



MERAKINOS

# The Imperative to Increase Data Literacy



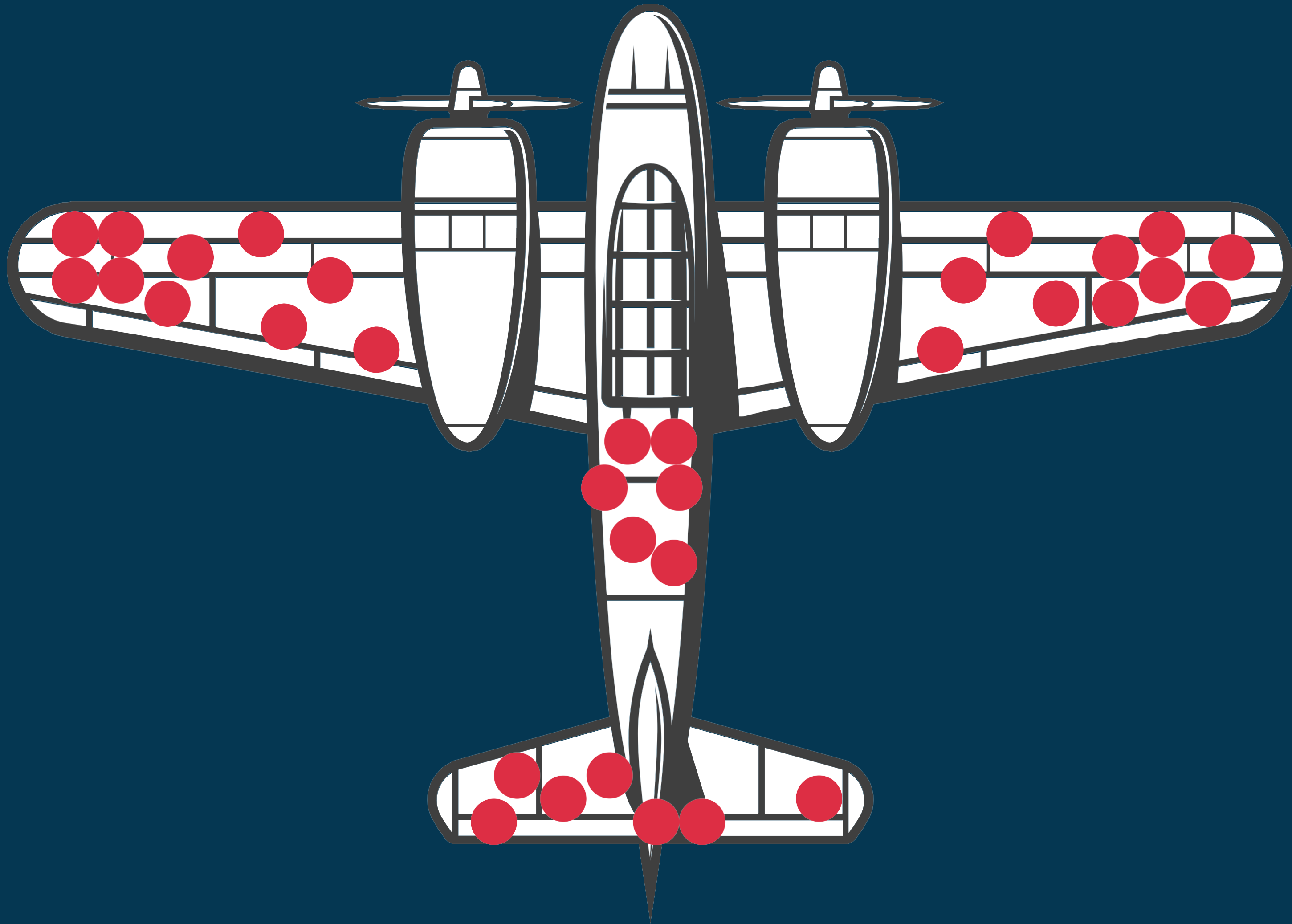
Alexandra Mannerings, PhD

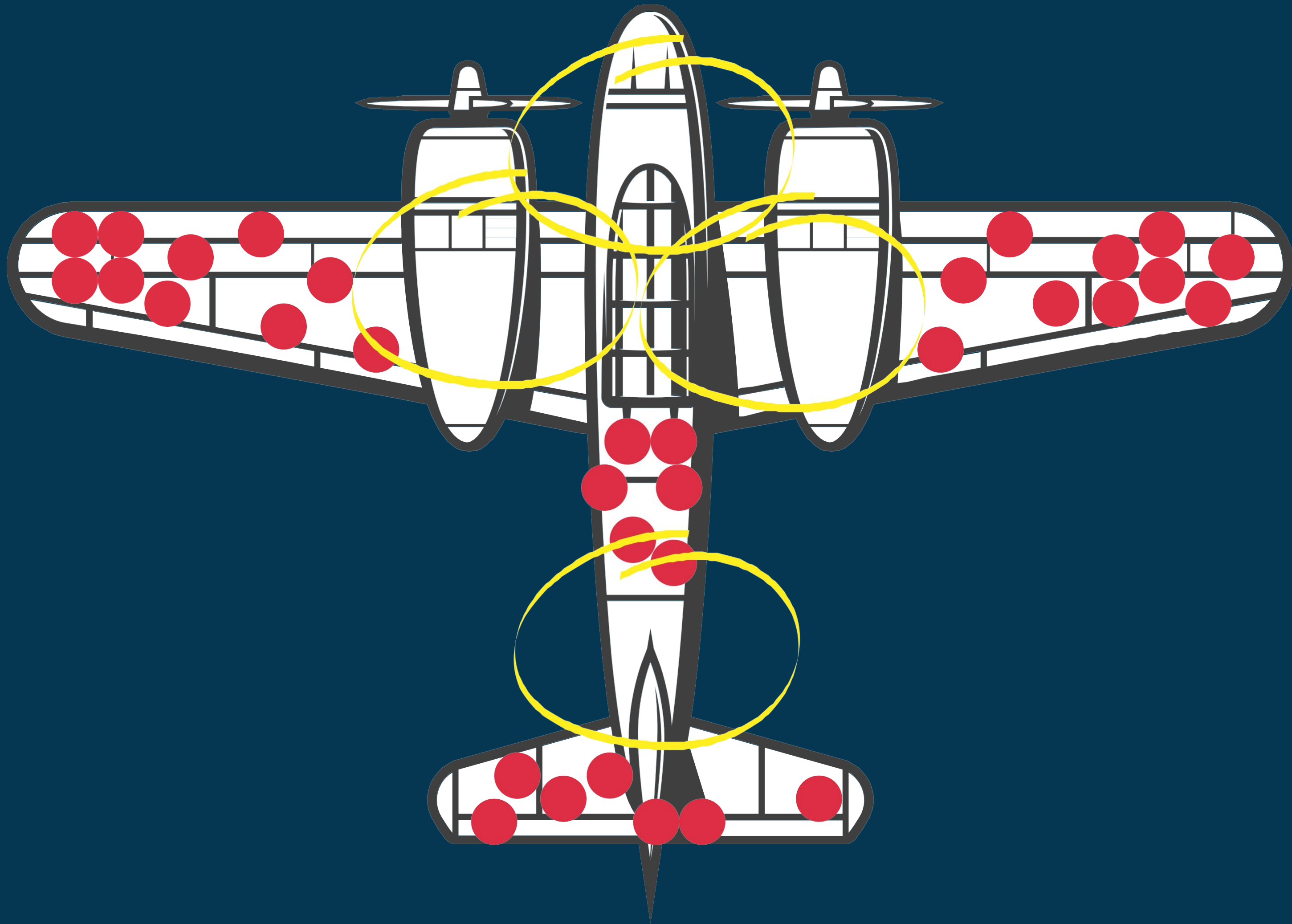




How do we better  
protect our planes?







# Wald didn't have to:

- collect the data
- do complicated math
- use fancy computer programs



# Who I Am



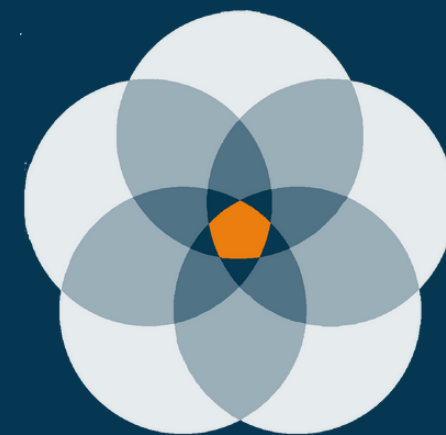
## SCHOLAR

PhD from the University of Cambridge, UK



## SCIENTIST

Researching across multiple continents



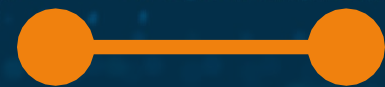
## ENTREPRENEUR

Founded and run [Merakinos](#), an analytics education and data services company





# So what is Data Literacy...?







**literacy**

**['lidərəsē, NOUN]**

- 1. the ability to read and write.**
- 2. competence or knowledge in a specified area.**



The ability to **create,**  
**understand,** and **apply**  
analytics.



# Data literacy **isn't**:

- "being a numbers person"
- only for technical staff
- unattainable





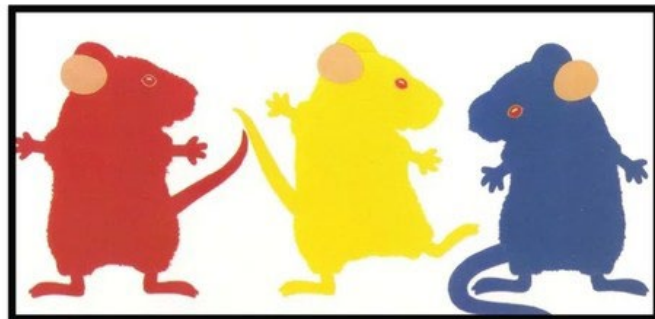
**Data** literacy is a subset of literacy, and just as important.



# TYPES OF LITERACY

## Fundamental

Then one was red, one was yellow,  
and one was blue.



## Technical/Specialist

"The appendix it is a concentrate of lymphoid tissue resembling Peyer's patches. It produces immunoglobulin A, regulates intestinal flora, and hosts commensal bacteria."

## Contextual, Cultural

*"In the end, the shadow is  
but a passing thing."*



# TYPES OF DATA LITERACY

## FOUNDATIONAL

*Fundamental skills to find, read, and interpret data.*

**Confident**

**Shopper Informed**

**Citizen Frontline**

**Worker**

## USER

*Ability to interact with and apply data to complex decisions; synthesize data across multiple sources.*

**Information Worker**

**Manager/Leader**

## CREATOR

*Data production knowledge; technical & specialist skills*

**Analyst**

**Report Builder**

**Data Scientist**

**Data Manager**

# SKILLS OF DATA LITERACY

## FOUNDATIONAL

- Arithmetic
- Comparisons
- Contextualization
- Reading data viz
- Ask interpretation questions
- Make a decision

## USER

- Critical questioning
- Reapplication
- Drilldowns, filters
- Extrapolation
- Recombination
- Generate simple data
- Basic manipulation

## CREATOR

- Advanced data generation
- Visualizations
- Analysis
  - Algorithms
  - Statistics
- Data quality control



# Using Data Literacy





# EVERYDAY DATA LITERACY

2 Liter Bottle

 <p>Old El Paso TORTILLAS, CHILIES TACO SHELLS, SAUCE OR REFRIED BEANS Selected Varieties, 4.5-16 oz.</p> <p><b>\$1</b></p>	 <p>Jif PEANUT BUTTER Selected Varieties, 15.5-16 oz.</p> <p><b>\$2</b></p>	 <p>Ragu PASTA SAUCE Selected Varieties, 45 oz.</p> <p><b>2/\$5</b></p>	 <p>Betty Crocker HAMBURGER HELPER Selected Varieties, 4.7-7.6 oz.</p> <p><b>\$1</b></p>
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 **piggly wiggly**

Prices Effective: Wednesday, July 26, 2017 through Tuesday, August 1, 2017  
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4933 AL HIGHWAY 157, CULLMAN, AL / 256.734.2560  
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## WARNING

This product contains  
a chemical known to  
The State of California  
to cause cancer.

# EVERYDAY DATA LITERACY

2 Liter Bottle

Old El Paso  
TORTILLAS, CHILIES  
TACO SHELLS, SAUCE  
OR REFRIED BEANS  
Selected Varieties, 4.5-16 oz.  
**\$1**

Jif  
PEANUT BUTTER  
Selected Varieties,  
15.5-16 oz.  
**\$2**

Ragú  
PASTA SAUCE  
Selected Varieties, 45 oz.  
**2/\$5**

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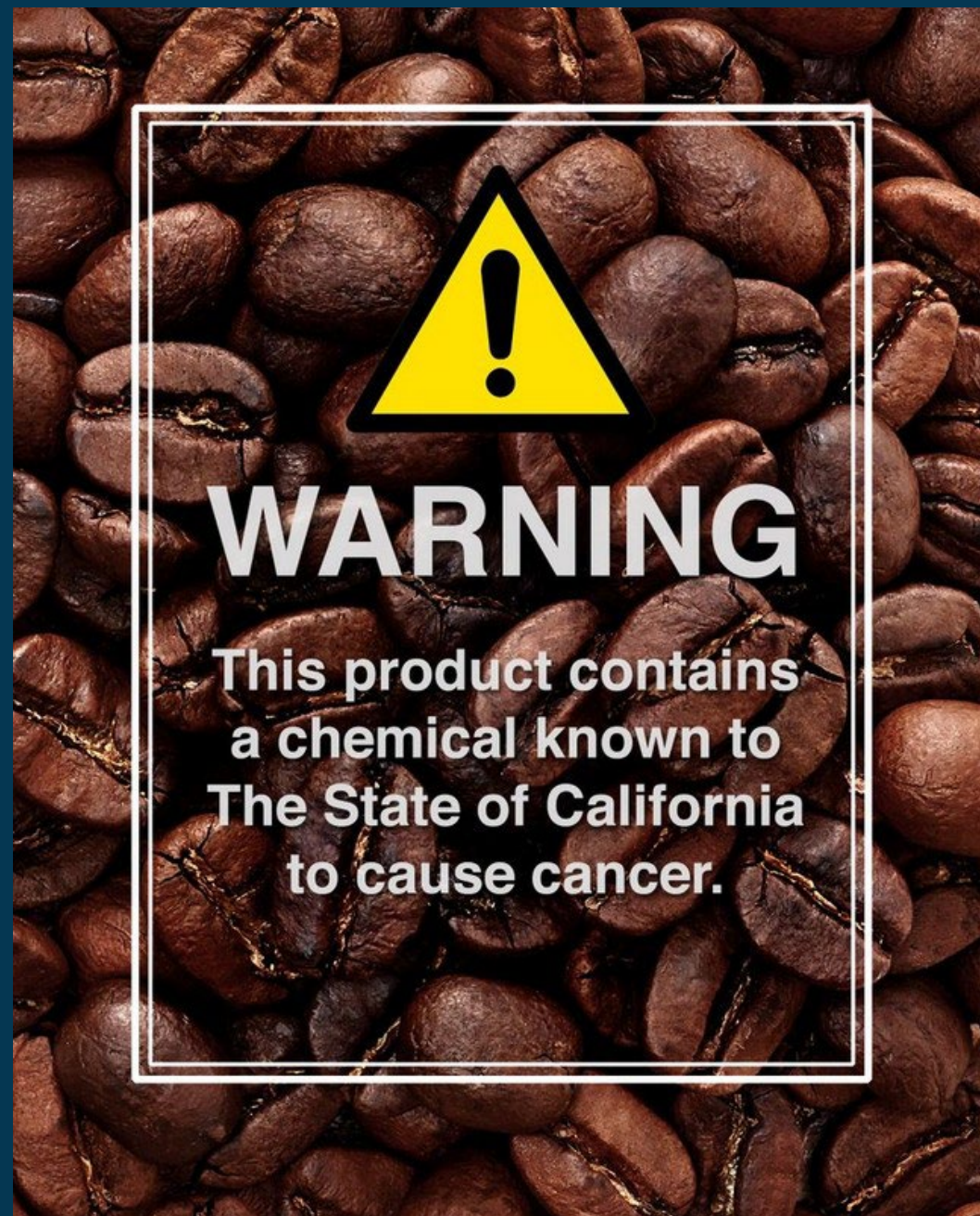


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# EVERYDAY DATA LITERACY



# EVERYDAY DATA LITERACY

How does  
probability work?

**Relative vs  
absolute risk**



# EVERYDAY DATA LITERACY

How does probability work?

Relative vs absolute risk



Can I recognize manipulated data?

Correlation vs. causation



# PROFESSIONAL DATA LITERACY



? **How likely is a donor to respond to different kinds of appeals?**

? **Did this new program move us closer to our mission?** (Fewer hungry, fewer homeless, more cat adoptions...)

? **Are we sustainable? Can we last?**



# Why should orgs invest in **DATA LITERACY?**

- Retain and support staff
- Survive the rise of "Impact Investing"
- Steward your data resources
- Accomplish your mission







## THE IMPERATIVE

# Retain Your Staff

- The Great Resignation is hitting hard
- Resource limits squeeze salaries
- Investing in your staff shows they matter
- Data literacy strengthens both job skills and life skills





## THE IMPERATIVE

# Leverage Impact Investing

- Impact investing grew over 40% in the last year
- Biggest foundations are requiring program evaluation
- Successful evaluation - and implementation of findings - requires organizational data literacy



A black and white photograph of a hand holding a lock icon, with several other lock icons scattered around it. The background is dark, and the hand is in the foreground, holding the lock icon. The lock icon is a simple line drawing of a padlock.

## THE IMPERATIVE

# Steward Your Data

- You have data
- It's valuable
- Some of it belongs to others
- Responsibly managing data requires organizational data literacy





## THE IMPERATIVE

# Accomplish Your Mission

- Give yourself a navigational compass
- Reduce decision friction
- Honor the investments you and donors make



How can you  
**increase** literacy?





## INCREASING LITERACY

# Take a Data Inventory

- What data do you have (internal and external)?
- Where do your data live?
- Where do your data come from?
- How are your data managed?
- Who "owns" and who uses your data?





## INCREASING LITERACY

# Document Your Missing Planes

- Who is - and *isn't* - in your data?
- How complete are your data?
- What context is needed to correctly interpret the data?
- Are there specific limitations/'no-go' areas?





## INCREASING LITERACY

# Do a Gap Analysis

- What information do people currently use?
  - For what?
  - Are they using it appropriately?
- What do they need or wish they had?
- What barriers are there to getting or using data?
  - Awareness?
  - Confidence or permission?
  - Specific skills/training or tools?







## INCREASING LITERACY

# Socialize Data

- Data are everyone's job
- "Data & Donuts Day," lunch & learns
- Formally set aside time in key decision-making meetings for data discussions
- Create reference cards with recurring analytic questions around your topics





## INCREASING LITERACY

# Develop a Data Ambassador Program

- Explicitly design and assign this role
- Official data staff mentor 'citizen' data staff
- Invest (\$, time) in training
- Facilitate information dissemination, engagement, and impact
- Connect with frontline experts





## INCREASING LITERACY

# Include in Onboarding & Regular Training

- Share data manuals and maps
- Create a shared vocabulary and understanding
- Update staff as new data develop
- Avoid "I didn't know that data existed!"
- Preserve institutional knowledge



## INCREASING LITERACY

# Bring in a Trainer

- It's ok not to know something!
- Self-education takes time and effort
  - Does your team have extra...?
- A coach or trainer can be more efficient and reduce frustration
- Share the investment across the org



# Data That Won the War





# Resources

## HEART, SOUL & DATA

A podcast for community organizations getting started with data. On all the platforms or [www.heartsouldata.com](http://www.heartsouldata.com).

## GET THE SLIDES & MORE

[www.merakinos.com/data-days-cle](http://www.merakinos.com/data-days-cle)

## MERAKINOS

Visit me and my company at [www.merakinos.com](http://www.merakinos.com)

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