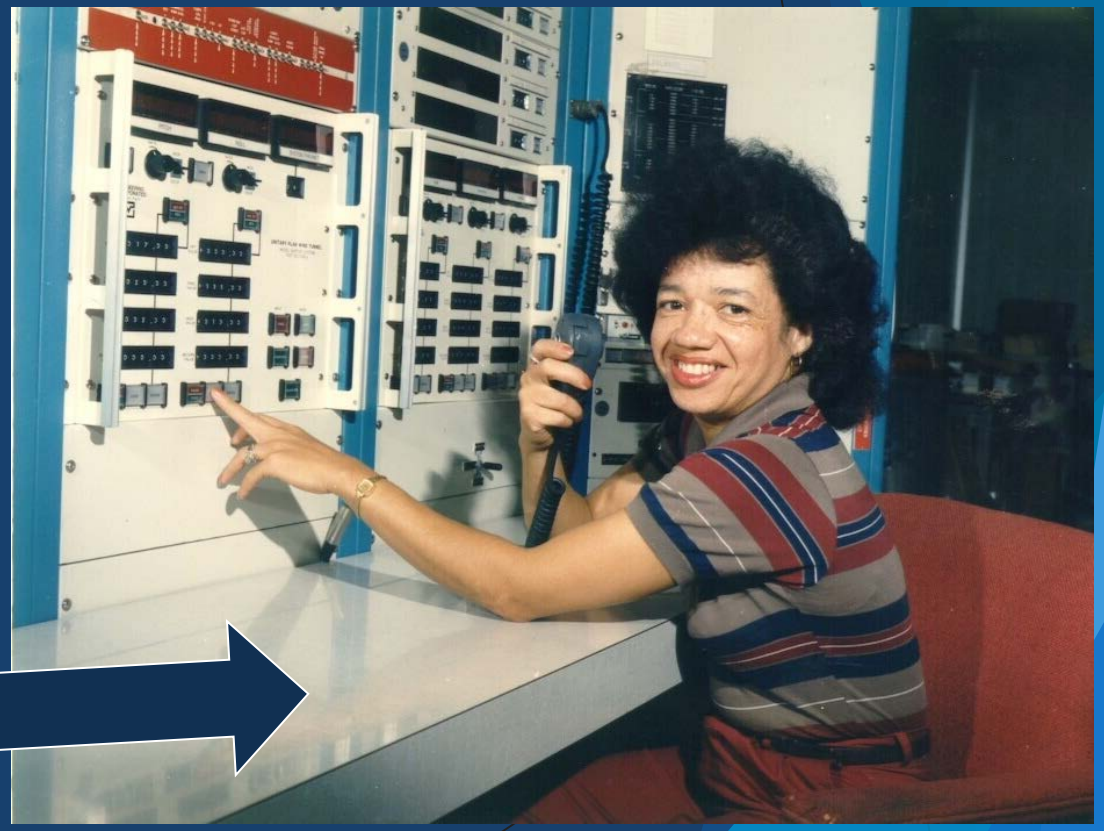

Dr. Darden

Dictionary.com

Definitions

hidden [hid-n] SHOW IPA

SYNONYMS | EXAMPLES |

adjective

1 concealed; obscure; covert:
hidden meaning; hidden hostility.

figure [fig-yer; *especially British* fig-er]

SYNONYMS | EXAMPLES | WORD ORIGIN | IDIOMS

noun

1 a numerical symbol, especially an Arabic numeral.

2 an amount or value expressed in numbers.

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noun

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figure

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Data that Drives Policy

The House Committee on Science, Space, and Technology

- How are bills revised?
  - Hearings
  - Markups
- Science Committee
  - Looks at scientific issues
  - Data is important!
- Bipartisanship
  - What is it?
  - Why should we care?

“Scientific Integrity” hearing

- “This is not a Democratic or Republican issue.”
  - Rep. Stevens (D-MI)

- “It seems that my Democratic colleagues are intent on politicizing scientific integrity… there was no phone call, no deliberation. At least, no bipartisan deliberation.
  - Rep. Norman (R-SC)

"Scientific

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THE NEW YORKER

THE HOUSE SCIENCE COMMITTEE'S ANTI-SCIENCE RAMPAGE

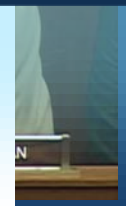
By Lawrence M. Krauss September 14, 2016

There has always been tension between scientists and Congress. But Lamar Smith, the chairman of the House Committee on Science, Space, and Technology, has escalated that tension into outright war.

"Scientific

"Every bill has to be bipartisan, or it will be blocked."

Rep. Smith (R-TX)



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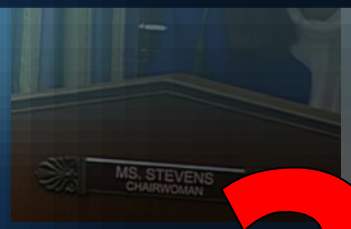

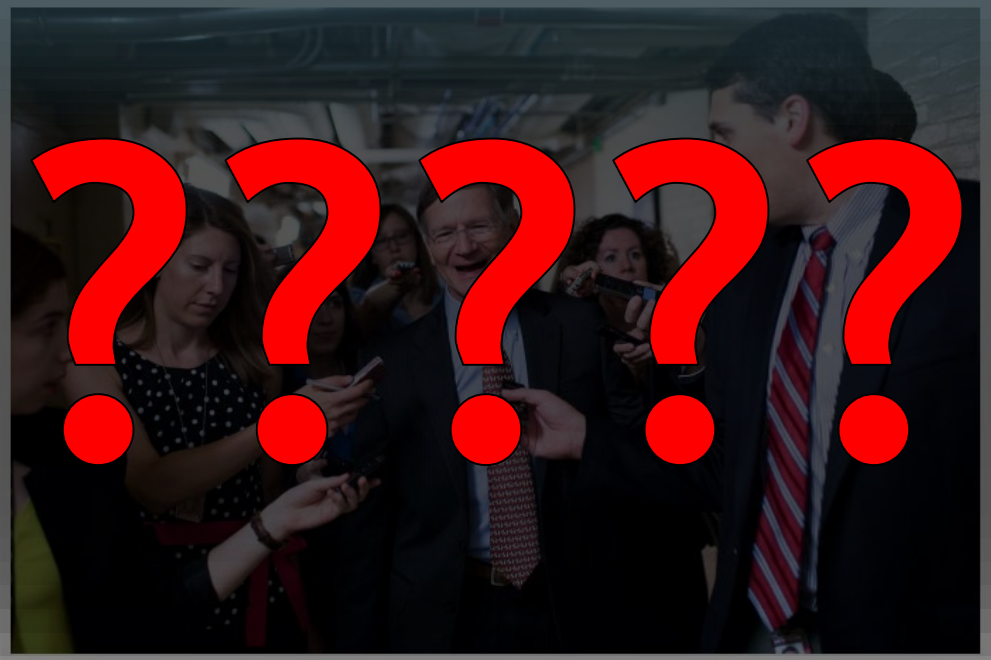

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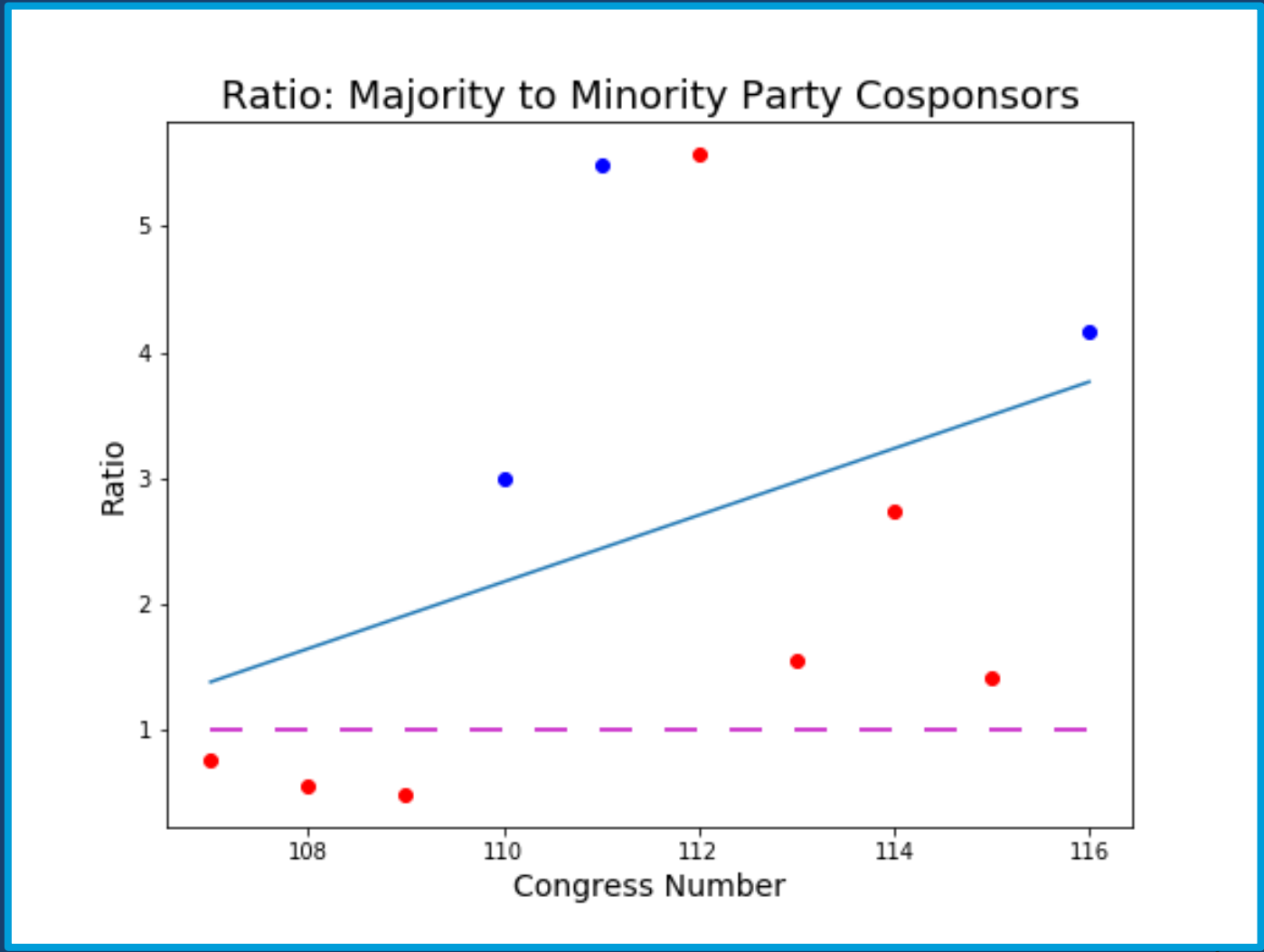
Figure 1: Bipartisanship



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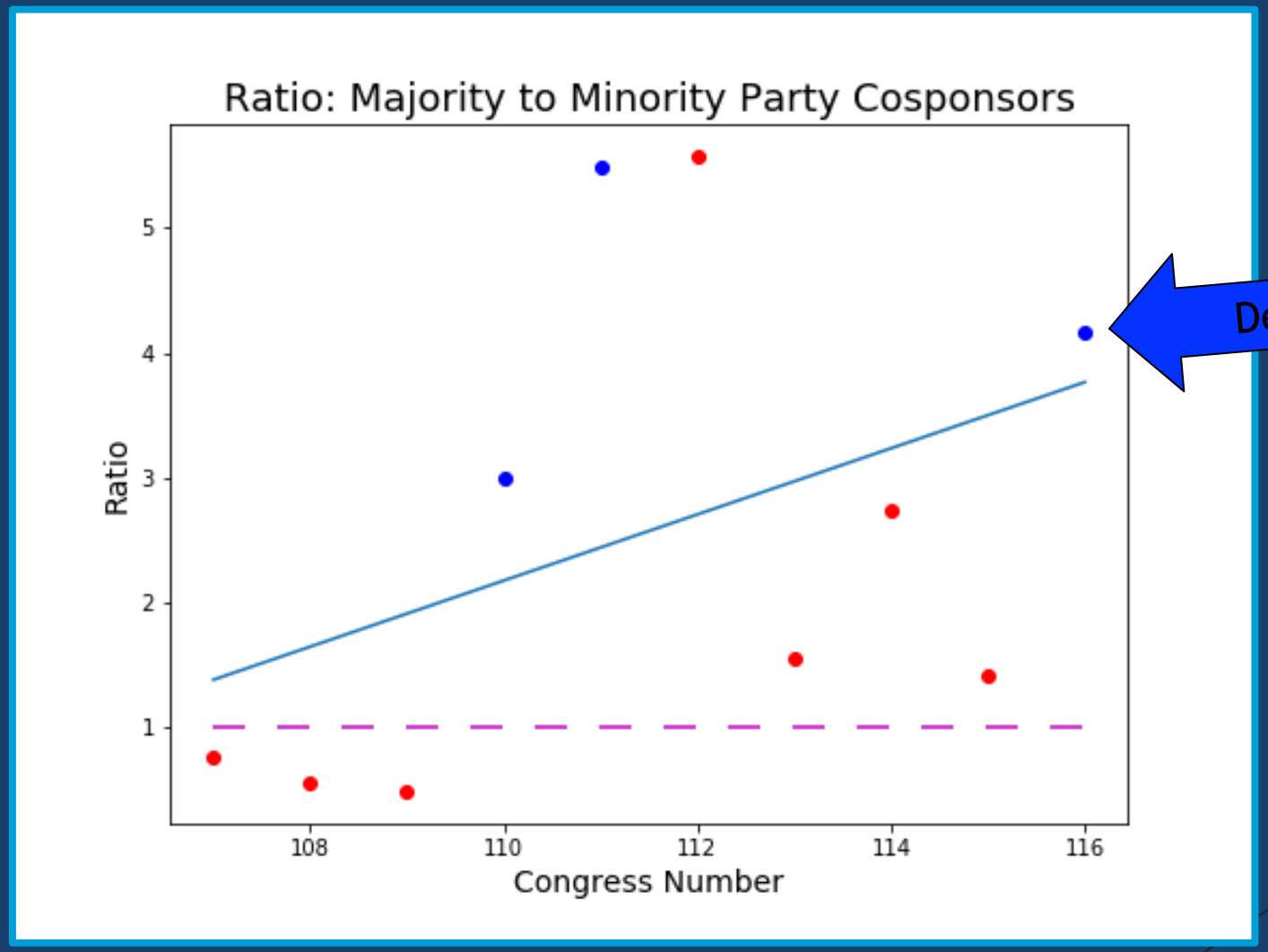

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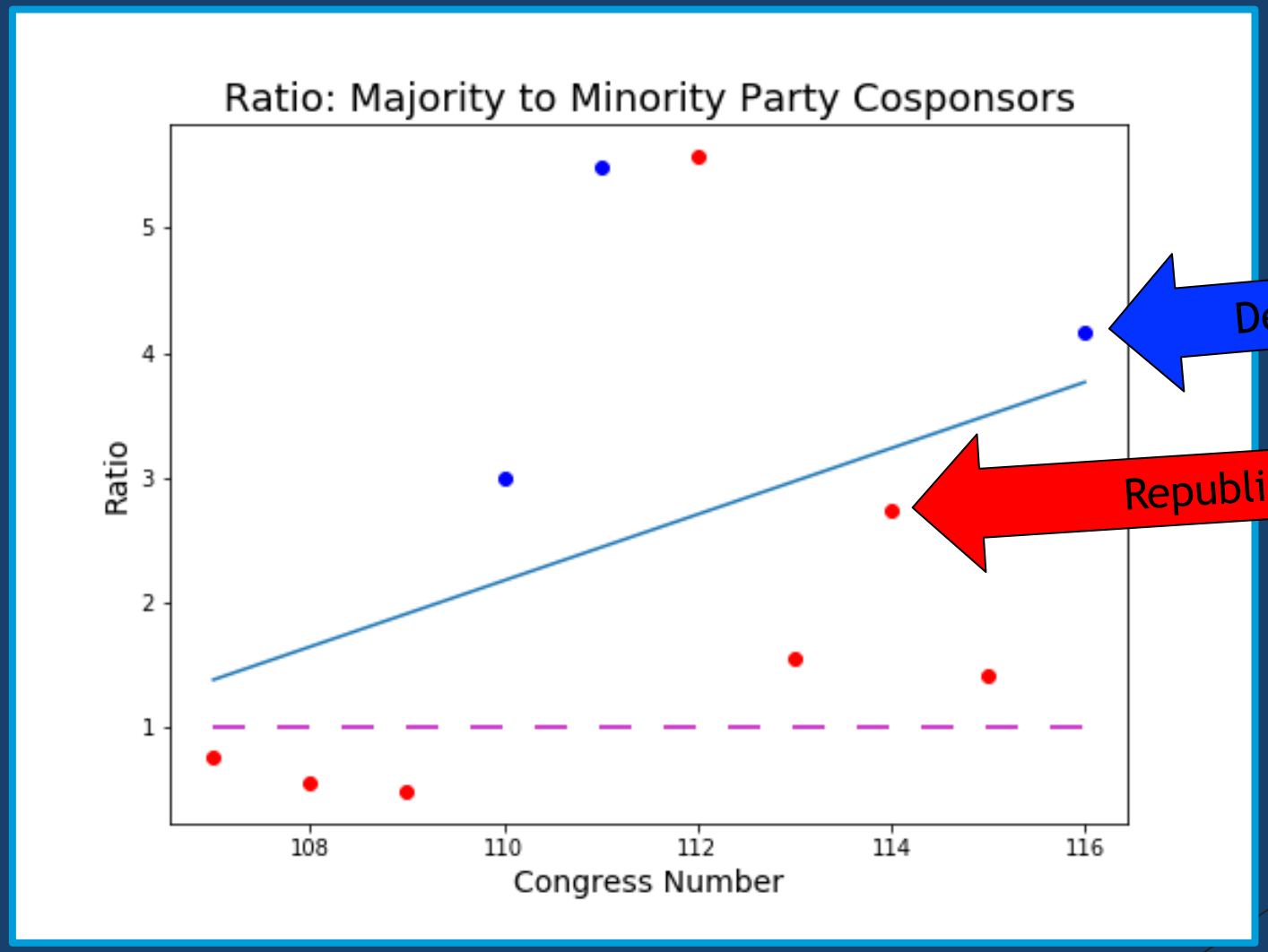

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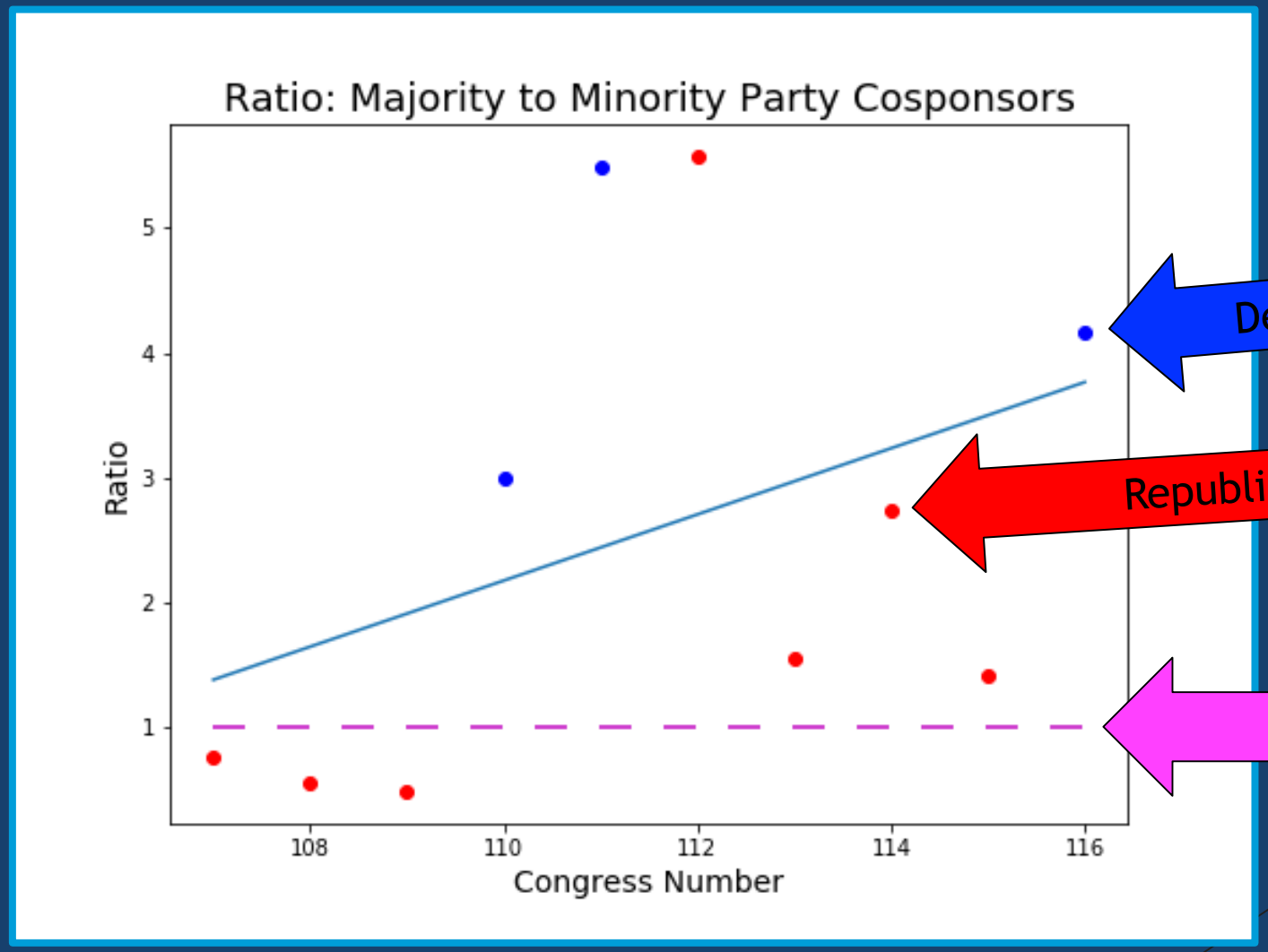
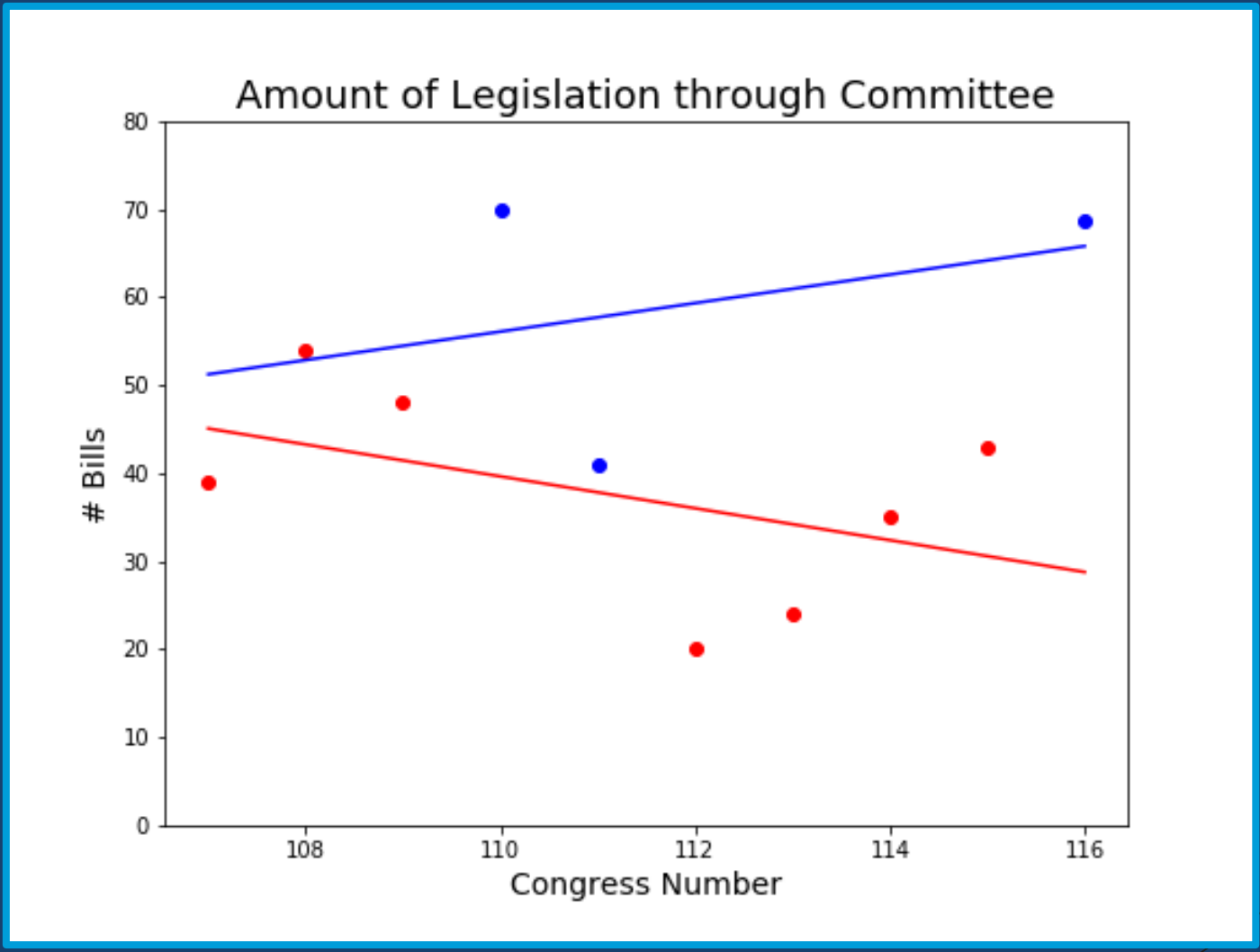


Figure 2: Amount of Legislation



Data that Doesn’t

MINI-PROJECT:
Event Demographics

- Dozens of briefings on the Hill
- Anecdotal experience – gender discrepancies
  - Or, confirmation bias?
- Solution: **Data**
  - Event Title
  - Description Text
  - Gender(s) of Moderator, Panelists, Audience Q&A

Short Answer: It’s Not Confirmation Bias

- **Event Panels**
  - 64% male
- **Audience Q&A**
  - 77% male

Figure 5: Event Moderators

	N	% Male Q&A
Male Moderator	15	80%
Female Moderator	5	52%

	1st Q - Male	1st Q - Female
Male Moderator	12	3
Female Moderator	3	2

Figure 5: Event Moderators

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P value: 0.5598 → **not significant**

Figure 6:
Event Demographics

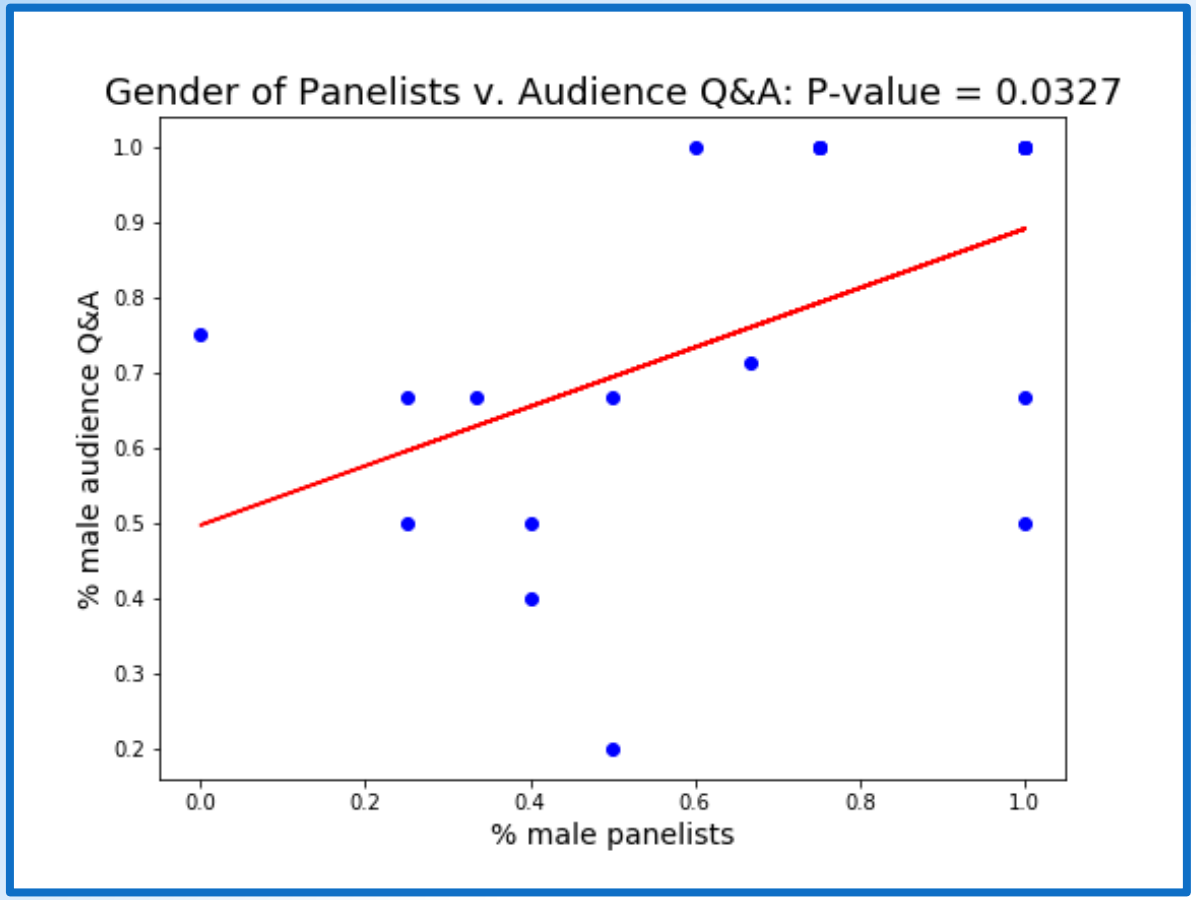
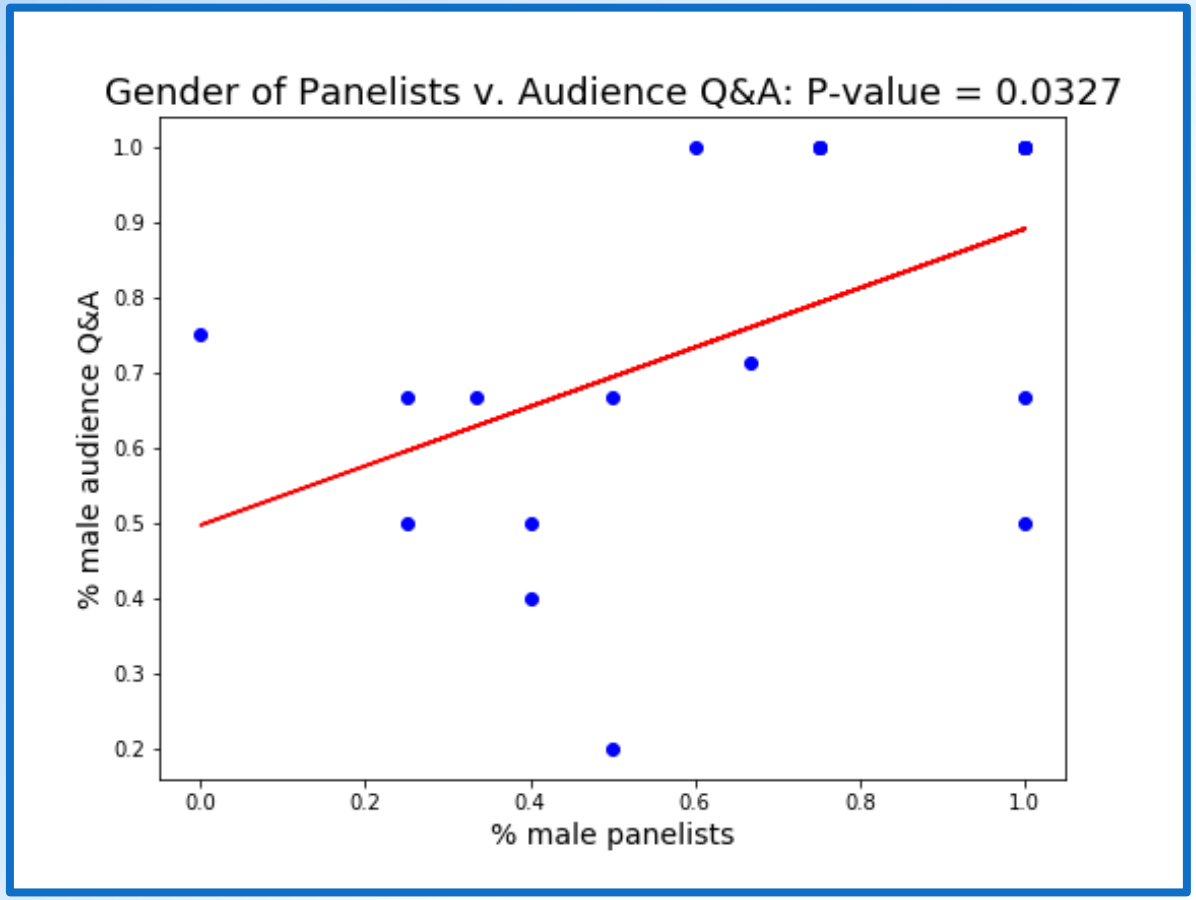


Figure 6:
Event Demographics

significant



Possible Explanations

Psychological Effect

Overall attendance ratios

Topics

Testing the “Event Topic” Hypothesis

- Text analysis program in Python
- Categorized common words into lists
- Significant findings?
  - Yes!

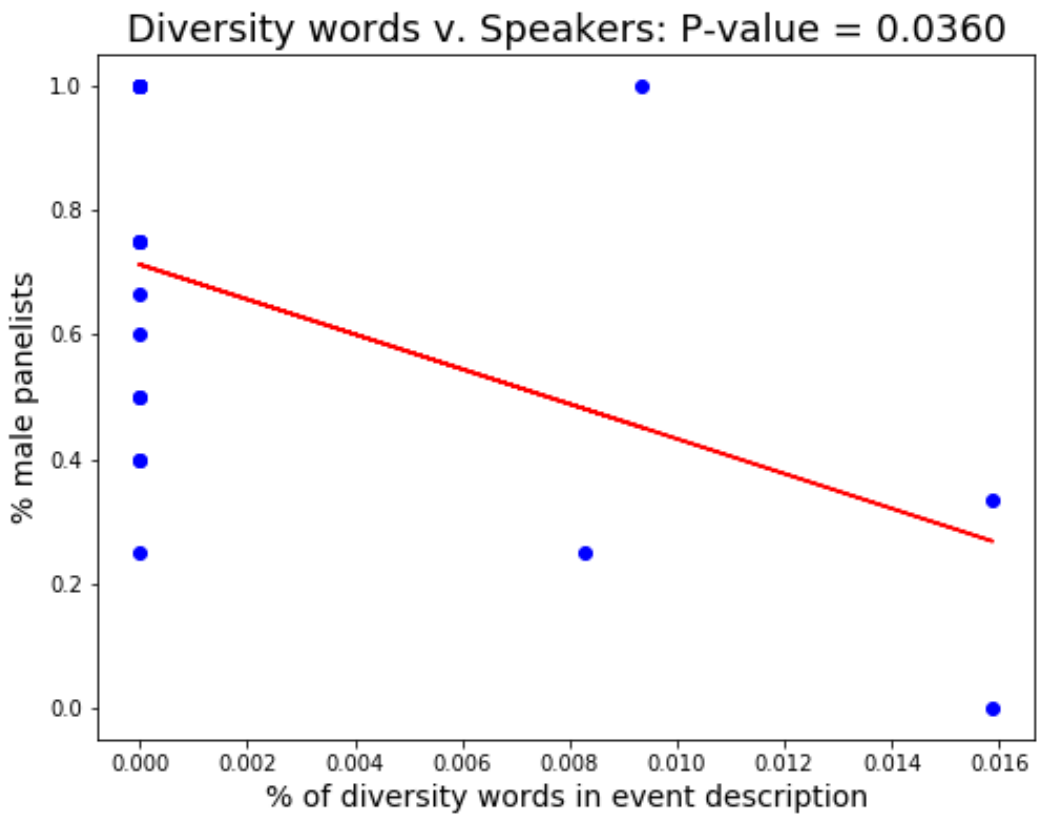
STEM

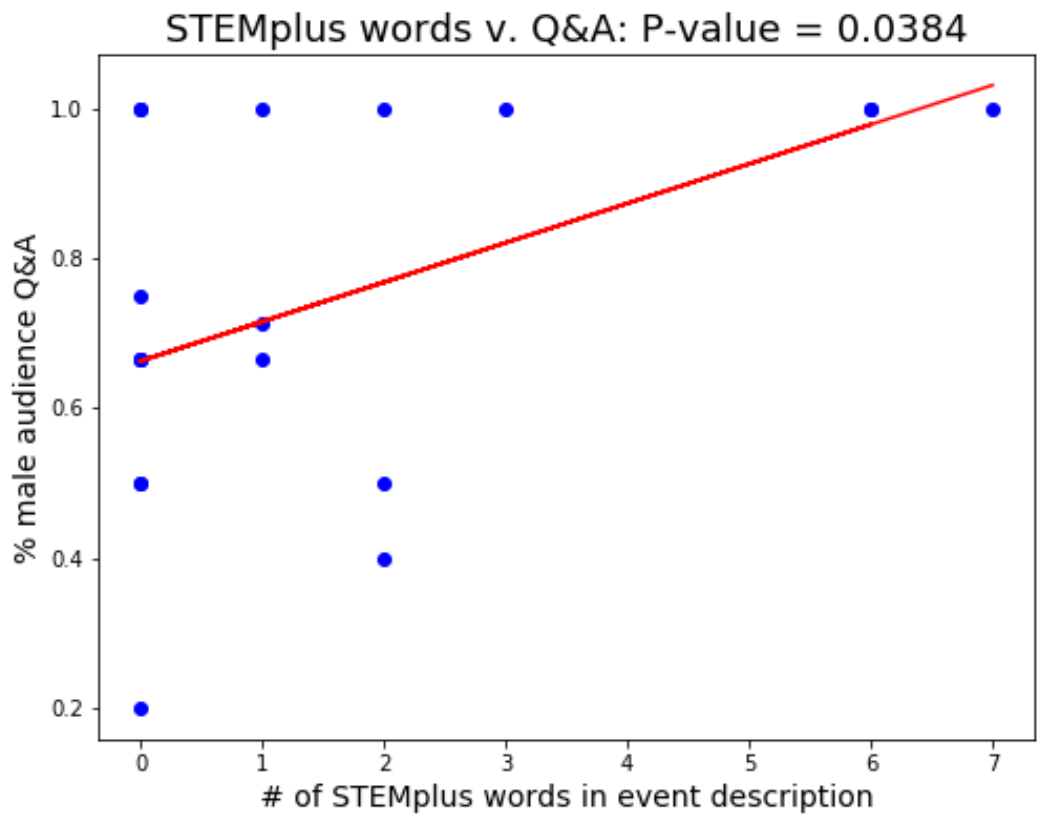
science
technology
engineering
mathematics
energy
electricity
earth
moon
mars
orbit
space
NASA
nuclear
laboratory
digital

Diversity

diversity
representation
minorities
women
females
diverse
identity
income
color

Figures 7 & 8: Topic Words





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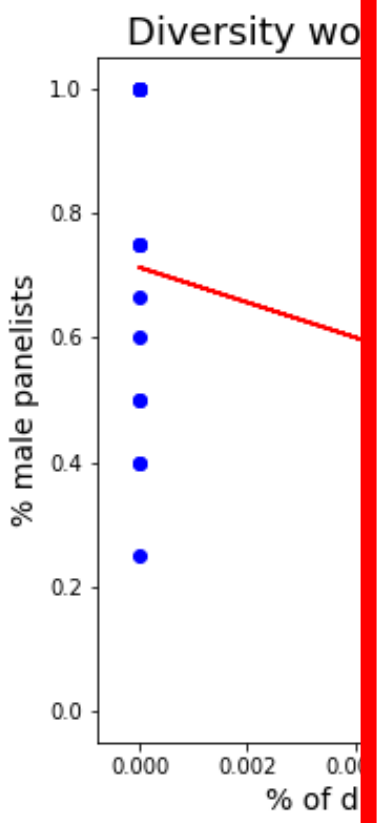

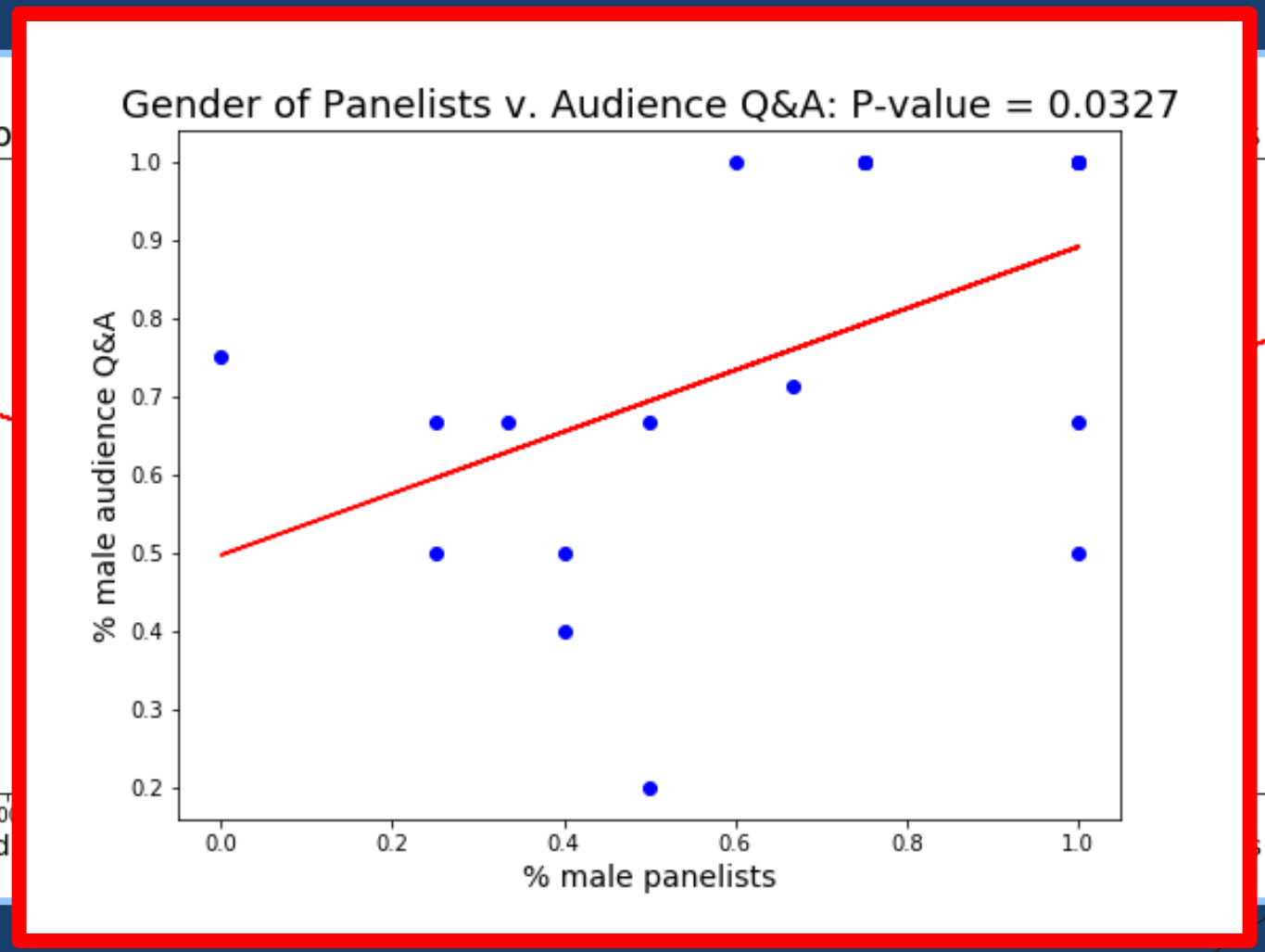

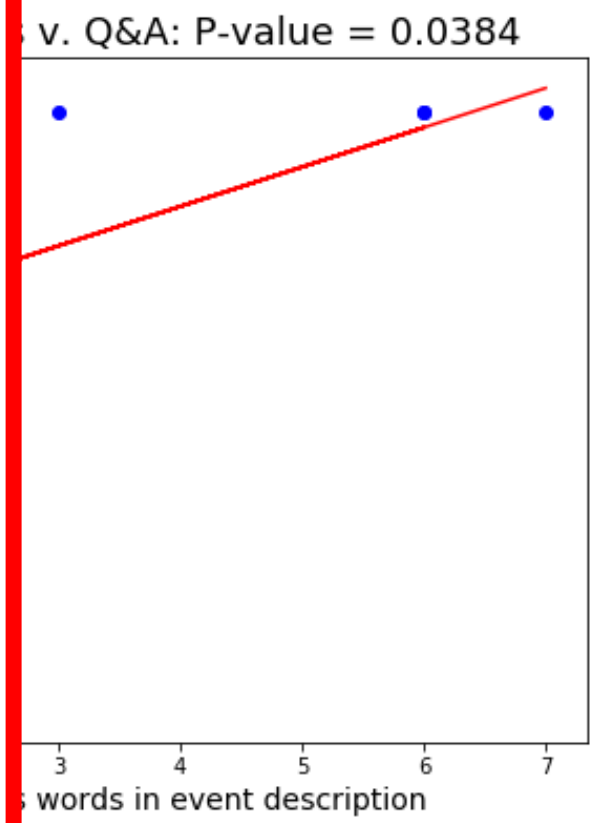

Conclusions

- Event Demographics
  - Correlation between panelist and Q&A gender ratios
  - To improve:
    - More data
    - Hire a psychologist
    - Learn machine learning
- Bipartisanship
  - Ironically partisan
  - Could be declining with time
  - Need a way to look at interpersonal interactions

Sources

- www.dictionary.com
  - Specifically, the words “hidden” and “figure”
- www.congress.gov
  - Science Committee data from 107th Congress to 116th Congress
- www.hillhappenings.com
  - Event titles and descriptions

QUESTIONS?

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