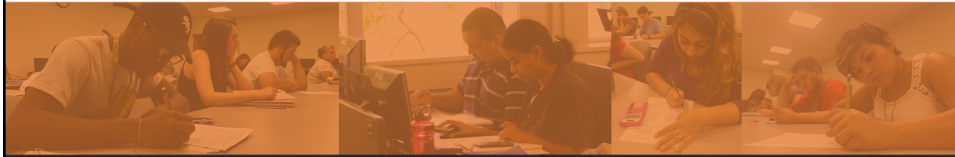




## Developing Statistical Literacy in High School Students

Josh Recio, Course Program Specialist  
Kathi Cook, Manager, Online Course Programs

July 17, 2018



## Engage with the Dana Center

---



[facebook.com/utdanacenter](https://facebook.com/utdanacenter)



[@UTDanaCenter](https://twitter.com/UTDanaCenter)

Conference Hashtag: #gotmath



## About the Dana Center

---

— Equity — Access — Excellence —

## Dana Center by the Numbers

---



## Dana Center by the Numbers

By the close of 2017, the Dana Center had contributed to the **implementation of math pathways** in higher education systems, institutions, and campuses in **29 states**.



## Dana Center by the Numbers



We engaged with **118 districts in 23 states** to provide middle and high school math courses of the **highest quality**, as recognized by rigorous national and state reviews, including EdReports.org, Louisiana Department of Education, and Texas Education Agency panels.

## What the Standards Tell Us

---

- **G.13.C – identify whether two events are independent and compute the probability of the two events occurring together with or without replacement**
- **G.13.D – apply conditional probability in contextual problems**
- **G.13.E – apply independence in contextual problems**

## Conditional Probability and Independence

---

$$P(B|A) = \frac{P(A \text{ and } B)}{P(A)}$$

Two events are said to be independent if  
 $P(B|A) = P(B)$

## What the Standards Tell Us

---

- **AQR.4.A – use a two-way frequency table as a sample space to identify whether two events are independent and to interpret the results**
- **AQR.4.D – interpret conditional probabilities and probabilities of compound events by analyzing representations to make decisions in problem situations**

## What the Standards Tell Us

---

- **S.5.A – determine probabilities, including the use of a two-way table**

## What the Standards Tell Us

---

- **A1.4.A – calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association**
- **A.1.4.B – compare and contrast association and causation in real-world problems**
- **A.1.4.C – write, with and without technology, linear functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems**

## What the Standards Tell Us

---

- **A2.8.B – use regression methods available through technology to write a linear function, a quadratic function, and an exponential function from a given set of data**
- **A2.8.C – predict and make decisions and critical judgments from a given set of data using linear, quadratic, and exponential models**

## What the Standards Tell Us

---

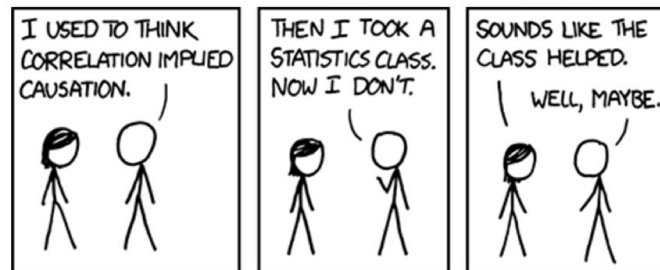
- **S.7.A – analyze scatterplots for patterns, linearity, outliers, and influential points**
- **S.7.B – transform a linear parent function to determine a line of best fit**
- **S.7.C – compare different linear models for the same set of data to determine best fit, including discussion about error**
- **S.7.D – compare different methods for determining best fit, including median-median and absolute value**

## Median-Median

---

53	4	(55.5, 5.5)	$y = \frac{1}{3}x - 13$
58	7		
62	6	(64.5, 8.5)	
67	11		
70	9	(72, 11)	
74	13		

## What's So Funny About Correlation?



Cartoon from xkcd.com

## Contact Information

**Josh Recio**

[josh.recio@austin.utexas.edu](mailto:josh.recio@austin.utexas.edu)

512.232.5994

**Kathi Cook**

[klcook@austin.utexas.edu](mailto:klcook@austin.utexas.edu)

512.232.5995

Visit the Dana Center at [utdanacenter.org](http://utdanacenter.org).

Find us on Facebook at [facebook.com/utdanacenter](https://facebook.com/utdanacenter) or on  
Twitter at [@UTDanaCenter](https://twitter.com/UTDanaCenter).