FOUR THINGS
WOMEN IN DATA SCIENCE CAN LEARN FROM
GAME OF THRONES
JENNIFER LEWIS PRIESTLEY
FIRST OF MY NAME
QUEEN OF THE P VALUES
GRADER OF RESEARCH PAPERS
MOTHER OF DATA
What is the best way to get more women into analytics? Don’t make them into men.
SEASON ONE

AERYS TARGAREAN

ROBERT BARATHEON

TYWIN LANNISTER
EDDARD STARK
ROOSE BOLTON
BAYLON GREYJOY
WALTER FREY
SEASON SEVEN

DAENERYS TARGAREAN

X

HOUSE BARATHEON

CERSEI LANNISTER
Sansa Stark
HOUSE BOLTON
YARA GREYJOY
HOUSE FREY
“Season One” in STEM

The share of women in life and physical sciences has gone up but it has gone down for computer jobs since 1990

Share of women in each of the following science, technology, engineering, and math occupations over time

- Health-related: 75%
- Life science: 47%
- Math: 46%
- Physical science: 39%
- Computer: 25%
- Engineering: 14%

Note: Based on employed adults ages 25 and older. Engineering includes architects.
“Of men with science, technology engineering, or math degrees, 40 percent work in technical careers; only 26 percent of women with STEM degrees do. That means that qualified women are turning away from the field before they even get started.”

Puncturing the pipeline: Do technology companies alienate women in recruiting sessions?, published February, 2018
“Season One” in Technology Careers
LESSON 1: THE TRUTH IS ONE BUT THE PATHS ARE MANY
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Data Scientists by Area of Study (all levels)

- Math/Stat: 30%
- Engineering: 20%
- Computer Science: 17%
- Laboratory Sciences: 16%
- Social Sciences: 14%
- Business/OR: 8%
- Medical Sciences: 4%

0% 5% 10% 15% 20% 25% 30%
“Person who is better at statistics than any software engineer and better at software engineering than any statistician” – Josh Wills, Director of Data Engineering at Slack
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“Person who is better at explaining the business implications of the results than any scientist and better at science than any MBA”
– Jennifer Priestley, Data Nerd
Lesson 2: Inclusion is an advantage
Lesson 2: Inclusion is an advantage
LESSON 2: INCLUSION IS AN ADVANTAGE

“2 D” Diversity: inherent/acquired

- 45% likelier to grow market share
- 70% likelier to capture new market/segment (a team member who shares a client’s gender/ethnicity is 152% likelier to win the business)

- Women are 20% less likely to win endorsement for ideas
- People of Color are 24% less likely
- LGBT are 21% less likely
In middle school, 74% of girls express interest in STEM. Yet, only 0.4% of high school girls choose computer science as a college major.

In 2014, 30% of women in Science, Engineering and Technology positions felt extremely isolated.

Are you looking to attend an all-male conference in #DataScience? #rinfinance2018 has got you covered! 100% male committee, 100% male speakers, no Code of Conduct. Yes, this is 2018! rinfinance.com #BinderFullofMen
How well do IBM, Microsoft, and Face++ AI services guess the gender of a face?
Researchers examined facial recognition software from Microsoft and IBM:

- error rates determining the gender of light-skinned men were <.08%
- for darker-skinned women were as high as 34%
- researchers at one company claimed accuracy rate >97%, but data set used was >77% male and >83% white

As AI penetrates more and more of our lives, diversity and inclusion matter more than ever
LESSON 3:

You know nothing, Jon Snow.
Your body language may shape who you are
LESSON 4: BEHIND EVERY GREAT WOMAN IS ANOTHER WOMAN...

...OR A MAN WHO DRINKS A LOT
An insidious reason women are less likely to get a STEM doctoral degree than men

An Ohio State University study reveals that in order to succeed, women need to be around other women.

The reason women aren’t graduating from science, technology, engineering and math doctoral programs stems from the fact that they’re the minority.
“Season Two” in Technology
One University’s “Season Two”

✓ Ph.D. Program in Analytics and Data Science: 9 out of 21 students are female.

✓ MS in Applied Statistics: 21 out of 57 students are female.

✓ Undergraduate Program in Applied Statistics and Data Analysis: 72 out of 150 students are female.
Sorry, all you Game of Thrones fans — Milan Janosov, a Ph.D. candidate at the Central European University Center for Network Science, thinks the Mother of Dragons is "quite likely to die," with other popular characters like Arya Stark and the Hound likewise in "dangerous positions."

Why? Science! Data science, to be more precise.