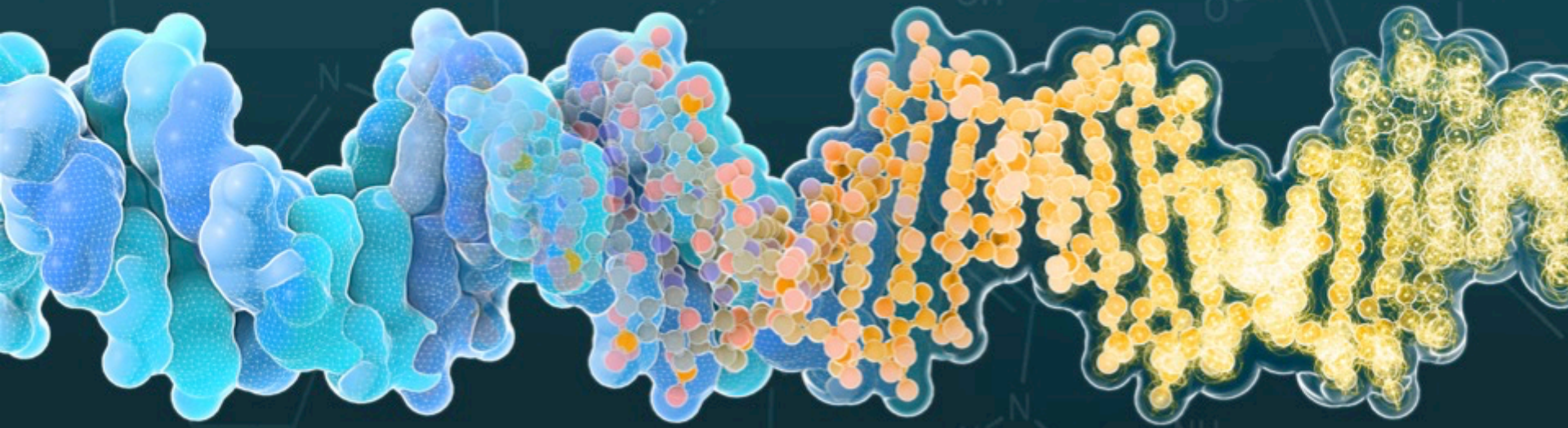
Visual Science Communication

Veronica Falconieri Hays, MA, CMI / Falconieri Visuals



Falconieri Visuals

A quick introduction...

Medical illustrator and principal of **Falconieri Visuals, LLC**, a medical & scientific illustration & animation company.

MA in Medical and Biological Illustration, Johns Hopkins
(BA in biological sciences and art, Smith College)

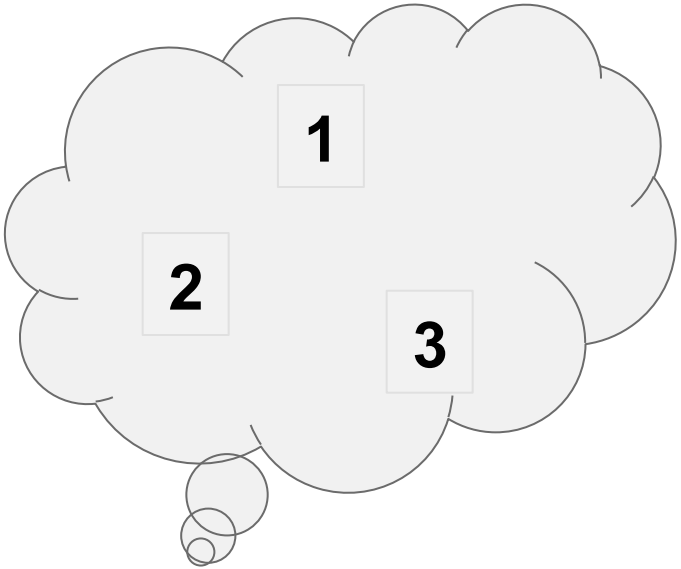
National Cancer Institute (NCI) 2014-2017. Founded Falconieri Visuals in 2017.

Falconieri Visuals

Top tips for visual #scicomm

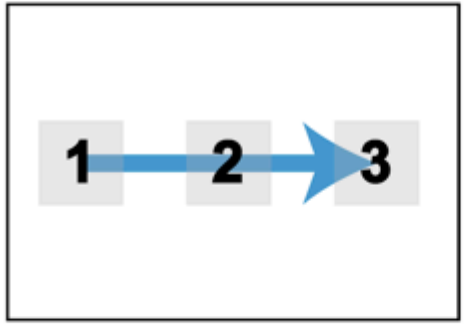
Falconieri Visuals

1. Plan ahead… don’t be afraid to draw!



Identify your content…

1. Plan ahead… don’t be afraid to draw!

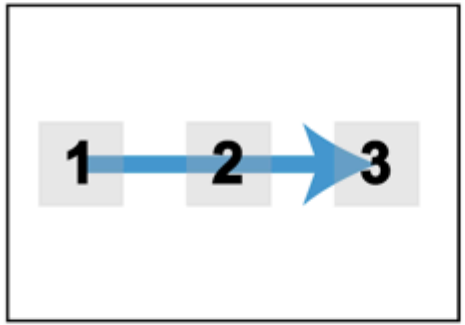


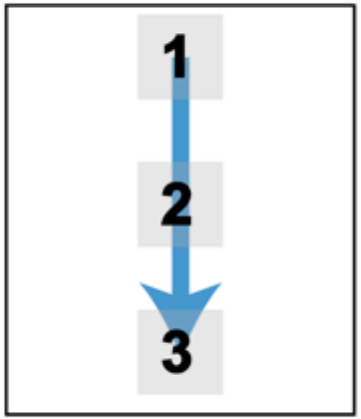
Identify your content…

…Then lay it out.

1. Plan ahead... don't be afraid to draw!

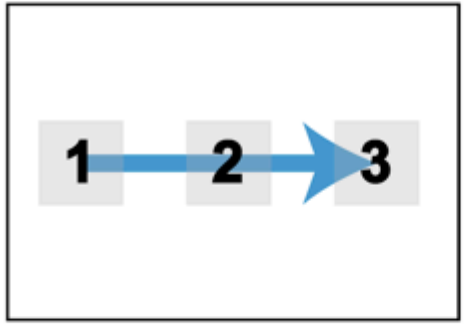
Linear

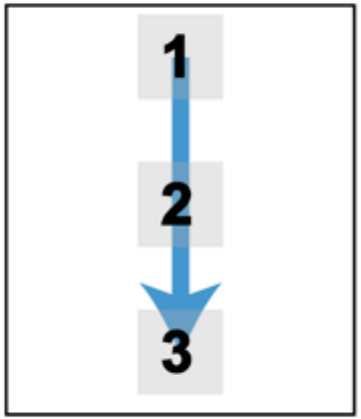




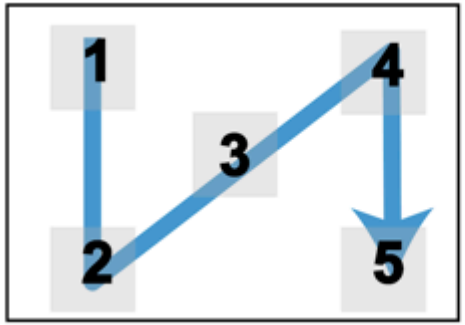
1. Plan ahead... don't be afraid to draw!

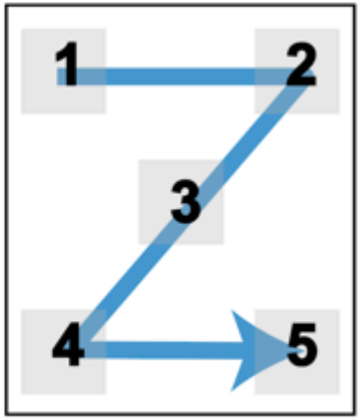
Linear





Z-Layout

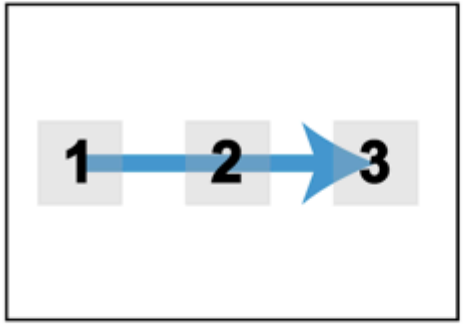


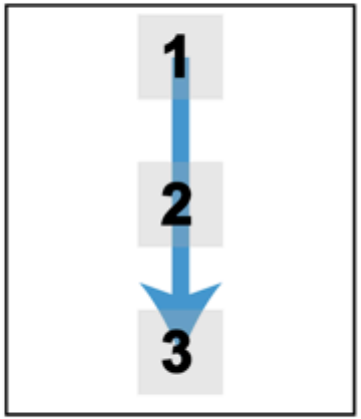


Falconieri Visuals

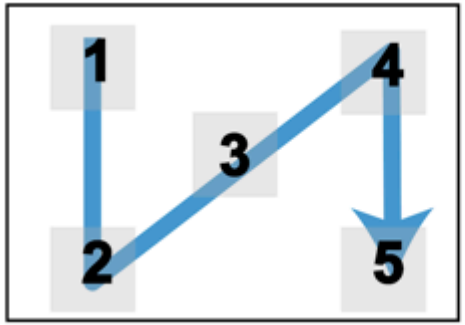
1. Plan ahead... don't be afraid to draw!

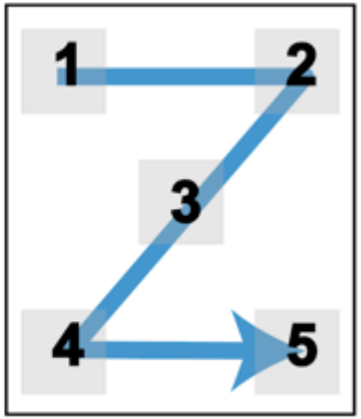
Linear



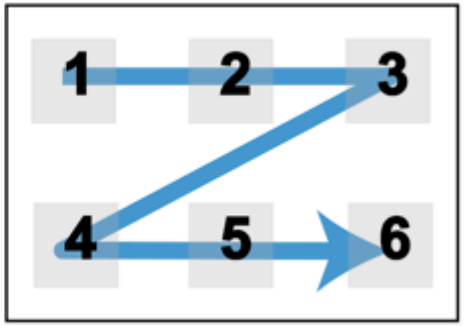


Z-Layout





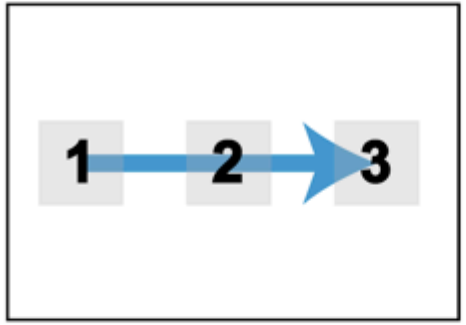
Yes ✔

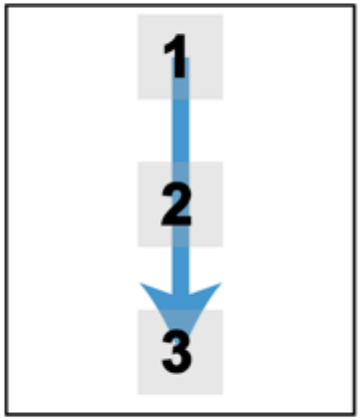


Falconieri Visuals

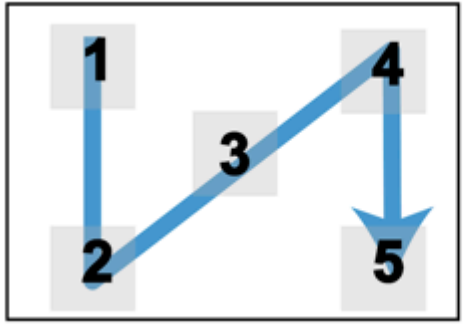
1. Plan ahead... don't be afraid to draw!

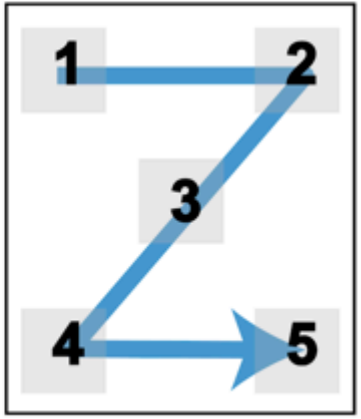
Linear



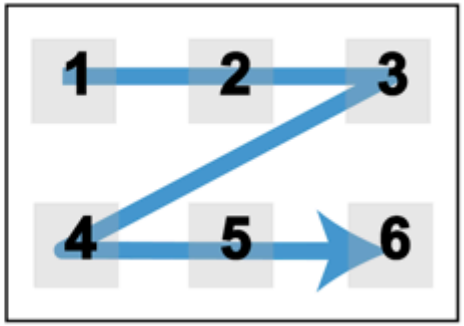


Z-Layout

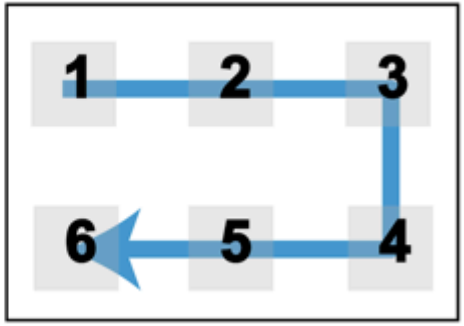




Yes ✔



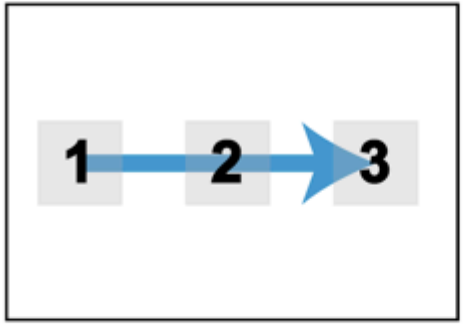
No X

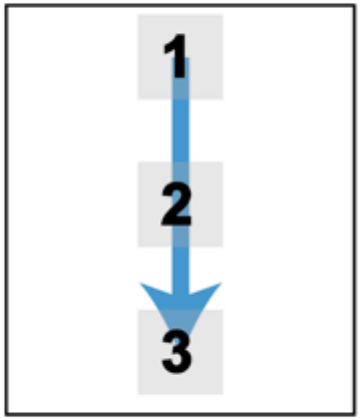


Falconieri Visuals

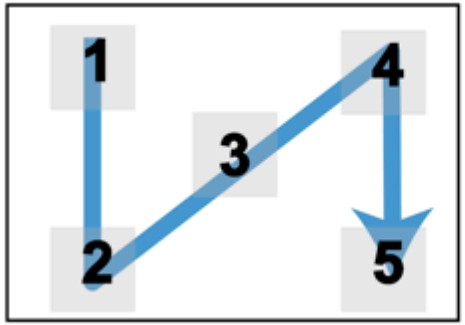
1. Plan ahead... don't be afraid to draw!

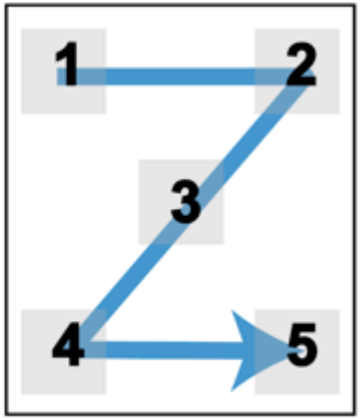
Linear



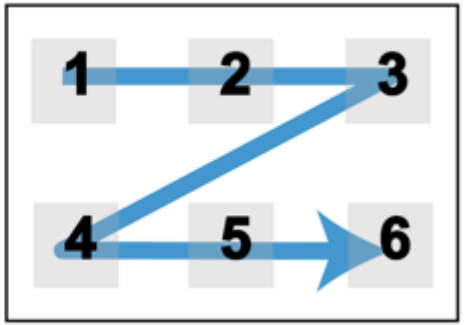


Z-Layout

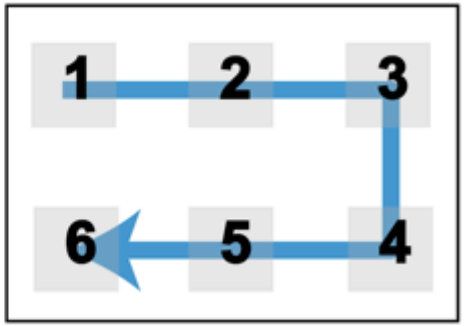




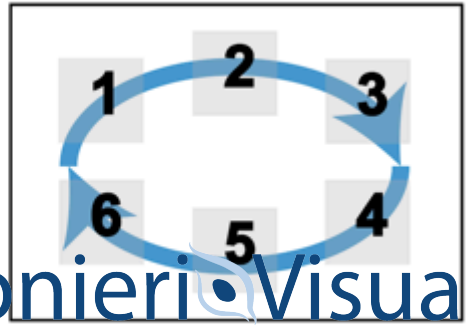
Yes ✔



No X

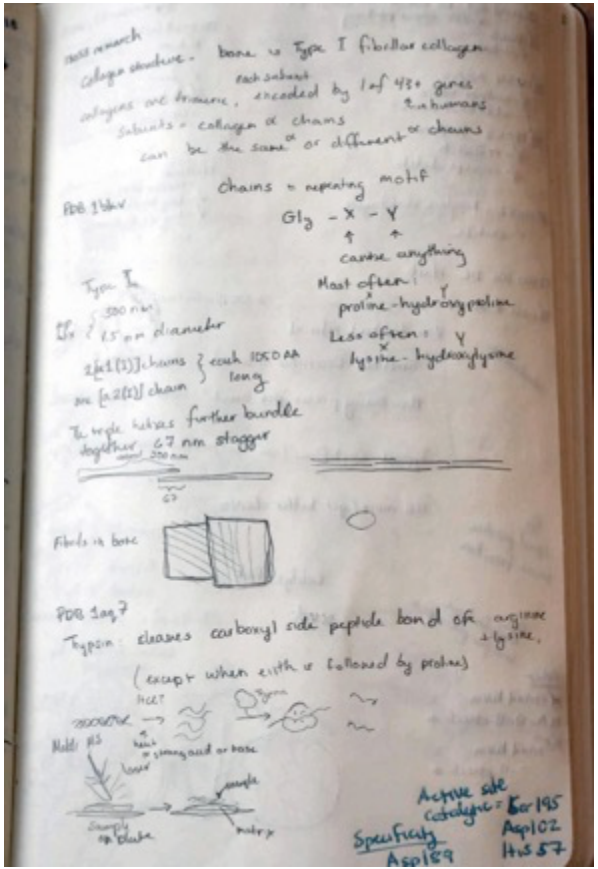


Yes ✔



1. Plan ahead… don’t be afraid to draw!

Identify your content…

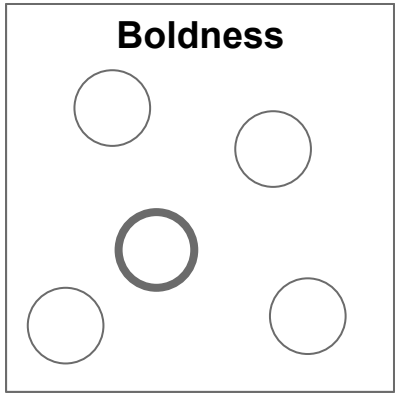


…Then lay it out.

Falconfen Visuals

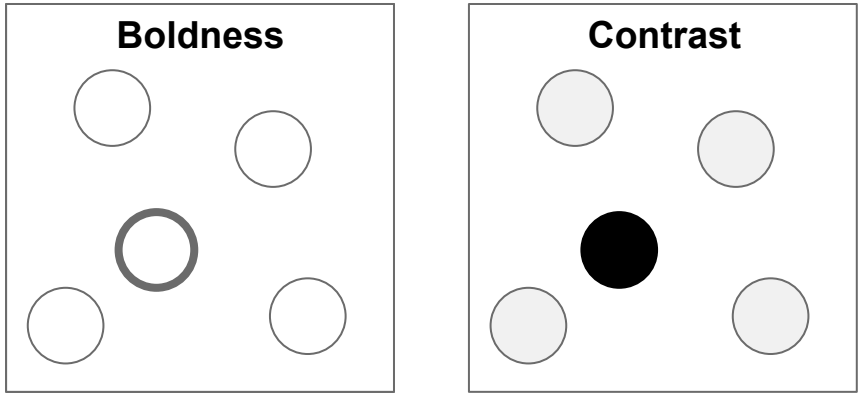
2. Emphasize main points

Non-color based methods:



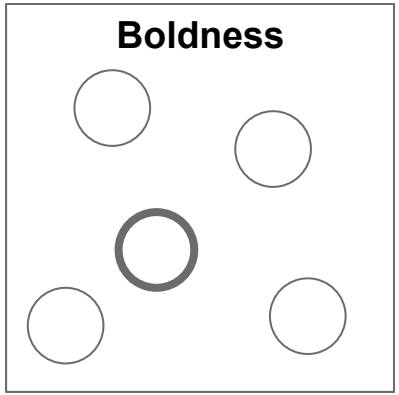
2. Emphasize main points

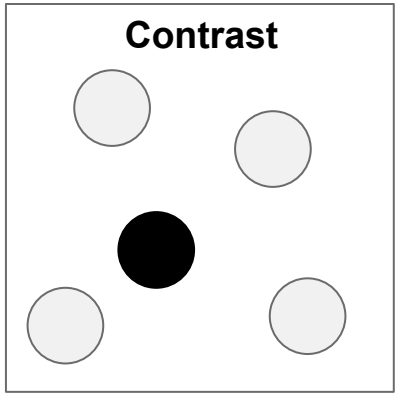
Non-color based methods:

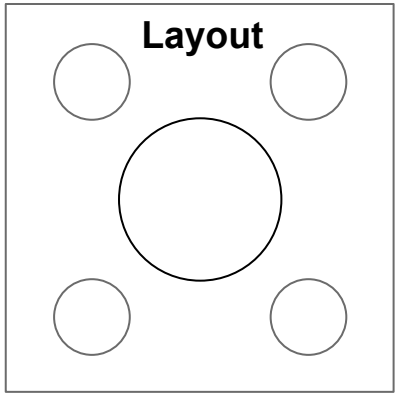


2. Emphasize main points

Non-color based methods:

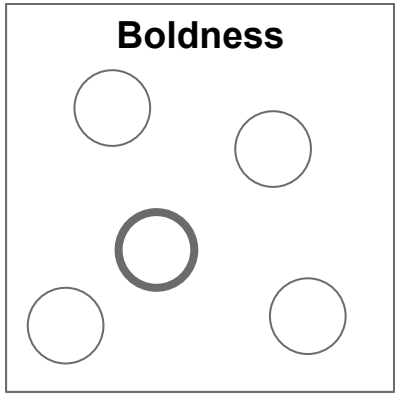


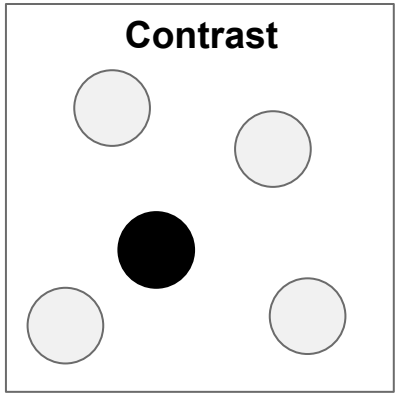


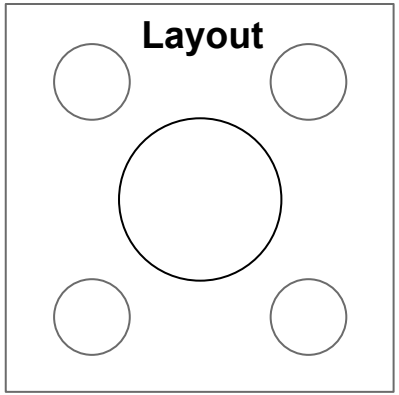


2. Emphasize main points

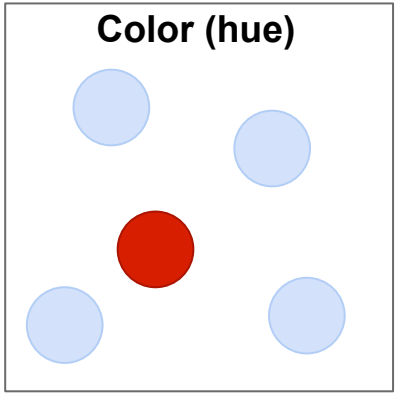
Non-color based methods:





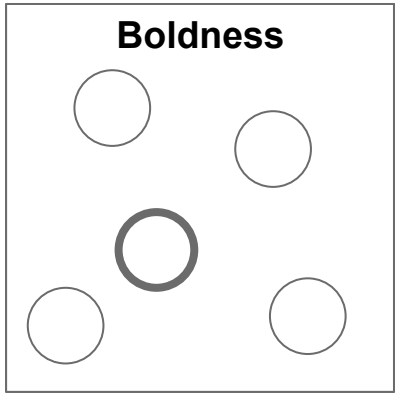


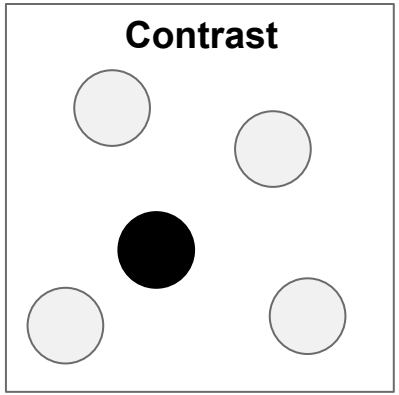
Color-based methods:

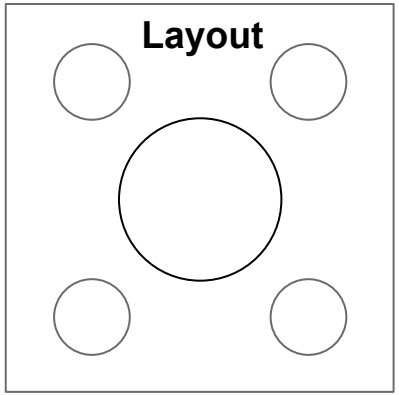


2. Emphasize main points

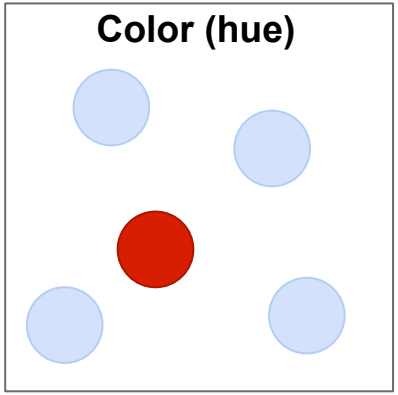
Non-color based methods:

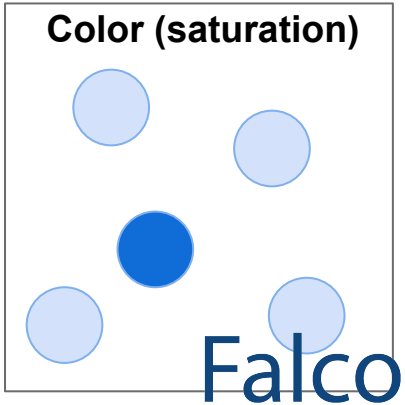






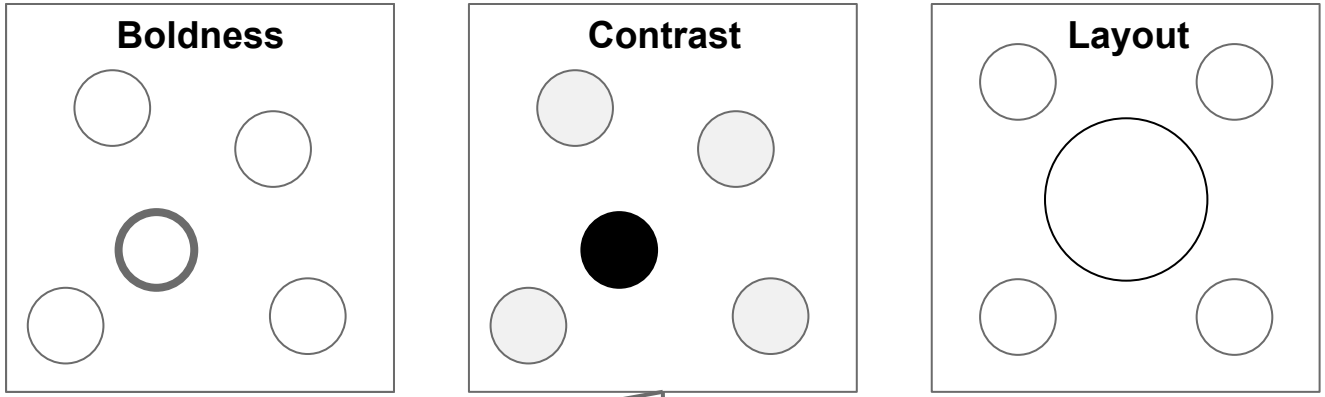
Color-based methods:



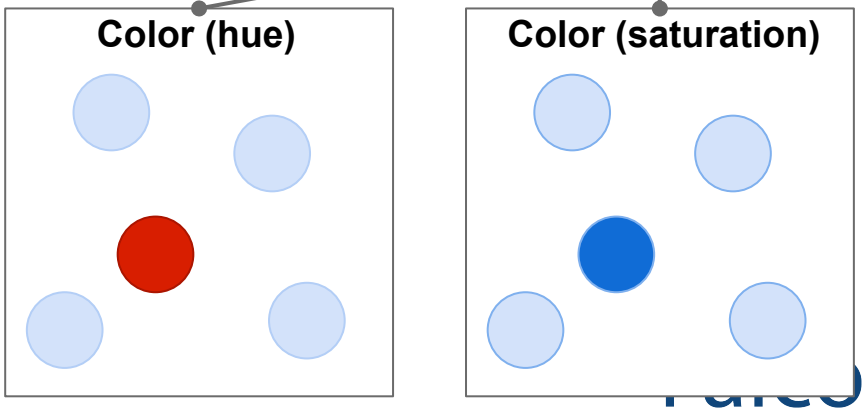


2. Emphasize main points

Non-color based methods:



Color-based methods:

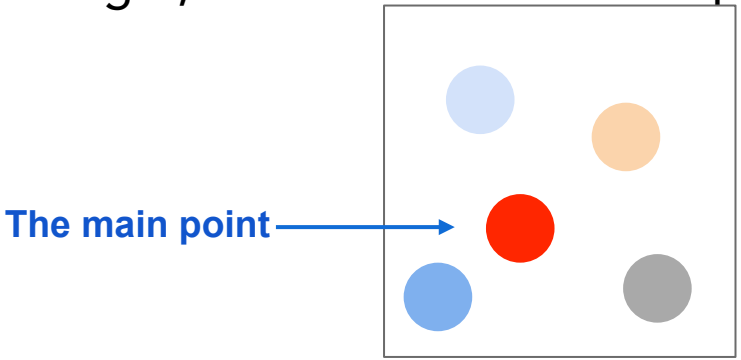


3. Use color strategically

Save bright, saturated colors for emphasis

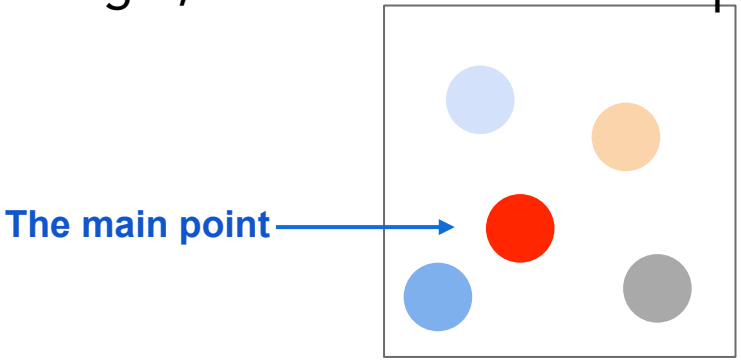
3. Use color strategically

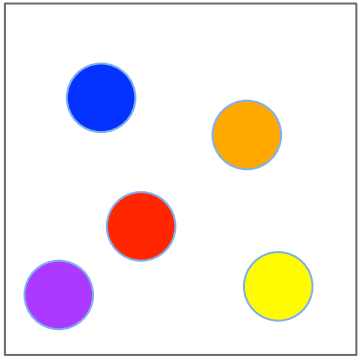
Save bright, saturated colors for emphasis



3. Use color strategically

Save bright, saturated colors for emphasis

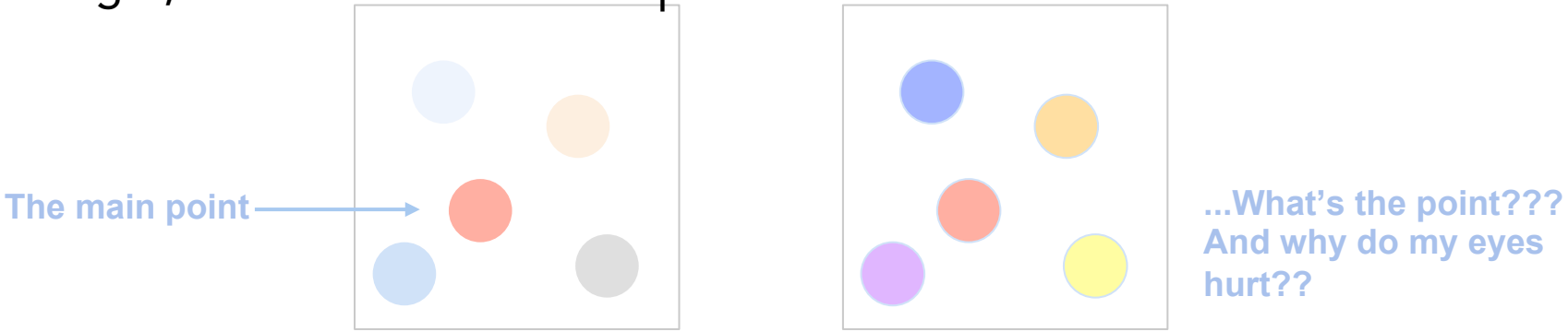




...What's the point???
And why do my eyes hurt??

3. Use color strategically

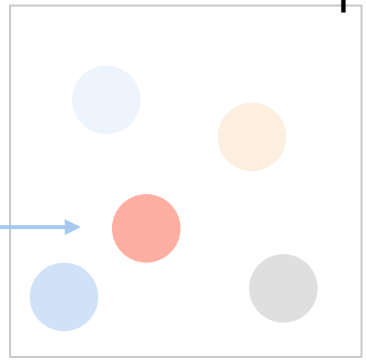
Save bright, saturated colors for emphasis

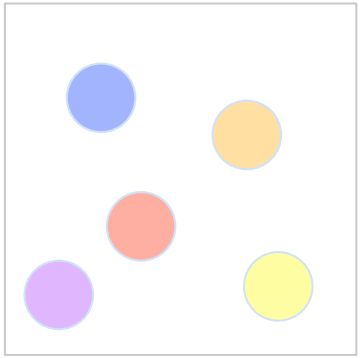


When using multiple colors to categorize, vary brightness as well as hue

3. Use color strategically

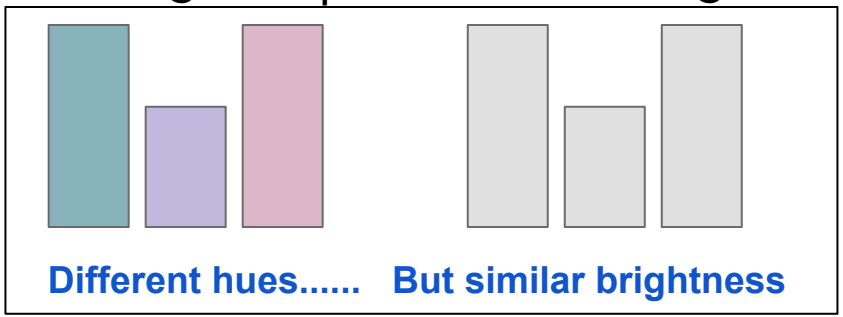
Save bright, saturated colors for emphasis





...What's the point???
And why do my eyes hurt??

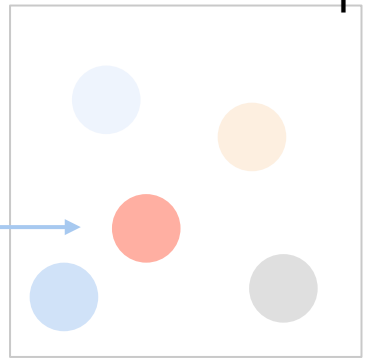
When using multiple colors to categorize, vary brightness as well as hue

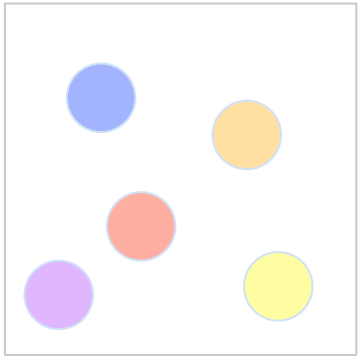


Falconieri Visuals

3. Use color strategically

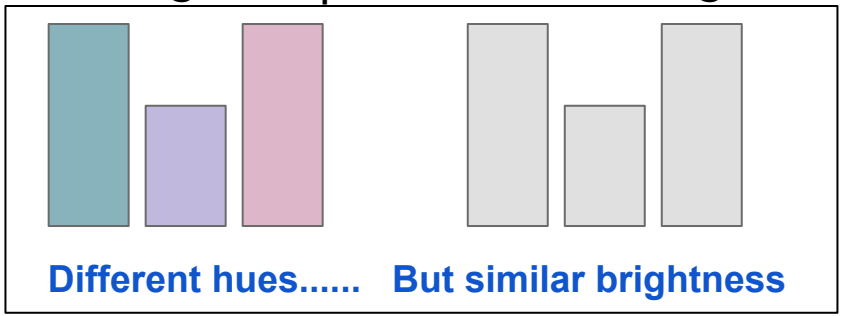
Save bright, saturated colors for emphasis

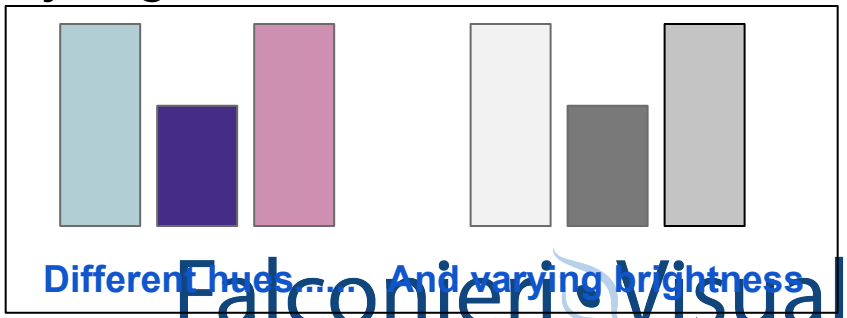




...What's the point???
And why do my eyes hurt??

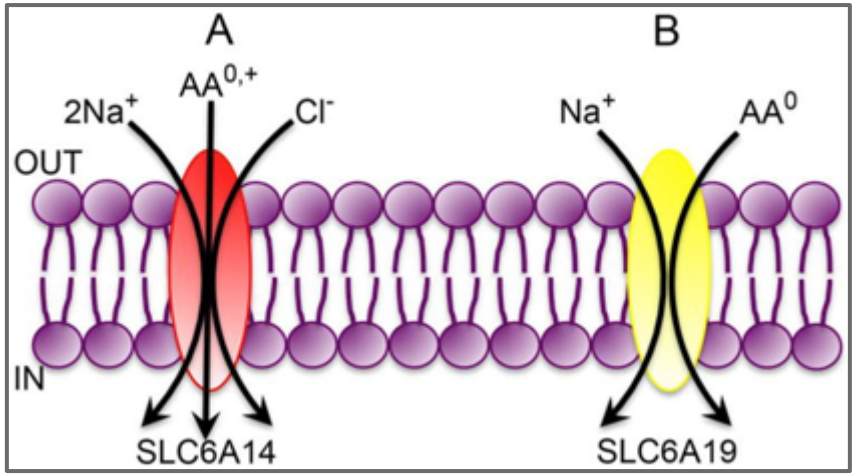
When using multiple colors to categorize, vary brightness as well as hue





3. Use color strategically

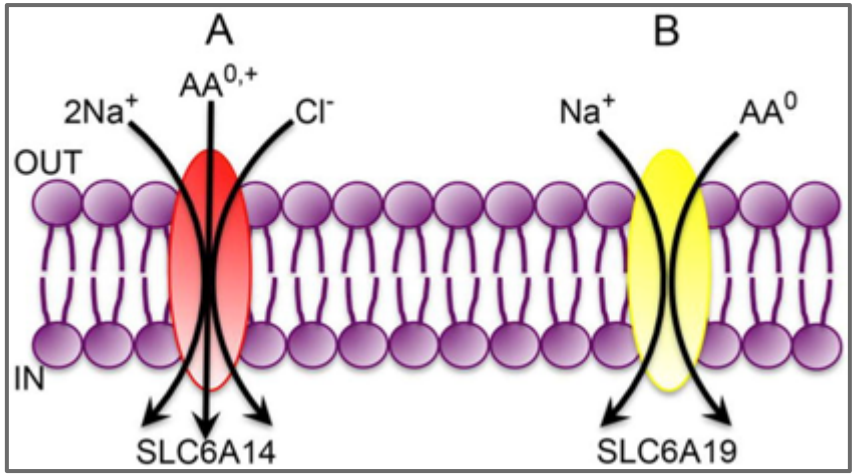
All the color



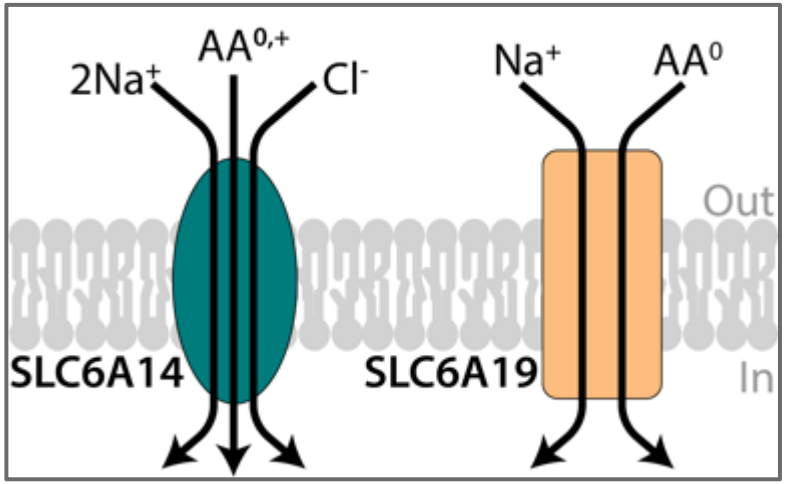
Bhutia YD, Ganapathy V. Glutamine transporters in mammalian cells and their functions in physiology and cancer. *Biochim Biophys Acta*. 2015;1863(10):2531-9.

3. Use color strategically

All the color



Strategic color



Bhutia YD, Ganapathy V. Glutamine transporters in mammalian cells and their functions in physiology and cancer. *Biochim Biophys Acta*. 2015;1863(10):2531-9.

Falconieri Visuals

4. Keep your fonts simple and readable

Use different weights of the same font for emphasis - It's sort of important...**Ok it's a big deal.... Actually it's a *really* big deal**

Don't go too light. Especially on slides.

Serif fonts are easier to read in paragraphs than san-serif fonts, but….

Sans-serif fonts are generally more readable than serif fonts for people with dyslexia

Comic sans is one of the most readable - but it's also too informal for many applications. (Also it can be polarizing).

4. Keep your fonts simple and readable

Use different weights of the same font for emphasis - It's sort of important...**Ok it's a big deal.... Actually it's a *really* big deal**

Don't go too light. E

Serif fonts are easier t

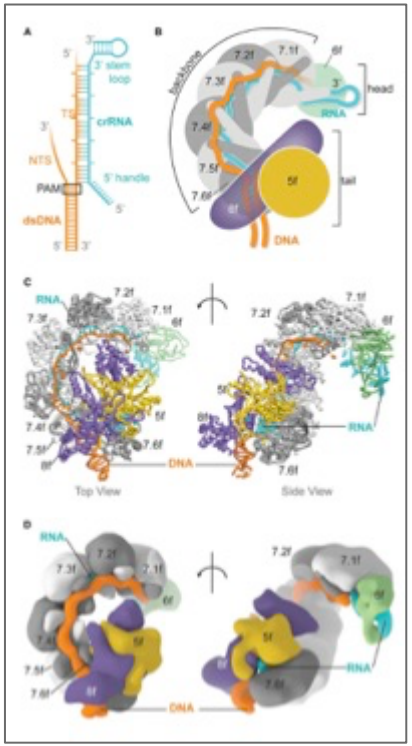
Sans-serif fonts are generally more readable than serif fonts for people with dyslexia

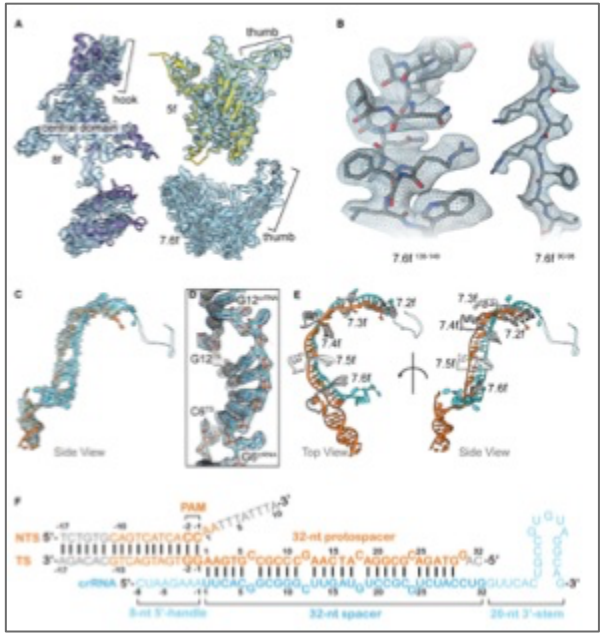
...And unless your content is about font varieties, **use just 1 font** (maybe 2).

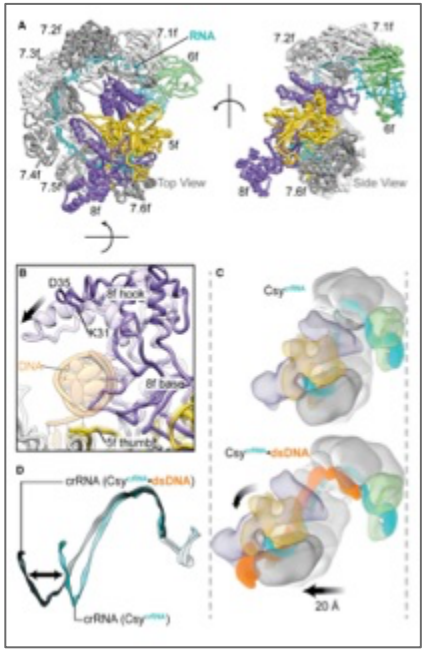
Comic sans is one of the most readable - but it's also too informal for many applications. (Also it can be polarizing).

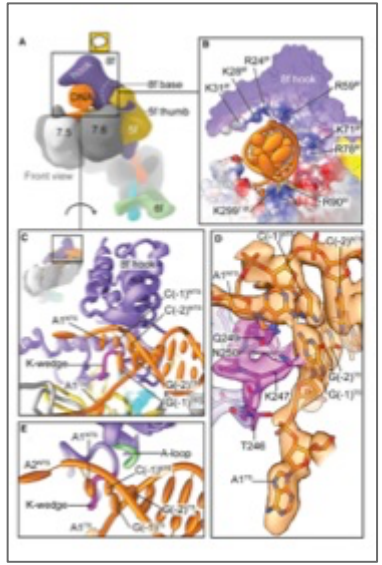
Falconieri Visuals

5. Stick to a consistent design





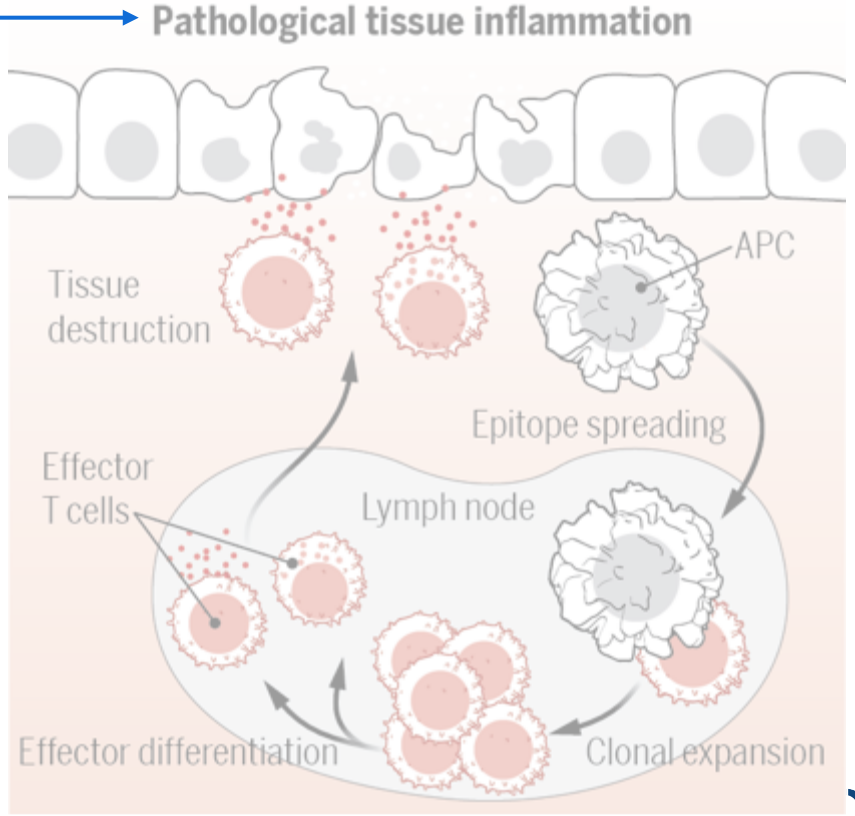




Check for consistency in **colors**, **fonts**, **viewing angles**, **arrow types**, **line widths**

6. Break down complex visuals

You start talking about this

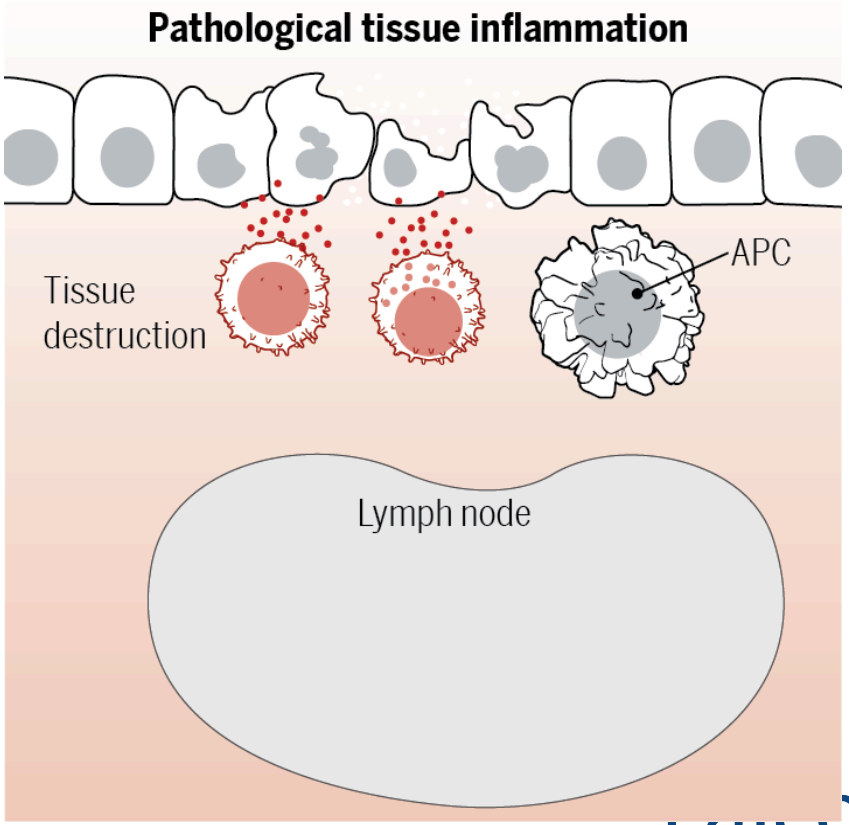


While your audience is looking at all of this

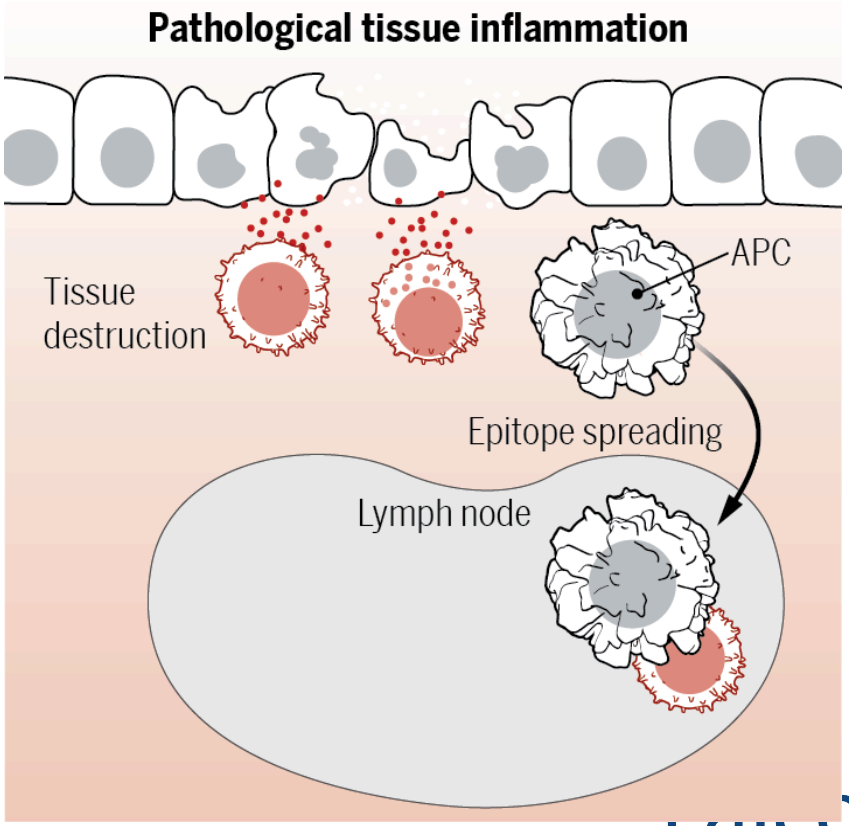
Falconieri Visuals

VERONICA FALCONIERI HAYS/*SCIENCE* FROM J. A. BLUESTONE

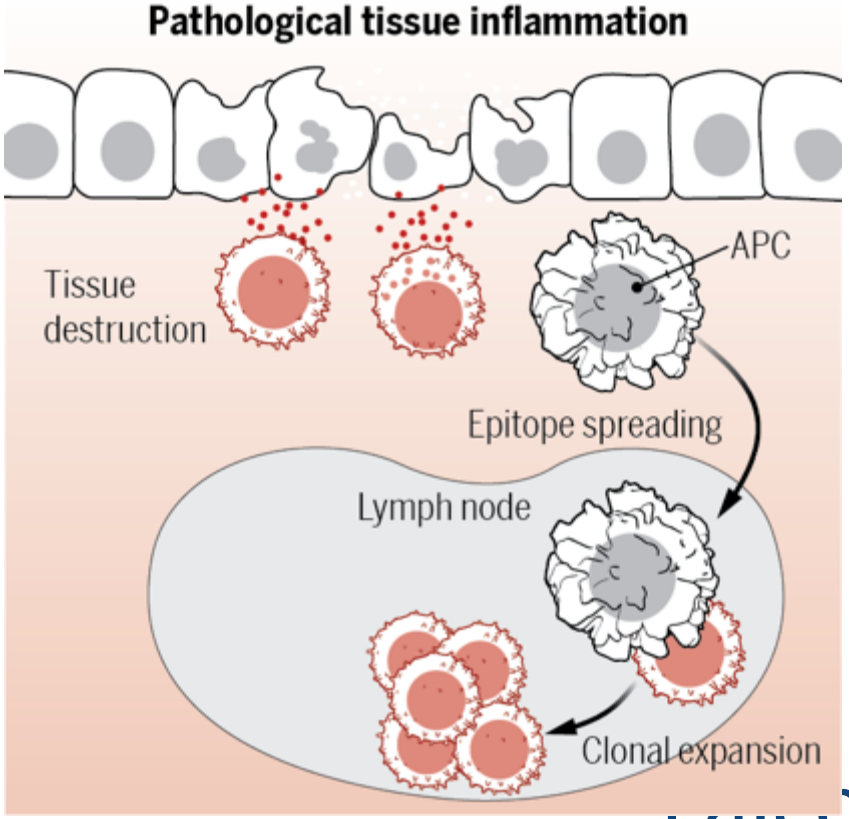
6. Break down complex visuals



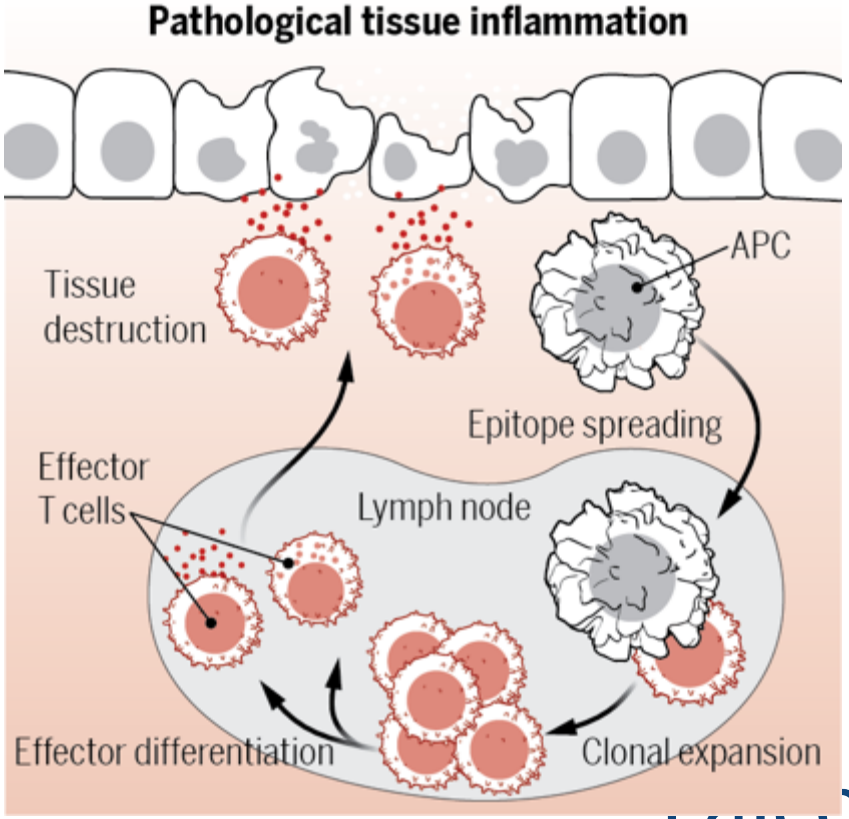
6. Break down complex visuals



6. Break down complex visuals



6. Break down complex visuals

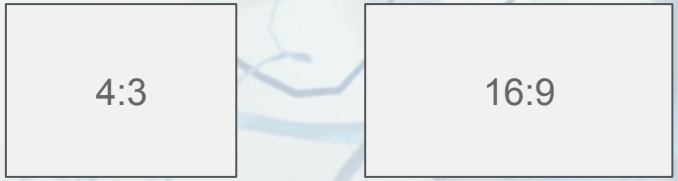


7. Consider compatibility

Ask about platform ahead of time if possible.

Fonts: Is the font you're using installed by default on both Macs and PCs?

Ratio: 4:3 (old) or 16:9 (current) - At this point, 16:9 is default



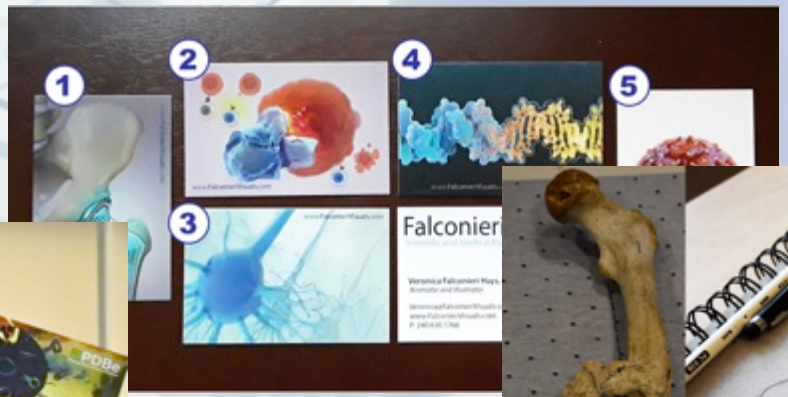
Animations: Will I always be presenting on a computer with the most up to date Powerpoint?

Movies: .MP4 is typically safe. Test on another computer.

8. Social Media: **Use a visual whenever possible**

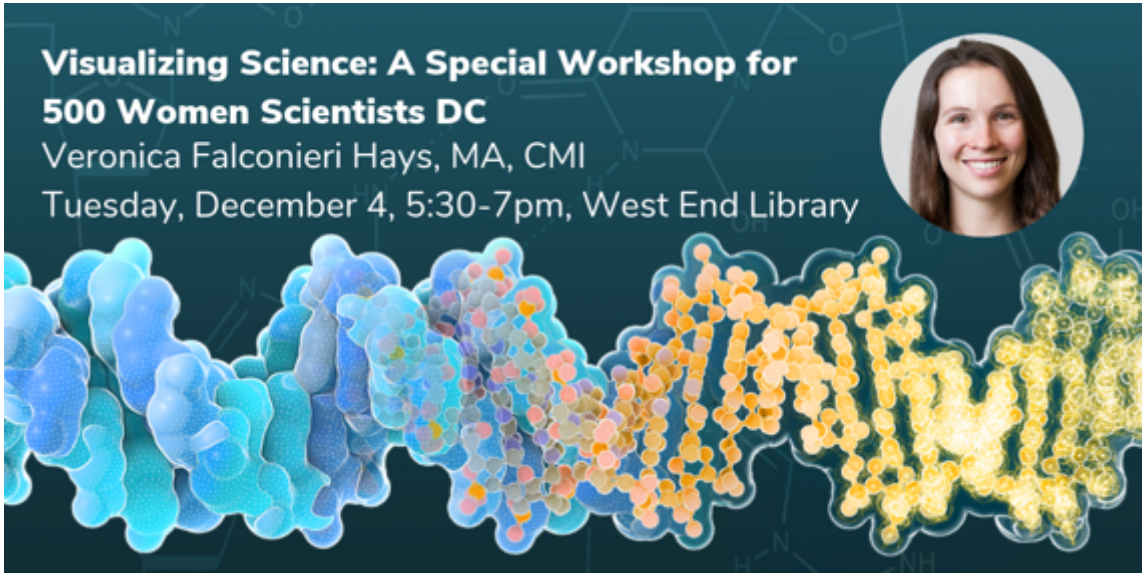
In scientist to scientist communication, your audience is already engaged.

On social media, your audience is more varied. A visual entices them to engage with your content.



8. Social Media: **Use a visual whenever possible**

Free tools and software are available to help you create quality visuals and infographics without having to know professional software

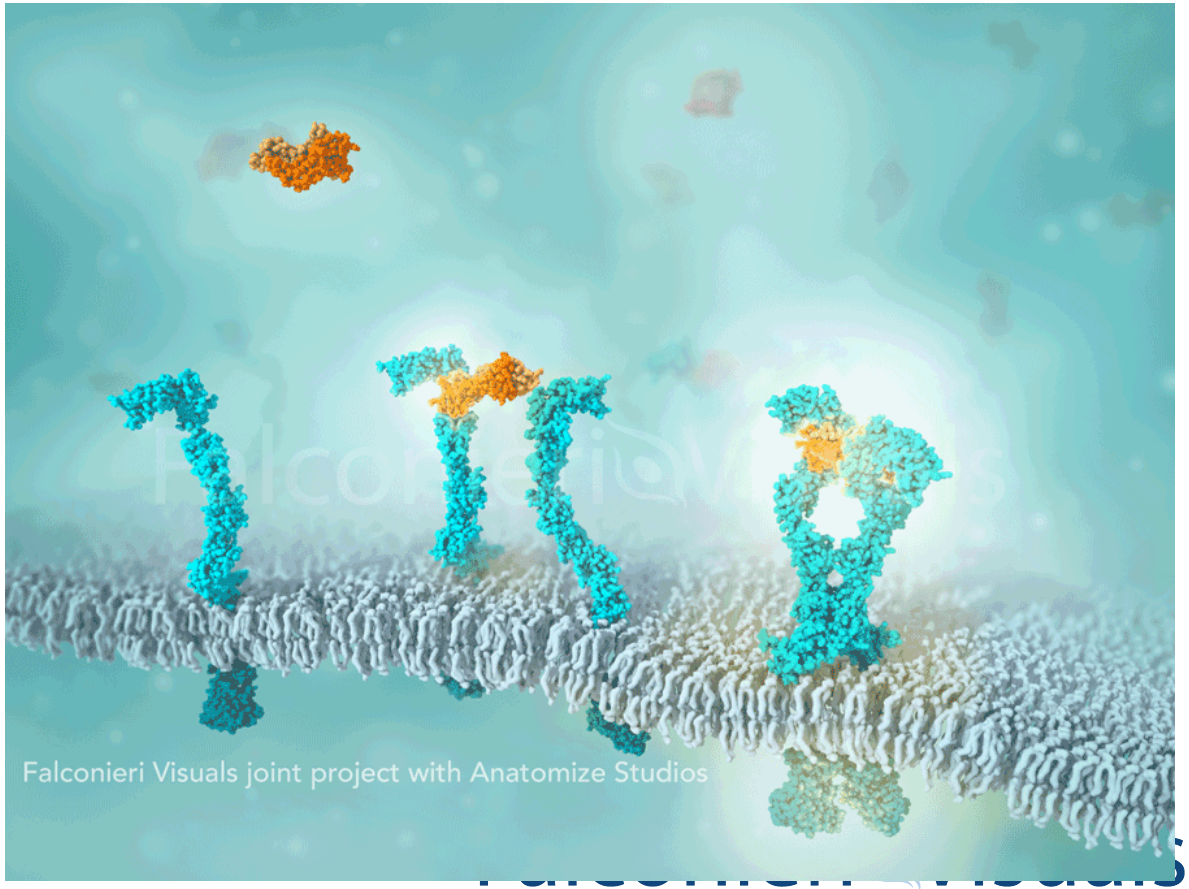


Facebook / LinkedIn/ Twitter optimized graphic and Instagram optimized graphic, created on **www.canva.com**

Falconieri Visuals

9. Social Media: **Make it move**

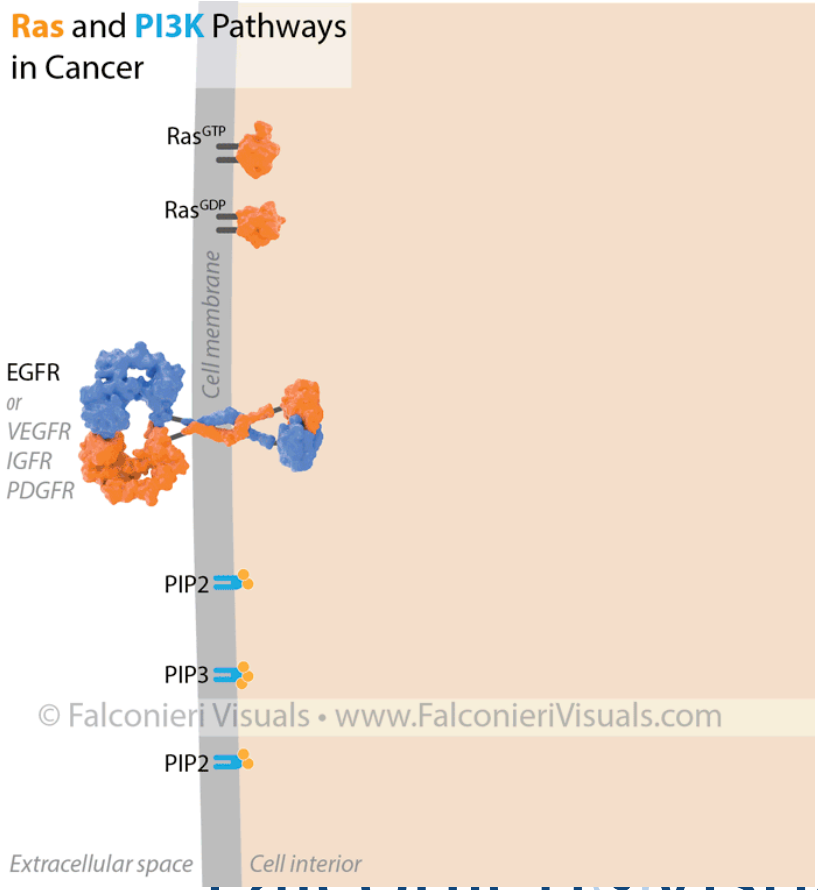
- Compare and contrast
- Change over time
- Building complexity



Gif example:
https://twitter.com/FalconieriV/status/938442731784949761

9. Social Media: **Make it move**

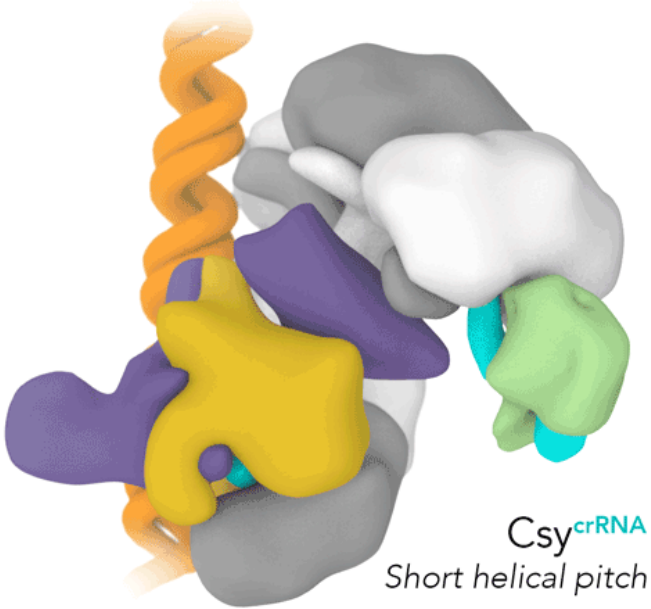
- Compare and contrast
- Change over time
- Building complexity



Gif example:
https://twitter.com/FalconieriV/status/974281083234799617

9. Social Media: **Make it move**

- Compare and contrast
- Change over time
- Building complexity

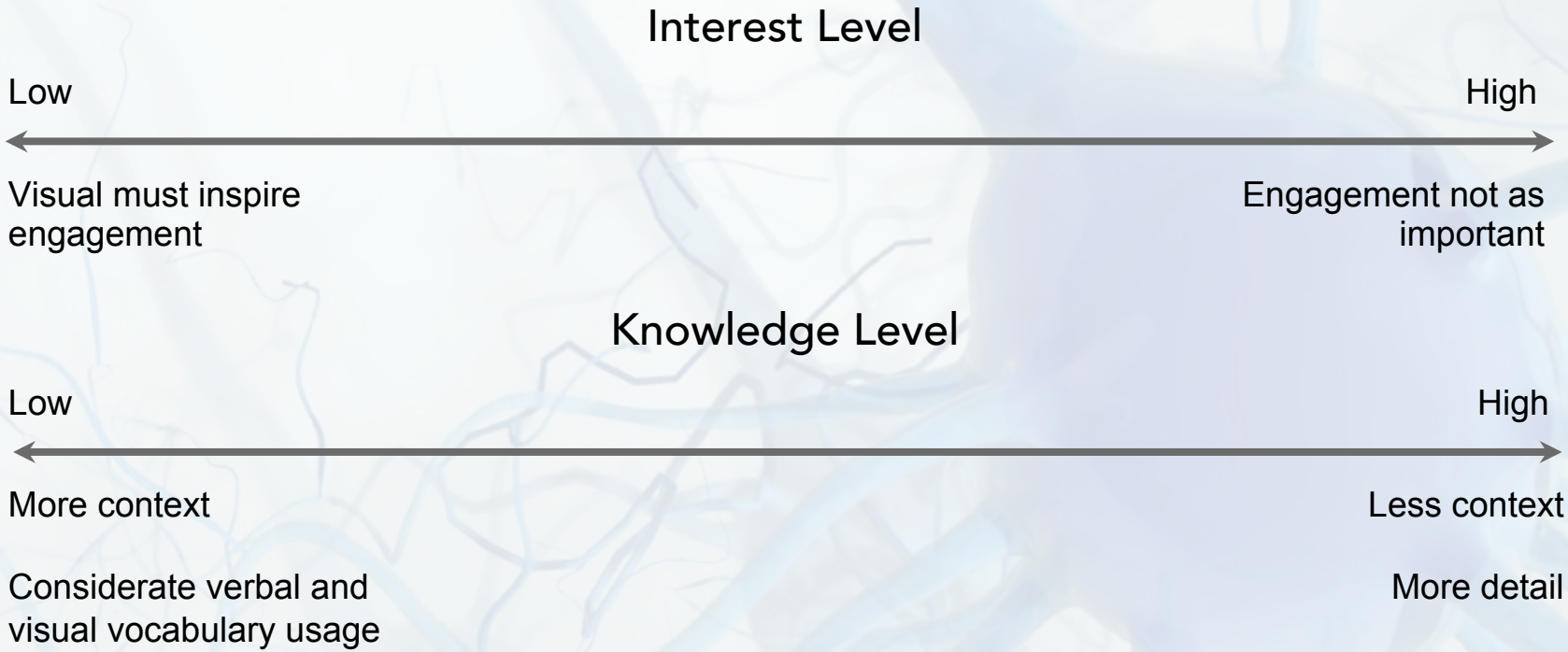


Gif example:
https://falconierivisuals.com/?portfolio=dna-binding-mechanism-of-crispr-cas-surveillance-complex-csy

Falconieri Visuals

10. Know your audience

10. Know your audience



10. Know your audience

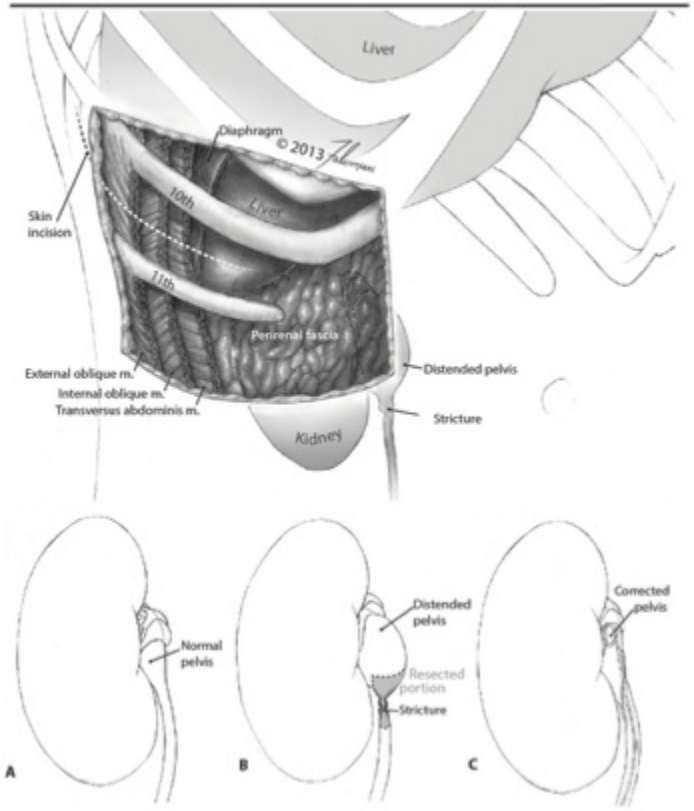


Illustration for surgeon

Falconieri Visuals

10. Know your audience

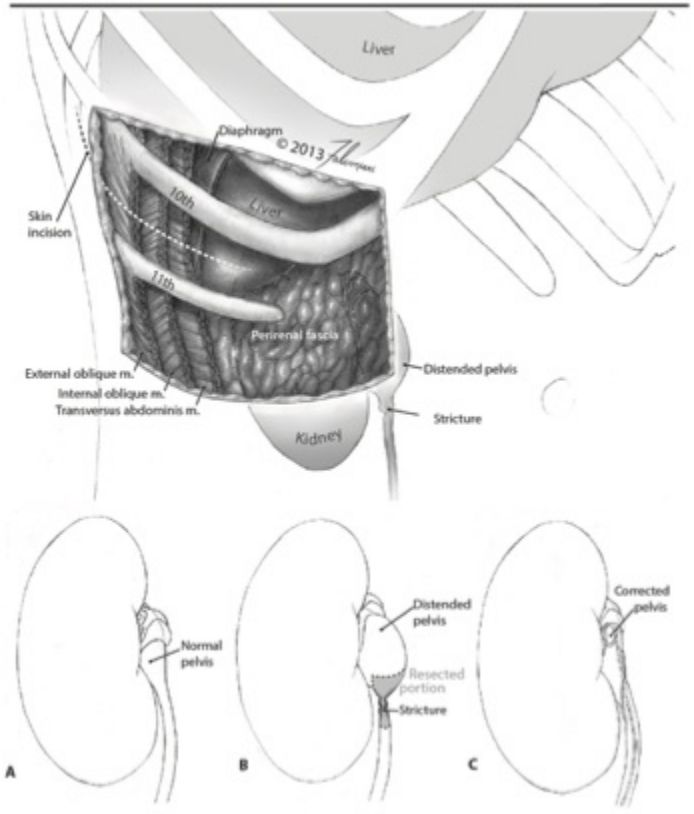


Illustration for surgeon

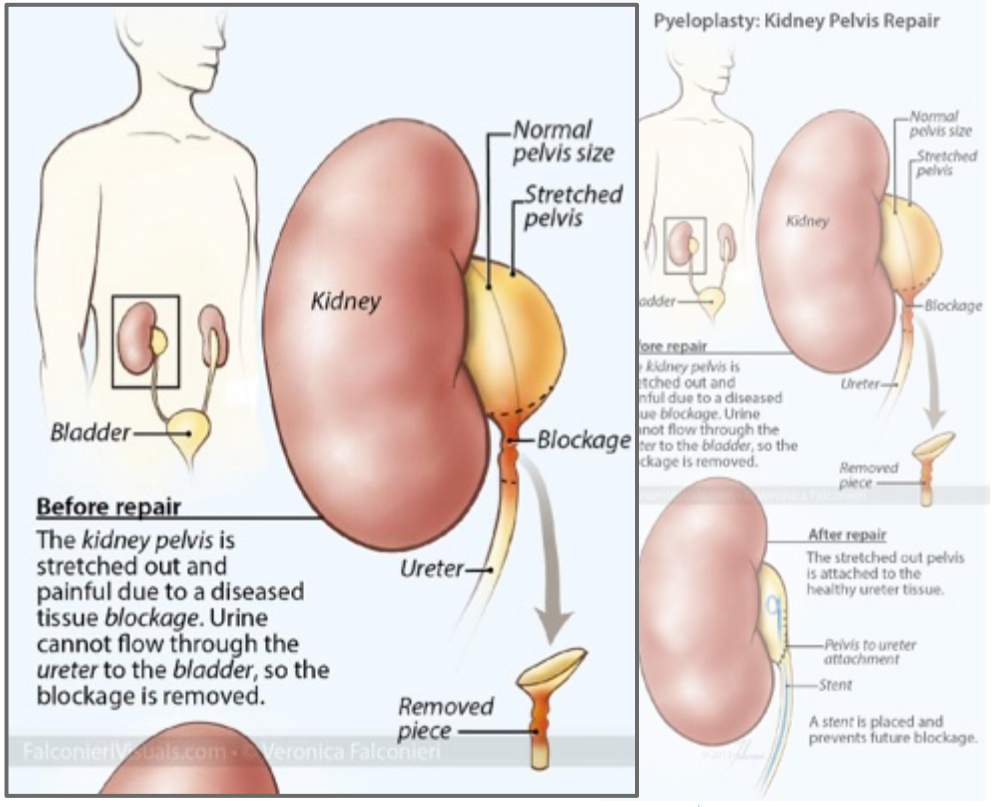


Illustration for patient

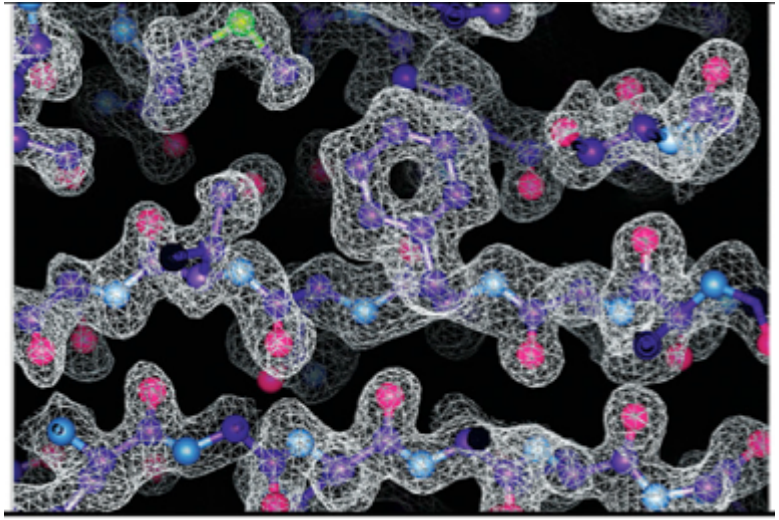
Falconieri Visuals

10. Know your audience

Two ways to visualize an electron density map

10. Know your audience

Two ways to visualize an electron density map

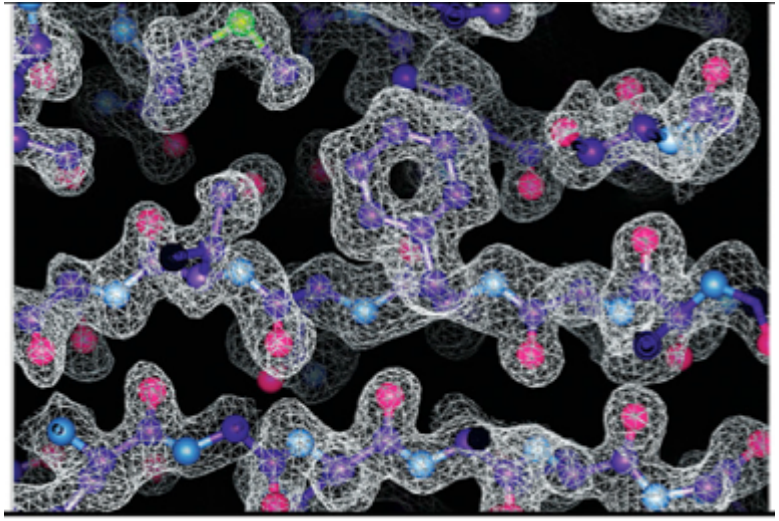


Modeling program screenshot

- Dark background bad for printing
- Can’t isolate single section
- Distracting color palette

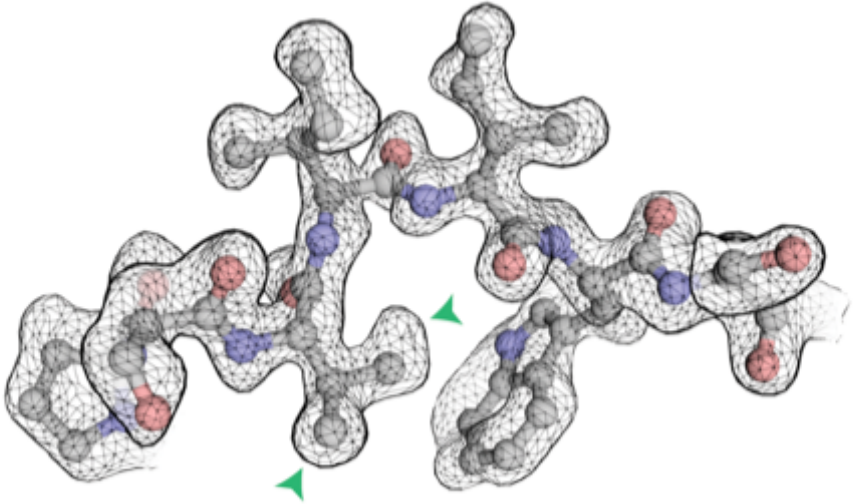
10. Know your audience

Two ways to visualize an electron density map



Modeling program screenshot

- Dark background bad for printing
- Can't isolate single section
- Distracting color palette

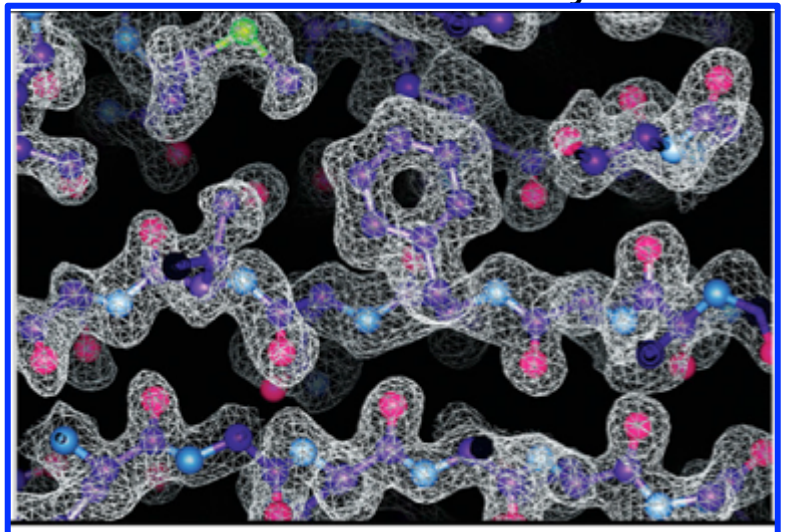


Render from professional 3D software

- Good for printing
- Clear view of single section
- Effective color palette

10. Know your audience

Two ways to visualize an electron density map



Modeling program screenshot

- Dark background bad for printing
- Can't isolate single section
- Distracting color palette

Specialists are more familiar with this

Render from professional 3D software

- Good for printing
- Clear view of single section
- Effective color palette

Falconieri Visuals