

**Data visualization**

Ashley Grantham, PhD  
Faye Haggar, EdD

1

**Learning objectives**

- Define data visualization
- Describe the ways people transform data into visual representation
- Identify opportunities for application of data visualization in GME
- Craft visual presentations of data for effective communication

2

**What is data visualization?**

- “The graphical representation of information and data”
- “An accessible way to see and understand trends, outliers, and patterns in data”

(Tableau, 2019)

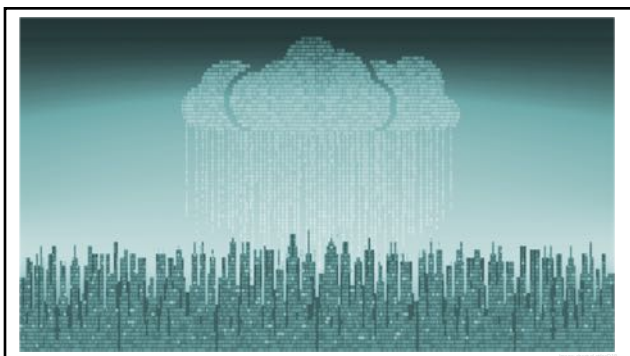
3

**How do you communicate training program trends with your program director?**

**With faculty members?**

**With trainees?**

4



5

**Information Visualization: Perception for Design**  
Colin Ware

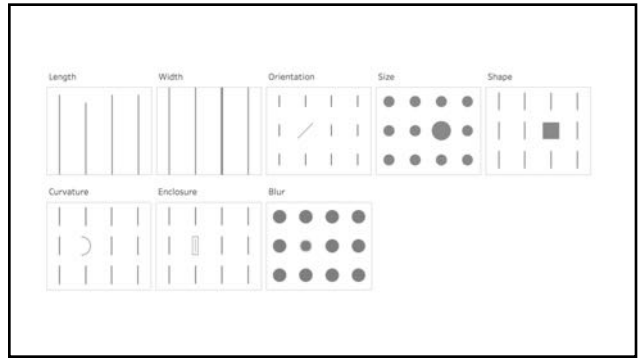
Preattentive visual properties

- Color
- Form
- Movement
- Spatial Positioning

6



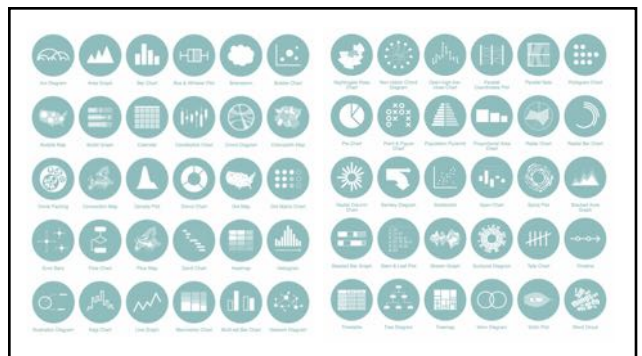
7



8

**How many chart types can you name?**

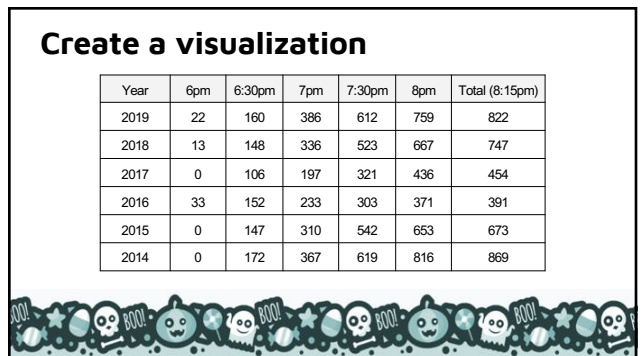
9



10



11



12

### Benefits of technology in data visualization

- Enables efficient analysis of large amounts of data
- Facilitates easy manipulation of data
- Can allow for “real time” updates

13

How could you use data visualization in your role in your program?

14

### Duke dashboard

- Tableau dashboard
- Partnership between education leadership and departmental IT

15

### Duke dashboard variables

- Test scores
- Clinical metrics including:
  - Anesthesia technique performed
  - Trainee OR hours
  - PACU LOS
  - ASA class

16

### Future applications

- Communicating trends
  - Program
  - Individual learning outcomes
    - Evaluation scores
    - Test scores
- Creating posters and presentations

17

#### References

Munzner, T. (2015). *Visualization Analysis and Design*. CRC Press.

Tableau. (2019). Data visualization beginner's guide: A definition, examples, and learning resources. <https://www.tableau.com/learn/articles/data-visualization>, Accessed October 15, 2019.

Ware, C. (2000). *Information visualization: Perception for design*. Morgan Kaufmann.

Wedler, S., Shaffer, J., & Cotgreave, A. (2017). *The big book of dashboards: Visualizing your data using real-world business scenarios*.

18