

Academic Application Package

1. Cover Letter + CV (due Sept. 17 for in-class peer review)
2. Research Statement (due Sept. 23 for in-class peer review)
3. Teaching Statement (due Sept. 30 for in-class peer review)
4. Diversity Statement (due Oct 7 for in-class peer review)
5. First 5-min of Job Talk (due Oct. 15)
6. Entire package revised (due Nov. 12) 
7. Webpage (due Dec. 3)

In-class peer review: Diversity Statements

EXERCISE:

- When you get to the breakout room you will go to Files/DiversityStatements and find the pdf belonging to your breakout room partner
- For ~8 minutes read the materials then use ~8 min (each) for feedback

PROMPTS FOR FEEDBACK (also on Canvas):

- Do they articulate their vision for improving diversity?
- Is the statement tailored (as much as possible) to the position/institution?
- Do they present sincere views and include personal experiences (where possible)?

Job Talks

- Job talks can make or break a candidate and it is critical to ace this part of the interview



Job Talks

	Job Talk	Conference Talk
Length	~45 min	~12 min
Audience	General (includes undergrads)	Specialists
Content	Tailor to R1/SLAC + future plans	Research paper
Judged on...	Effective teaching + research beyond subspecialty	Results

Elements of a great talk

1. Design

- organization/timing/target audience
- slide layout including figures

2. Delivery

- confidence
- get your main ideas across
- maintain attention spans

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Elements of a great talk

1. Design: organization/timing/target audience

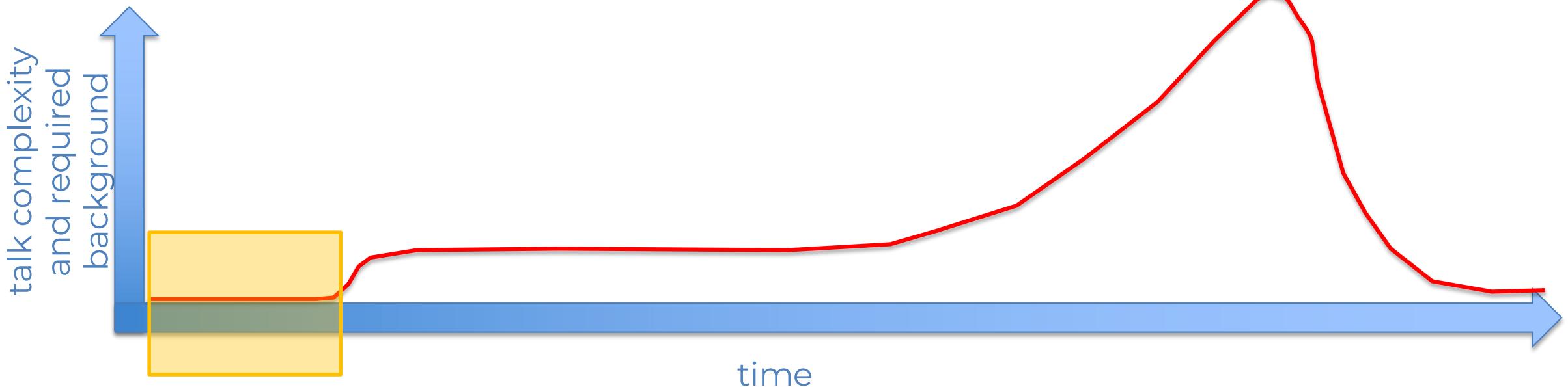
Most of you will present research related to your dissertation, but remember, this is NOT a dissertation defense. Make sure everyone in the audience learns something. Be sure to answer the following questions:

- What problem have I worked on?
- Why would anyone work on this problem?
- What is significant about what I've done?
- How has my work made progress on the problem?

Elements of a great talk

5 +

1. Design: organization/timing/target audience

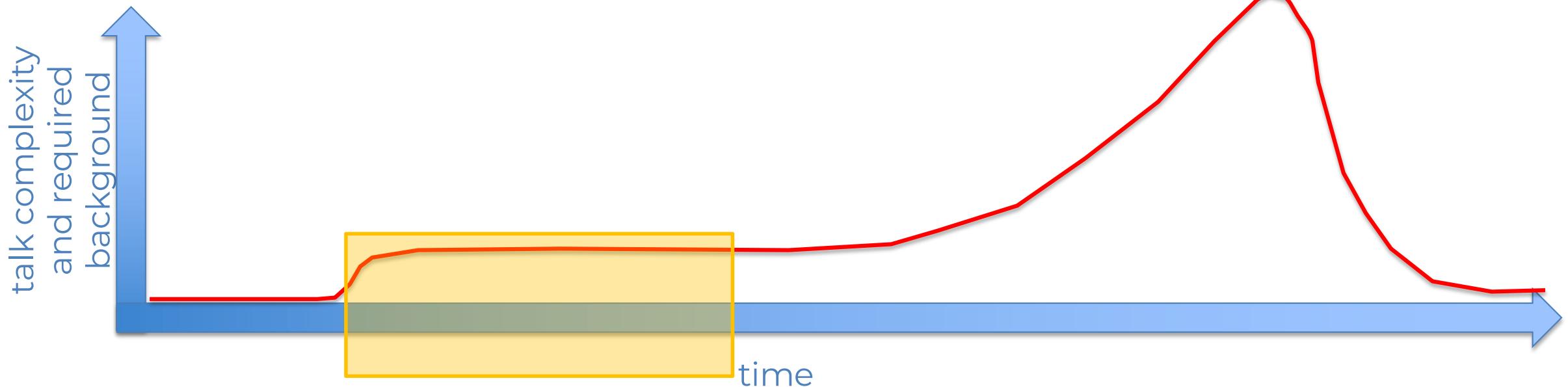


- 5-minutes: introduction/motivation to the topic
- target audience is undergraduate-level knowledge
- opportunity to demonstrate teaching

Elements of a great talk

5 + 10

1. Design: organization/timing/target audience

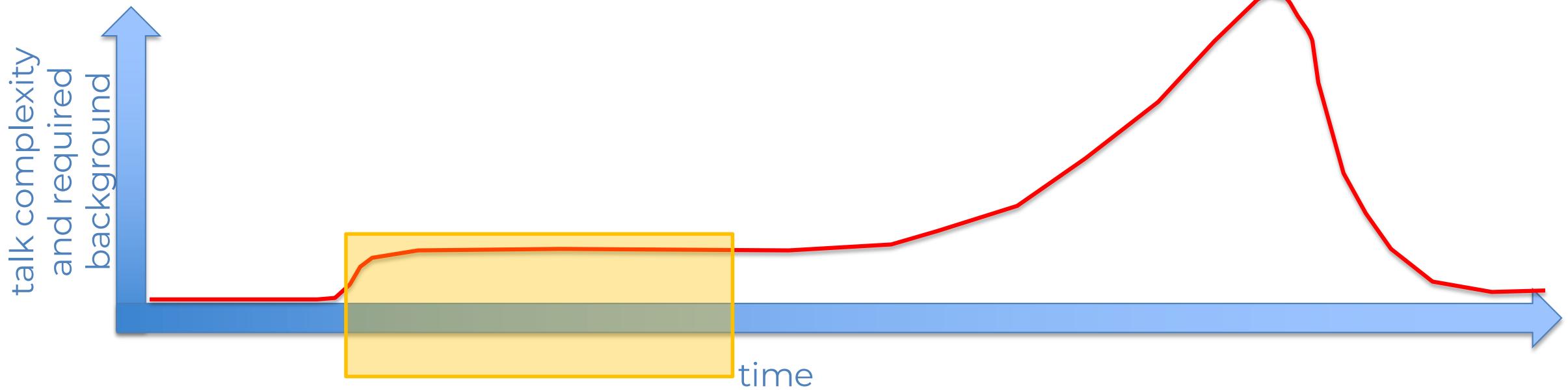


- 10 minutes: explaining, both chronologically and conceptually the background knowledge needed and knowledge gaps you aim to address
 - could say: “I will address X problems: 1, 2, 3...” and then circle back to each of these points throughout your talk
 - address entire faculty who might only have passing familiarity with your field

Elements of a great talk

5 + 10

1. Design: organization/timing/target audience

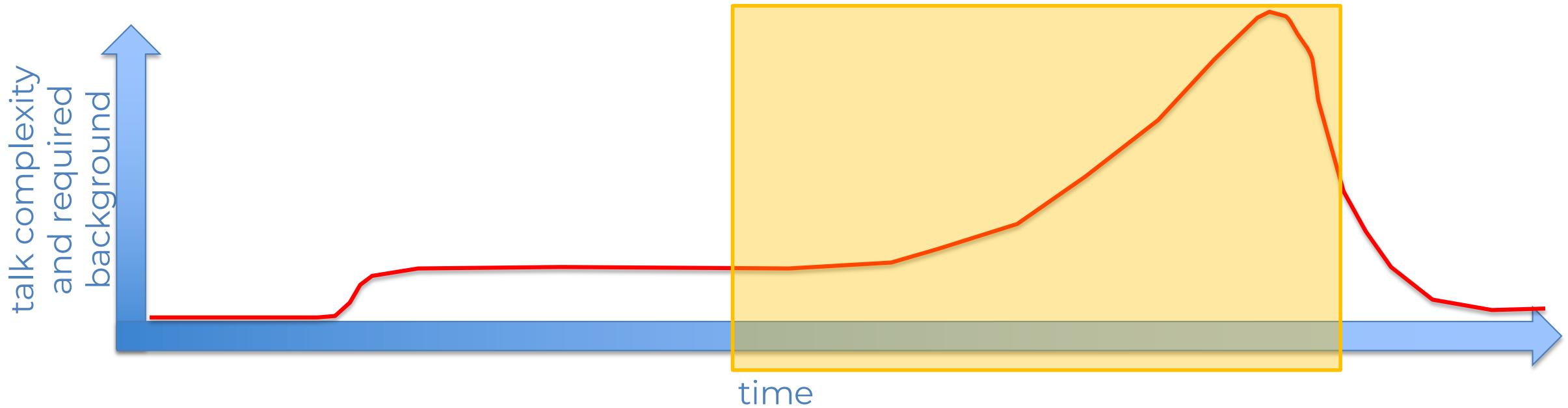


- 10 minutes: explain your approach to solving the problem, what niche you occupy and how your work relates to other approaches/peripheral fields
 - this is where you demonstrate expertise in the field by knowing where you contribute
 - aim this for people in related fields

Elements of a great talk

5 + 10 + 30

1. Design: organization/timing/target audience

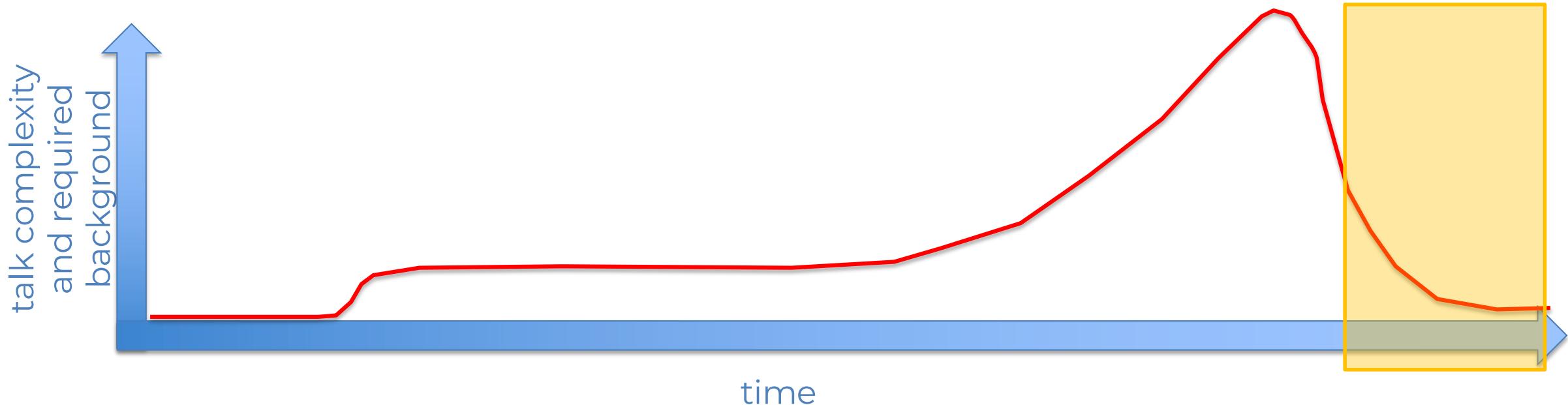


- 30 minutes: how you addressed the knowledge gaps and what you found
 - your job is to come across as a problem solver
 - demonstrate rigor and technical depth
 - target the domain experts but ensure non-experts can understand impact

Elements of a great talk

$5 + 10 + 30 + 5 = 50 \text{ min}$

1. Design: organization/timing/target audience

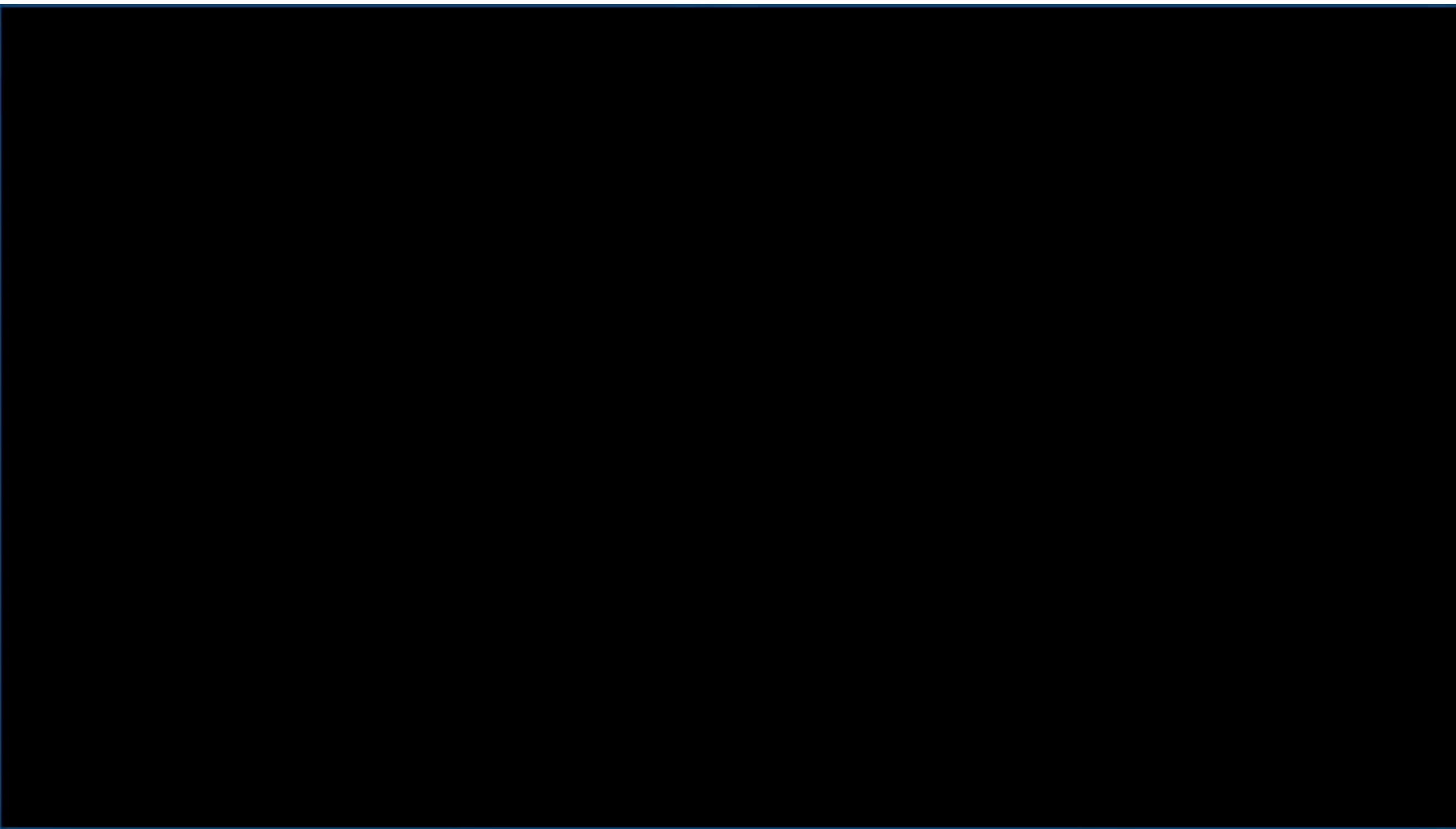


- 5 minutes: broader implications of your work and where you go from here
- think big: ideas that you don't yet know how to realize (5 yr plan)
- these will be seed topics for 1:1 meetings
- back to targeting undergrads

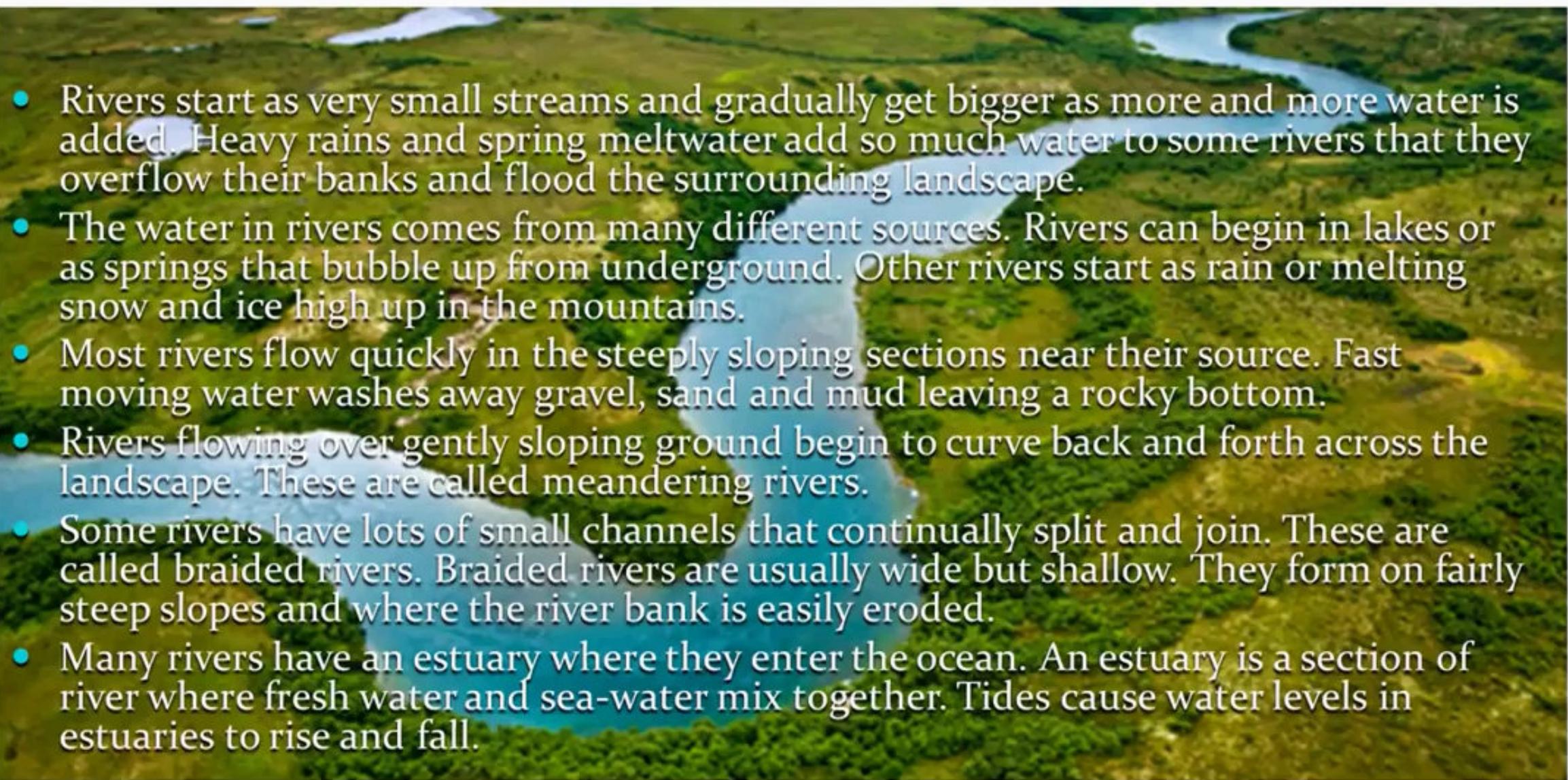
Elements of a great talk

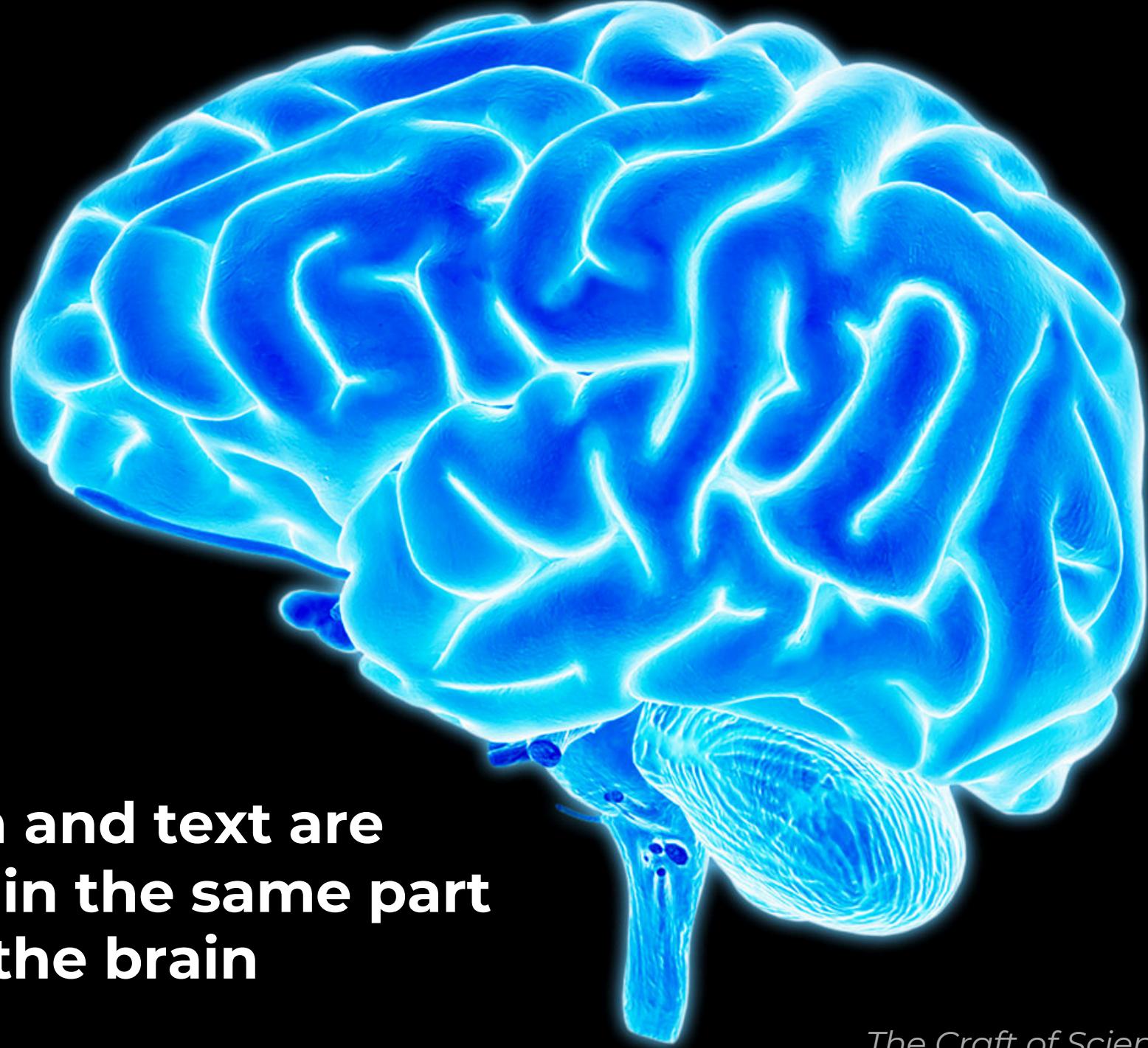
1. Design
 - organization/timing/target audience
 - **slide layout including figures**

2. Delivery
 - confidence
 - get your main ideas across
 - maintain attention spans



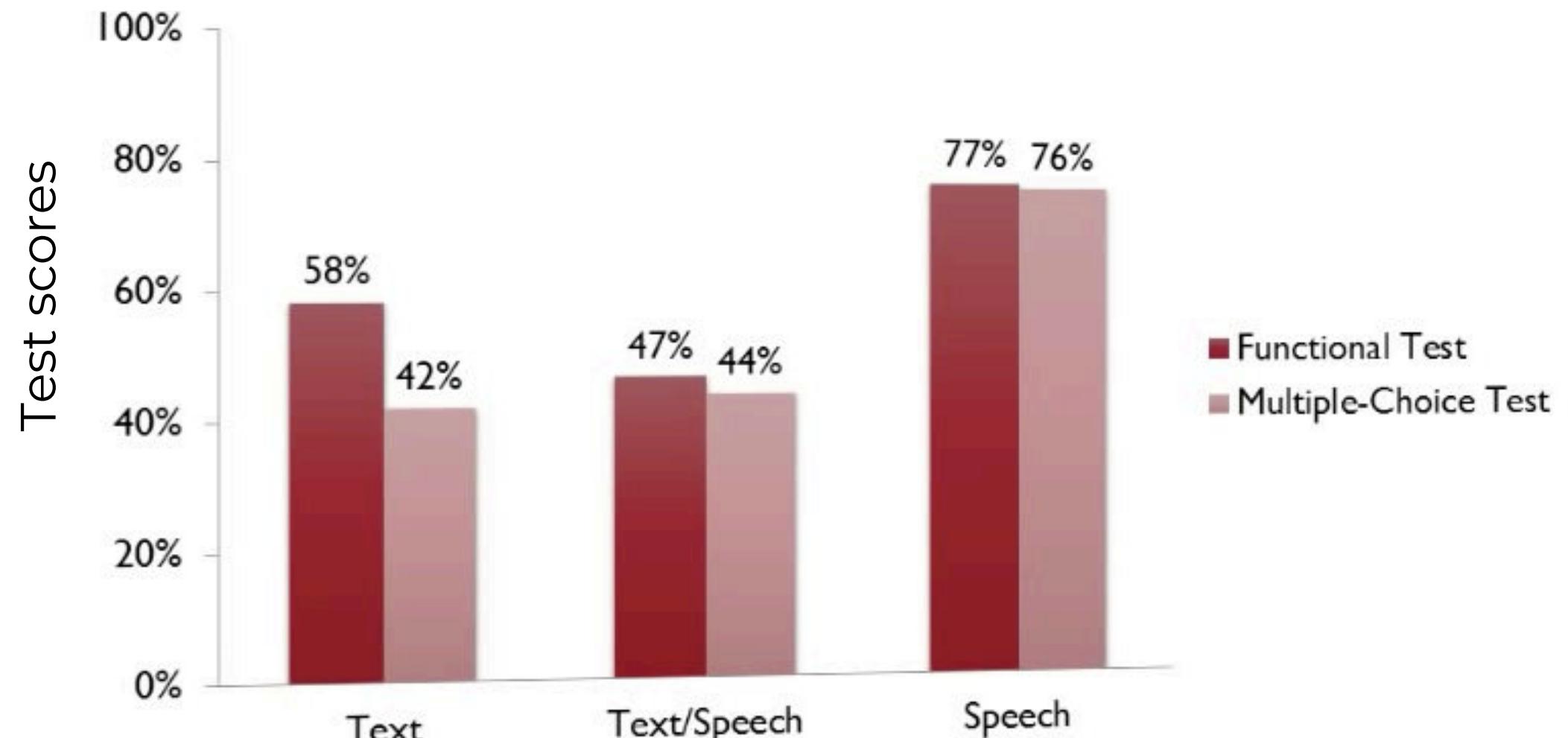
How Rivers Are Formed

- 
- A scenic landscape showing a river flowing through a green, hilly area. The river curves through the terrain, with its path highlighted by white lines. The surrounding land is covered in lush green vegetation and some brown, rocky areas. The sky above is clear and blue.
- Rivers start as very small streams and gradually get bigger as more and more water is added. Heavy rains and spring meltwater add so much water to some rivers that they overflow their banks and flood the surrounding landscape.
 - The water in rivers comes from many different sources. Rivers can begin in lakes or as springs that bubble up from underground. Other rivers start as rain or melting snow and ice high up in the mountains.
 - Most rivers flow quickly in the steeply sloping sections near their source. Fast moving water washes away gravel, sand and mud leaving a rocky bottom.
 - Rivers flowing over gently sloping ground begin to curve back and forth across the landscape. These are called meandering rivers.
 - Some rivers have lots of small channels that continually split and join. These are called braided rivers. Braided rivers are usually wide but shallow. They form on fairly steep slopes and where the river bank is easily eroded.
 - Many rivers have an estuary where they enter the ocean. An estuary is a section of river where fresh water and sea-water mix together. Tides cause water levels in estuaries to rise and fall.



**Speech and text are
processed in the same part
of the brain**

Speech and text at the same time reduces audience understanding



CC BY-SA 4.0, J. L. Dickey

Properties of Cheetahs

- ▶ cheetahs make excellent hunters because
 - ▶ excellent senses can detect prey at far distances
 - ▶ fast speeds allow quick capture
 - ▶ employ strategies to trap prey

Step 1: Figure out what your assertion is:

Properties of Cheetahs

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 - ▶ employ strategies to trap prey

Step 1: Figure out what your assertion is:

A cheetah is a great hunter because of its speed, keen senses, and clever strategies

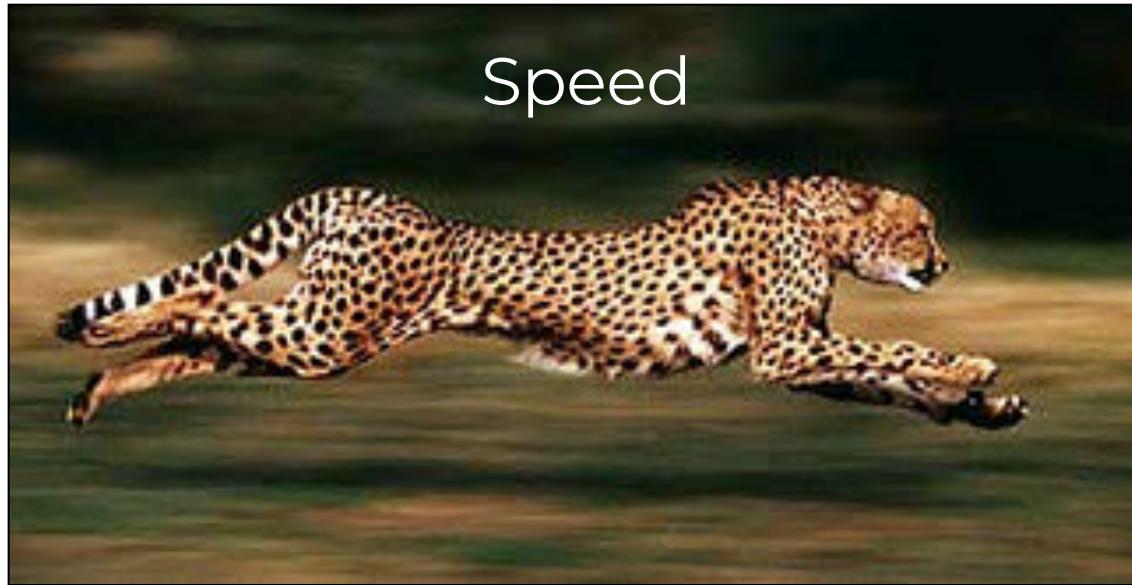
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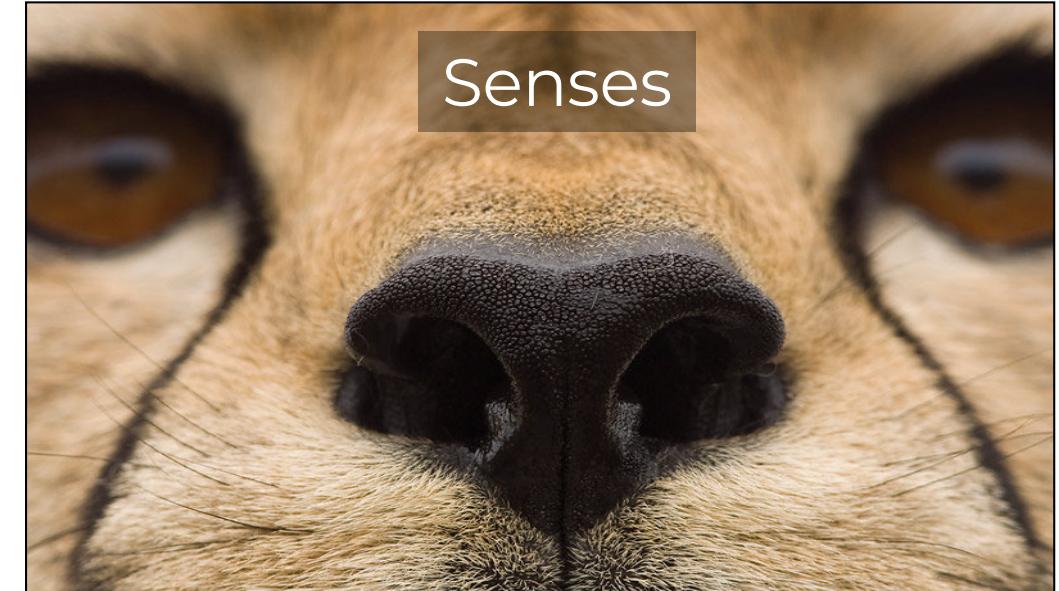
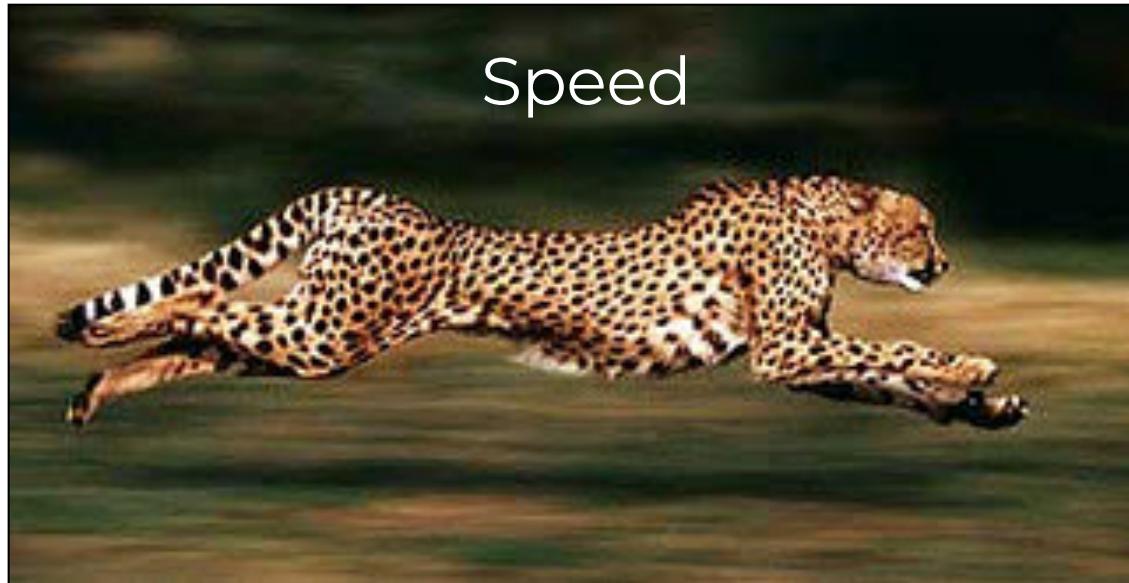
Step 1: Figure out what your assertion is:
A cheetah is a great hunter because of its speed, keen senses, and clever strategies

Step 2: create visual evidence that supports your assertion

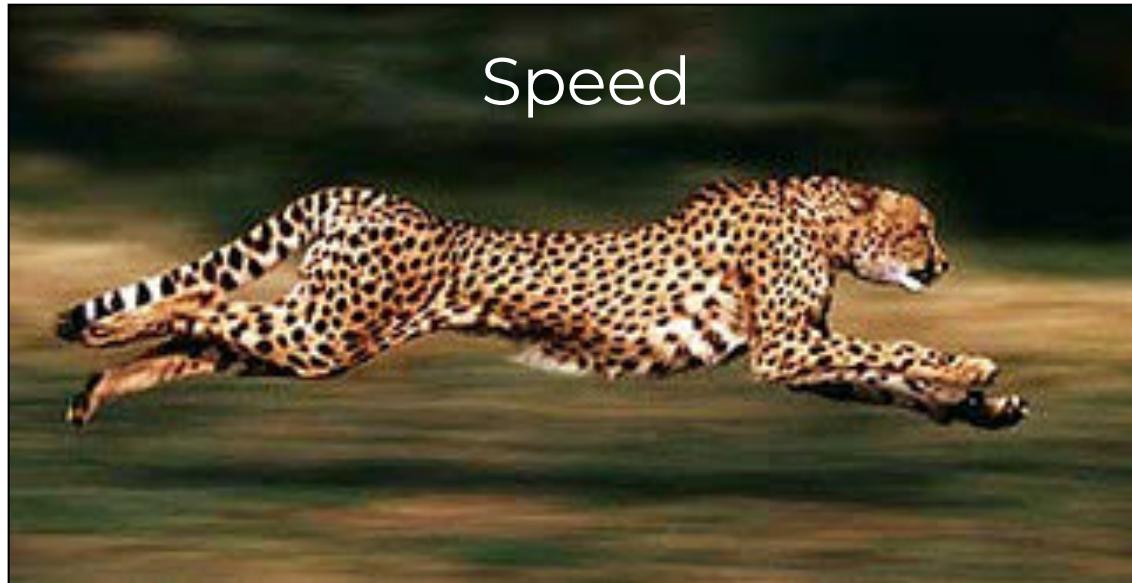
Cheetahs are great hunters due to their speed, keen senses, and clever strategies



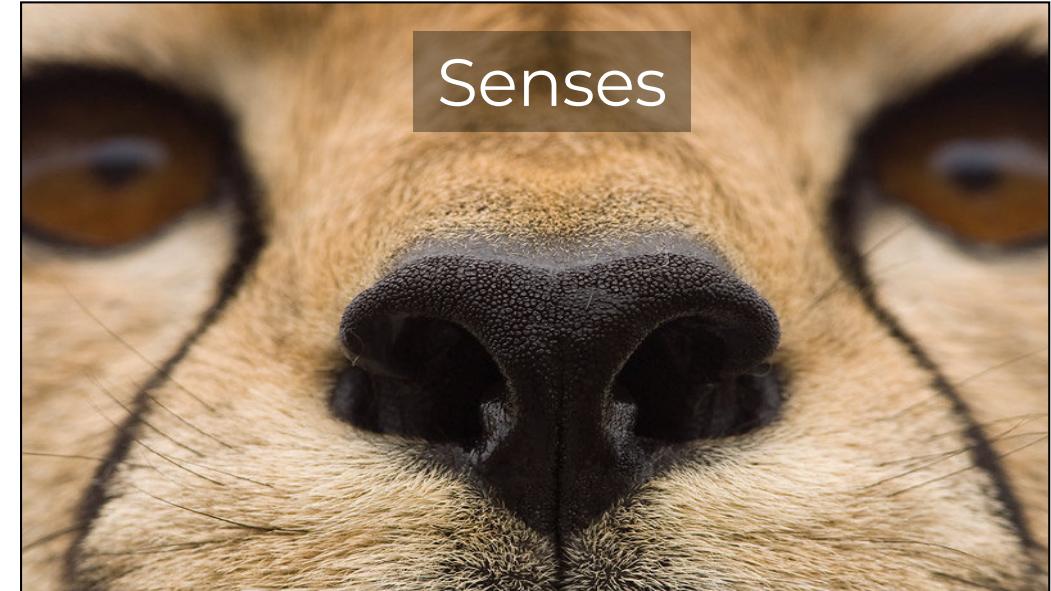
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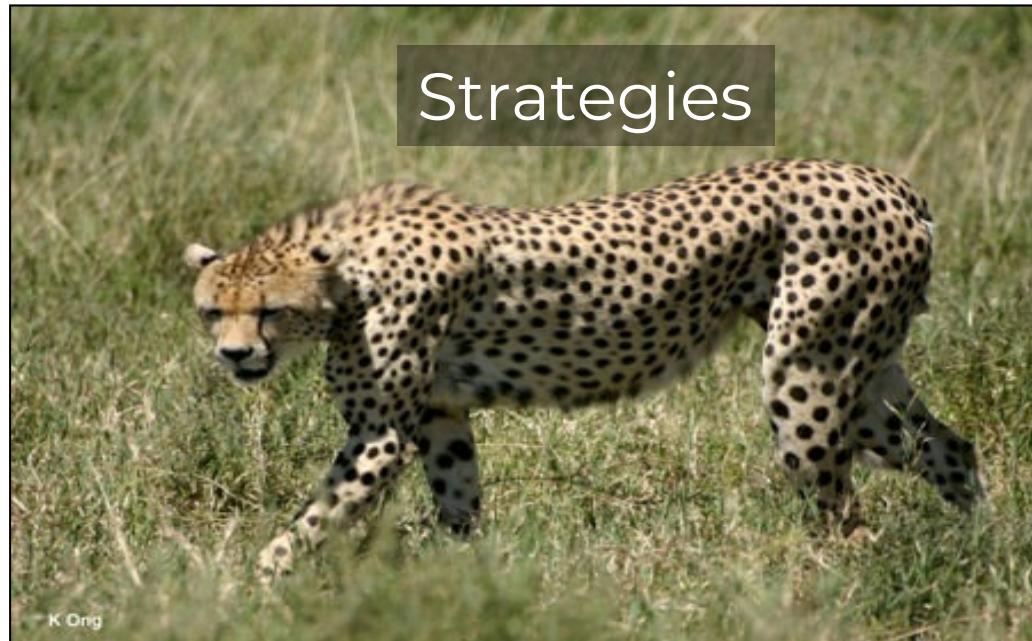
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Speed



Senses



Strategies

Using sentence (assertion) headlines improves recall

What causes color in diamonds?

- fancy colors are rare
- colors come from impurities or defects
- examples:
 - yellow=nitrogen
 - blue=boron
 - green=uranium
 - pink=unknown



24% recall

In diamonds, colors come from impurities, defects and irradiation

- yellow=nitrogen
- blue=boron
- green=uranium
- pink=unknown



JLo's ring from Ben Affleck



58% recall

Elements of a great talk

1. Design: slide layout – including figures

Headlines should be size 28 up to size 40

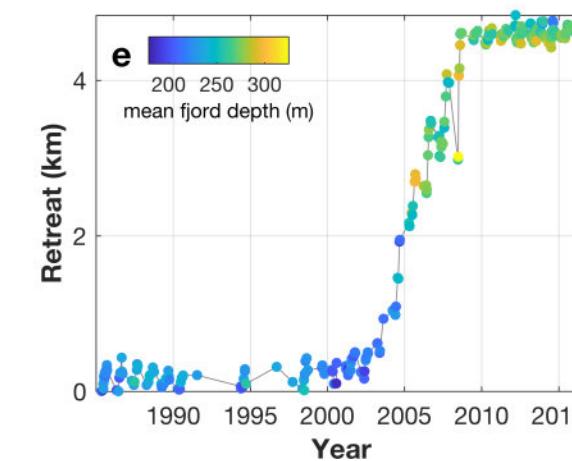
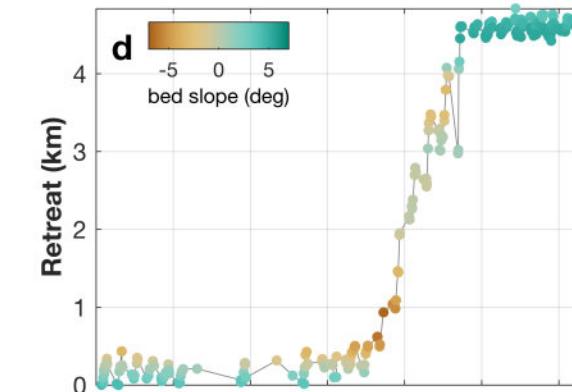
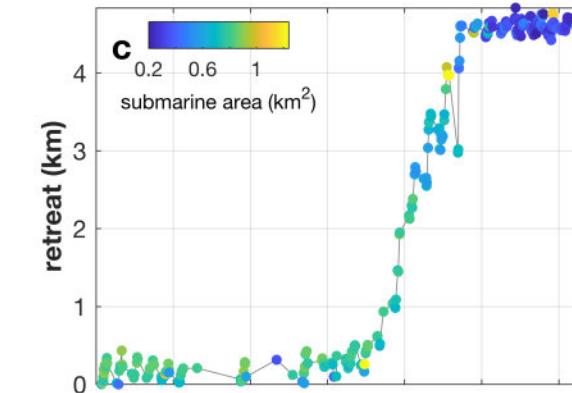
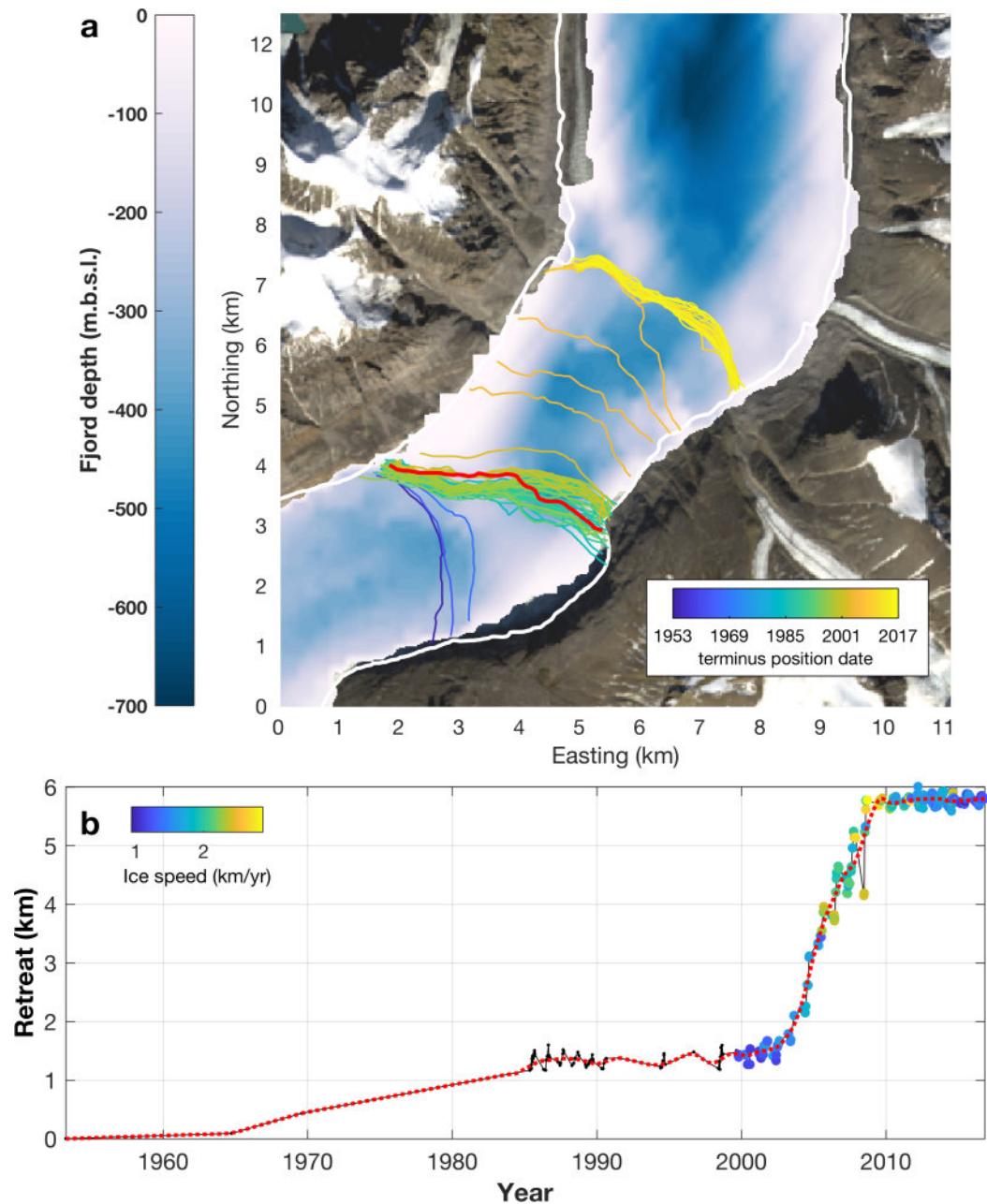
General text should be size 18 up to size 28

Referenced material should be size 12 up to 14

Sans-Serif
(Arial bold)

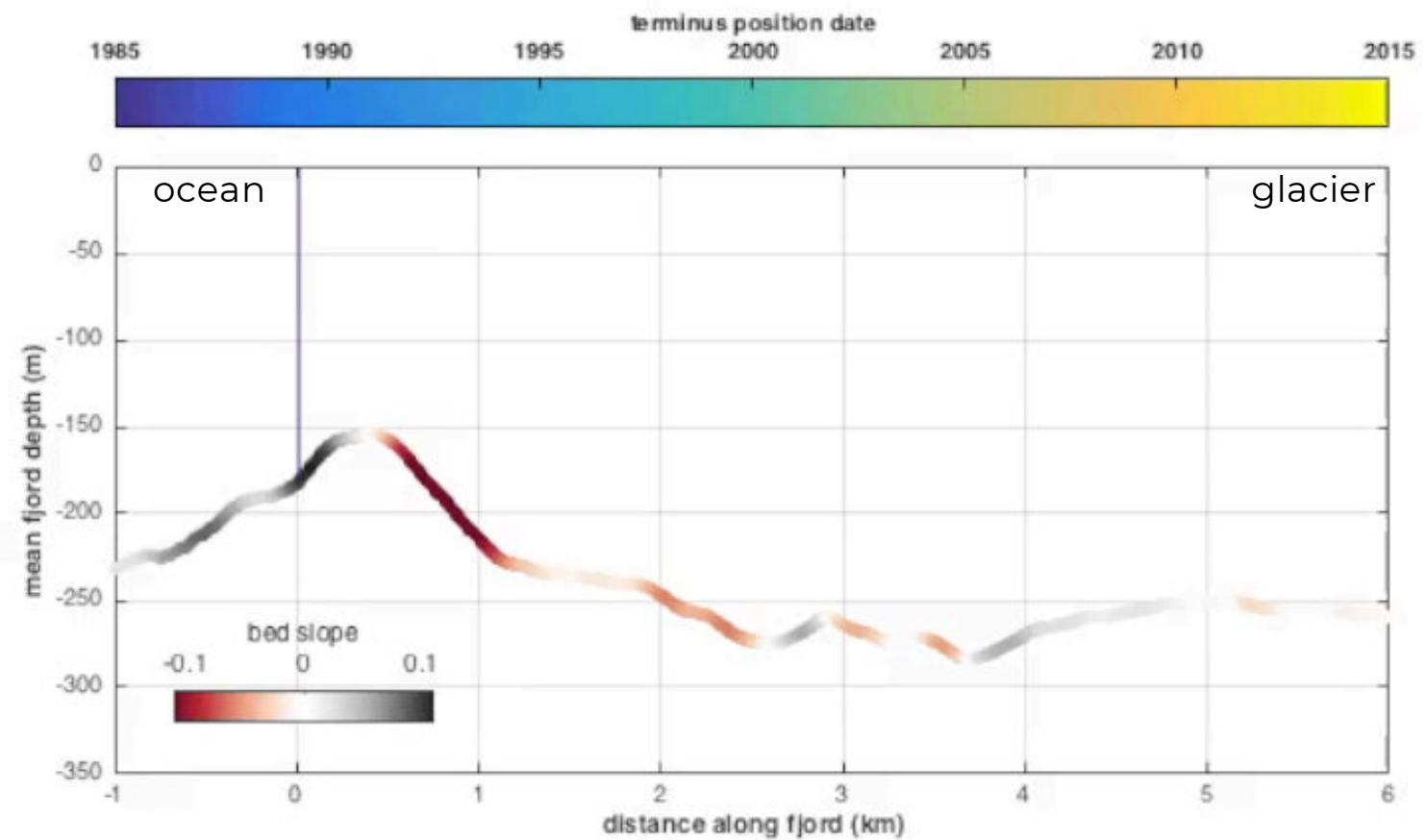
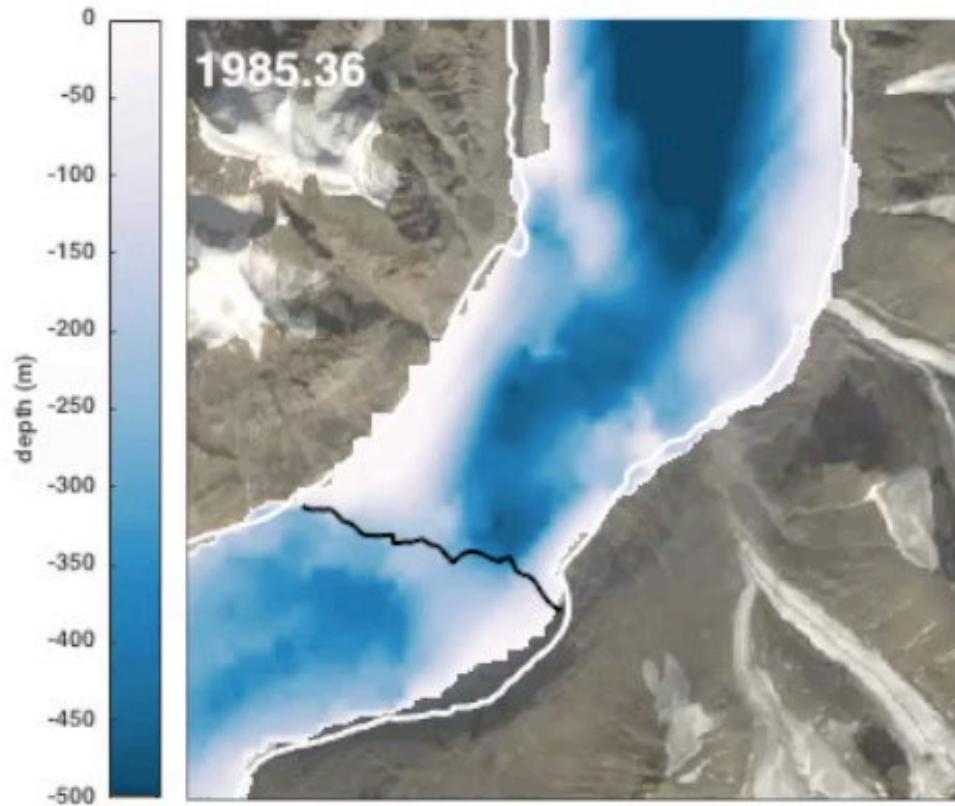
Serif
(Times New Roman)

Don't use distracting fonts, multiple graphics, complicated transitions and effects



Climate pushes a glacier into a new dynamic state

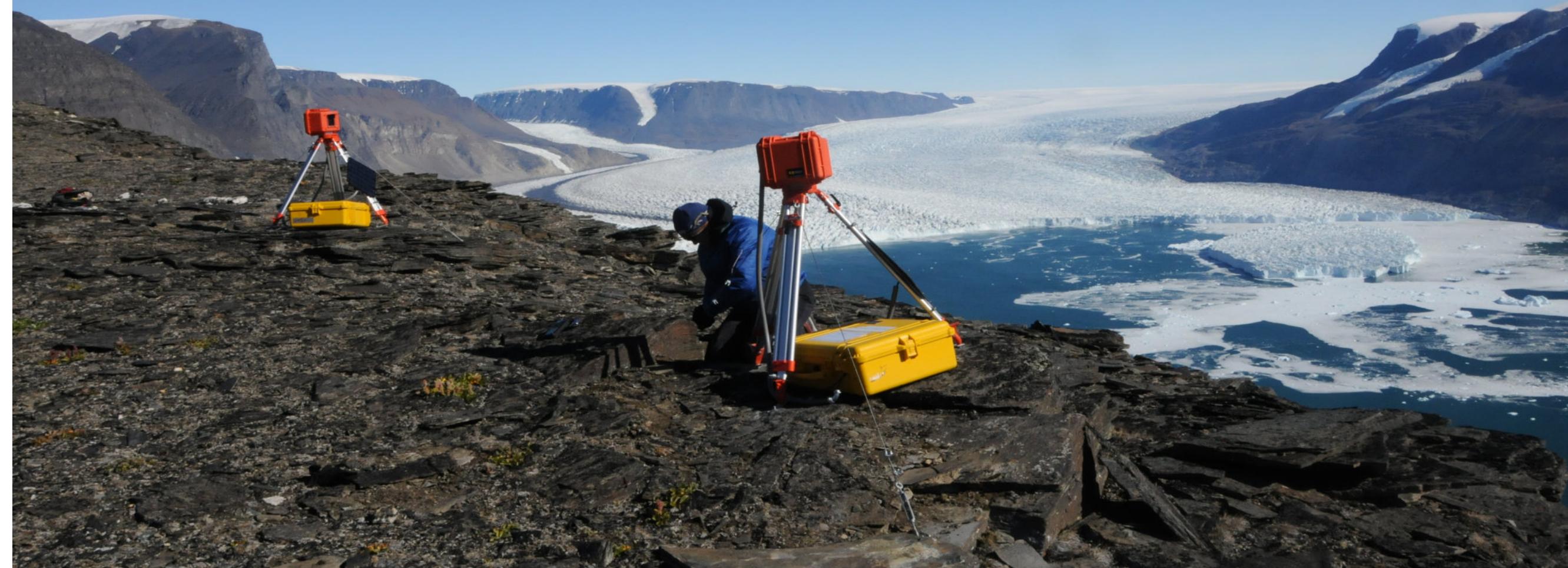
Topography regulates how much change



Two time-lapse cameras recorded daily images of the glacier and fjord conditions



Two time-lapse cameras recorded daily images of the glacier and fjord conditions



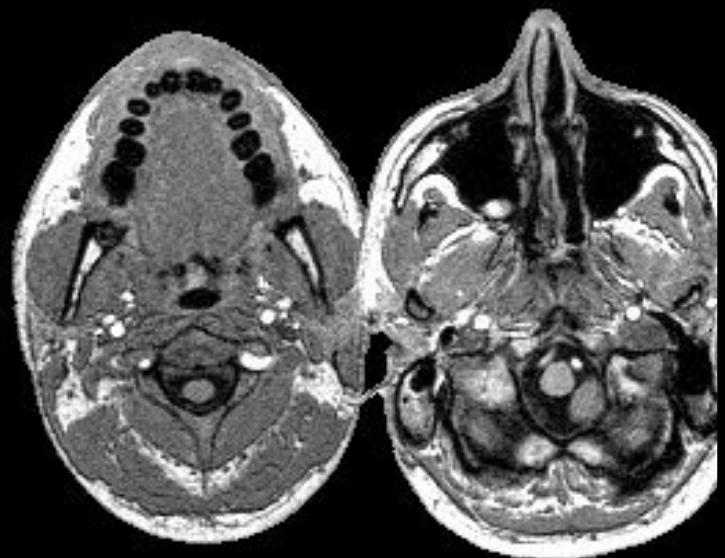
Repeat MRI provides a 3D image of the brain.



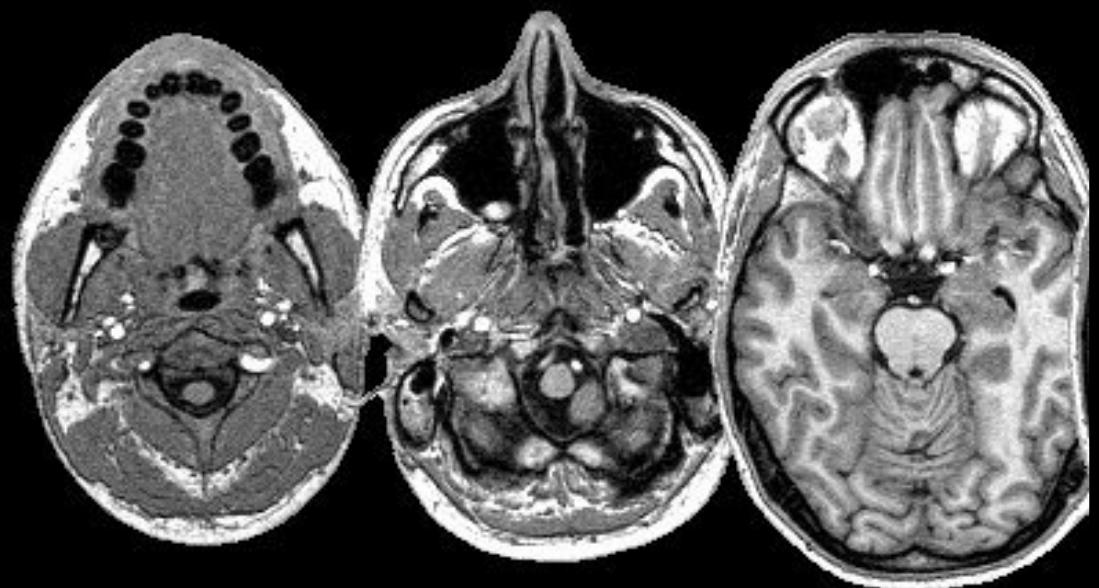
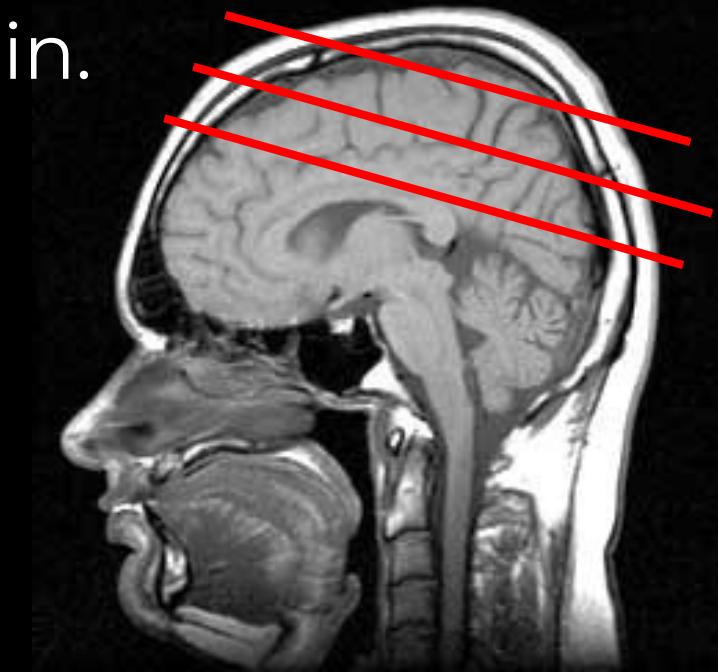
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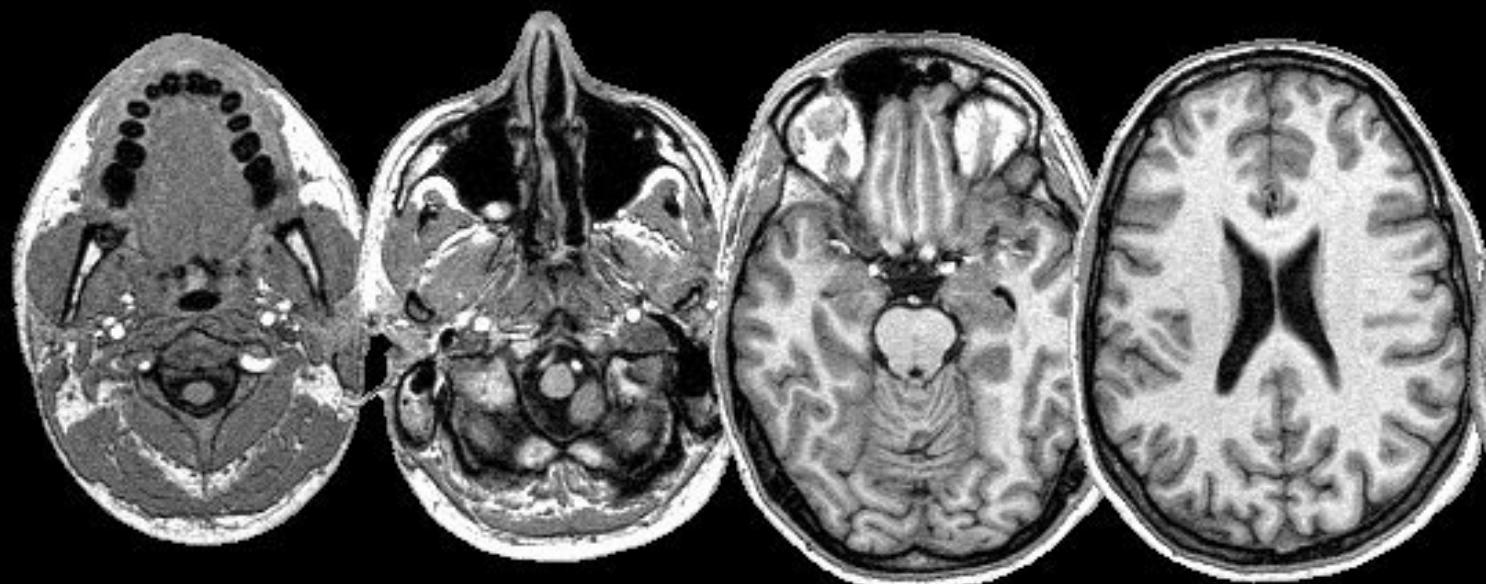
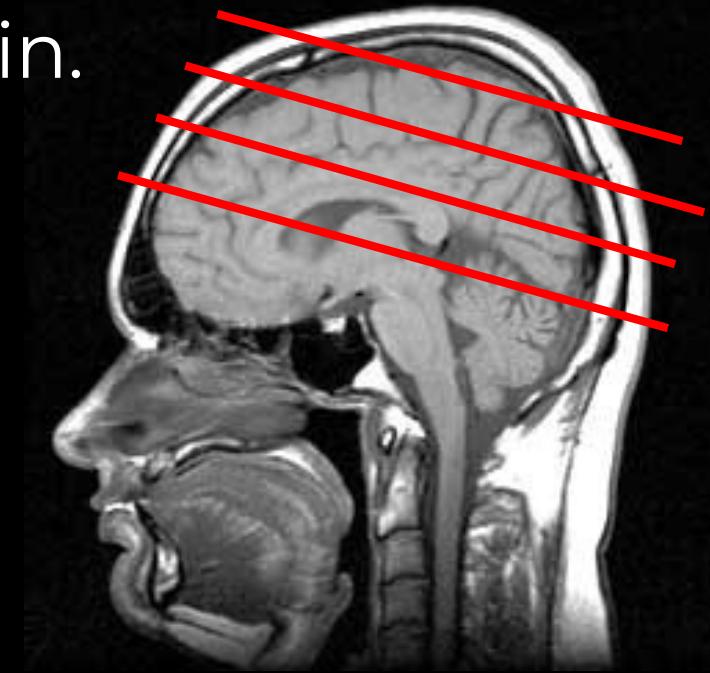
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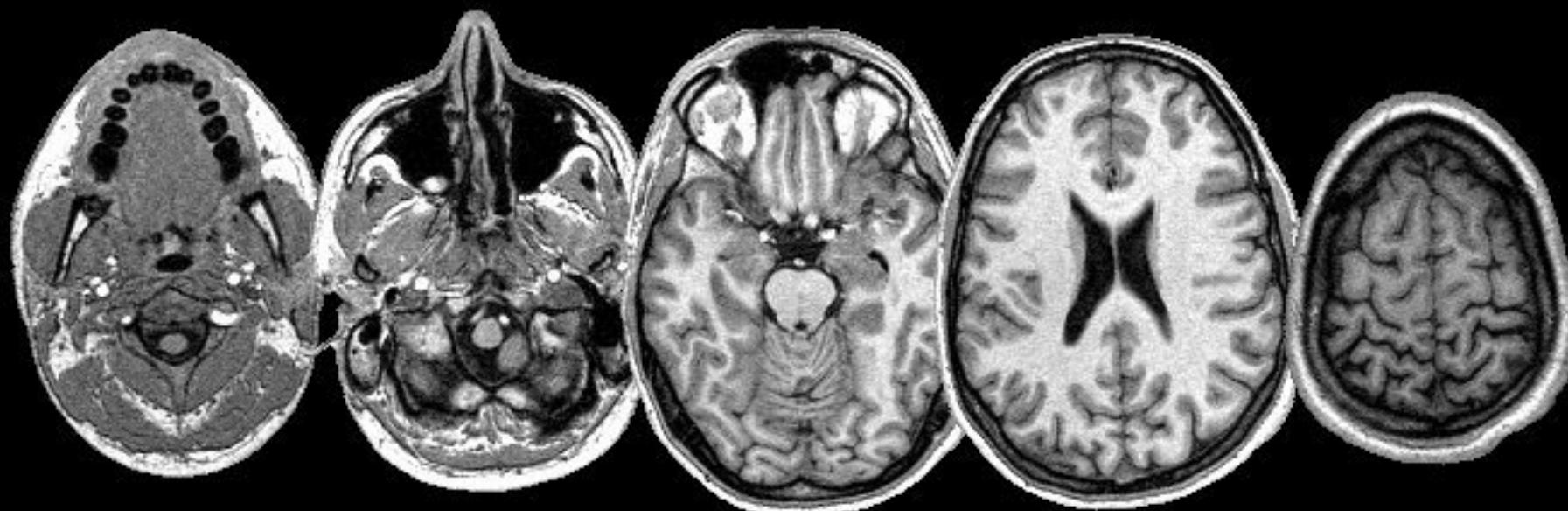
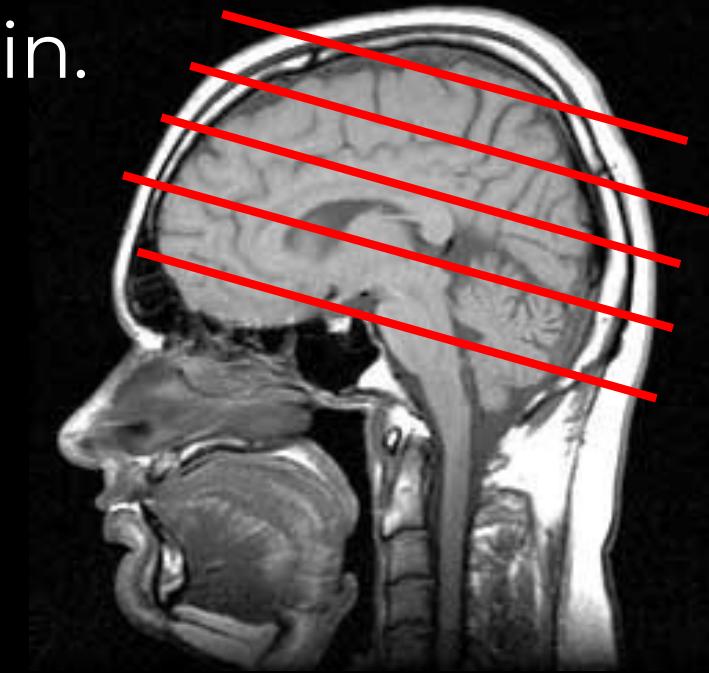
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Repeat MRI provides a 3D image of the brain.



Repeat MRI provides a 3D image of the brain.



Elements of a great talk

1. Design

- organization/timing/target audience
- slide layout including figures

2. Delivery

- **confidence**
- get your main ideas across
- maintain attention spans

Elements of a great talk

2. Delivery: confidence

- internal confidence: what you feel inside during your talk
 - make strong content that you believe in
 - think positively in the days before your talk imagining it going very well
 - prepare your presentation carefully and practice, practice, practice
 - come early to the room and set it up to make sure the technology works
 - focus on the science, your passion for the ideas and let that carry you

Elements of a great talk

2. Delivery: confidence

- projected confidence: what the audience sees from you
 - start strong
 - in the moments before your introduction engage with the audience and laugh/breathe
 - stand straight, move around, use your arms
 - make sure the first sound is not “Uh” or “Um”! Instead, memorize your first sentence and say it slowly
 - embrace the silence within a pause to let statements sink in with the audience
 - hold the laser pointer with TWO hands to point to something
 - do not turn around and read your slides – instead engage with the audience
 - have a hook....

Supraglacial rivers and their impact on surface melting of the Greenland Ice Sheet

Ginny Catania

Department of Geosciences and Institute for Geophysics
University of Texas, Austin

Big University Seminar Series
October 20, 2018



TEXAS Geosciences
The University of Texas at Austin
Jackson School of Geosciences
Institute for Geophysics

Elements of a great talk

2. Delivery: confidence

- Ways to “Set the hook”
 - Video/Graphics: some topics are best introduced without words (also takes the focus off of you if you’re nervous)

The Big Melt: How surface melt impacts Greenland

Ginny Catania

University of Texas, Austin



Elements of a great talk

2. Delivery: confidence

- Ways to “Set the hook”
 - Intriguing Structure: mapping out where your presentation is going to add a sense of drama



Elements of a great talk

2. Delivery: confidence

- Ways to “Set the hook”
- Tell them a story: reminds your audience that you are human and relatable
 - How did you get interested in your research? Think broadly to what would be of interest to a general audience – beyond specialists.
 - What big obstacles did you overcome to reach your goals?
 - What surprised you about your research once you had results?
 - Light-hearted self-deprecation can work well



INSTITUTE FOR GEOPHYSICS
JACKSON SCHOOL OF GEOSCIENCES

Slide 1 of 285

powered by mediasite

Playing 01:10/01:07:15

1x

UTIG Seminar Series 09/14/18-

UTIG Seminars

Dr. Amanda Thomas
Department of Earth Sciences
University of Oregon
<https://pages.uoregon.edu/amthomas/#contact>
Host: Prof. Thorsten Becker

"Machine learning applied to some outstanding problems in

9/14/2018 4:14 PM CDT Length: 01:07:15 More...

MACHINE LEARNING
APPLIED TO SOME
OUTSTANDING
PROBLEMS IN
EARTHQUAKE SCIENCE

AMANDA THOMAS,
TIM LIN, MARIANA GOMEZ-
OSPINA, DIEGO MELGAR,
AND GASPAR MONSALVE

Elements of a great talk

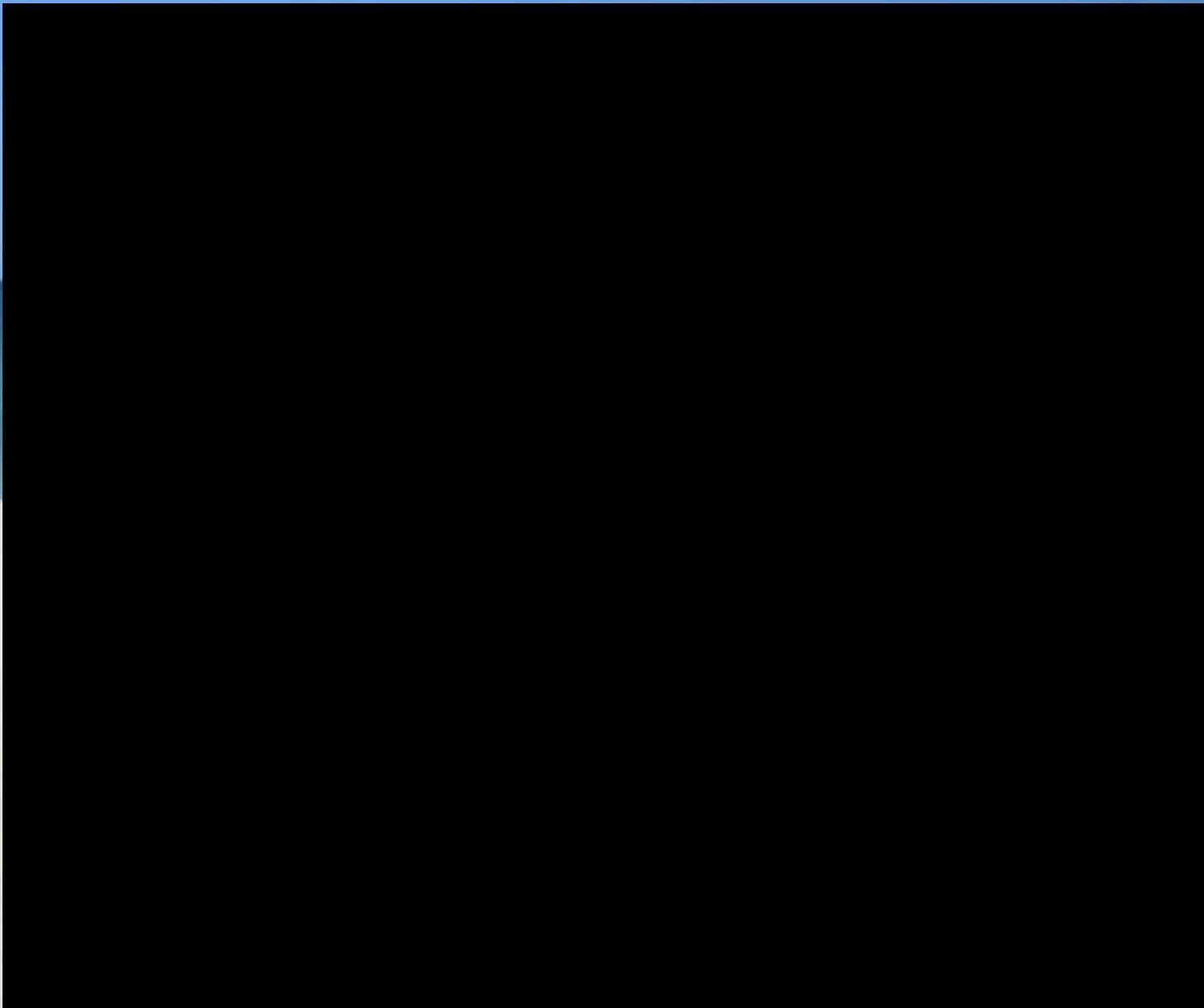
2. Delivery: confidence

- Ways to “Set the hook”
- What’s at stake in your research? “Make me care”
 - emotionally: “top-down” or the motivation for the taxpayer
 - intellectually: “bottom-up” motivation provides intellectual challenge or describes the elegance of the solution
 - “If we can do X via Y, and X is similar to Z, can we do Z via Y also?”

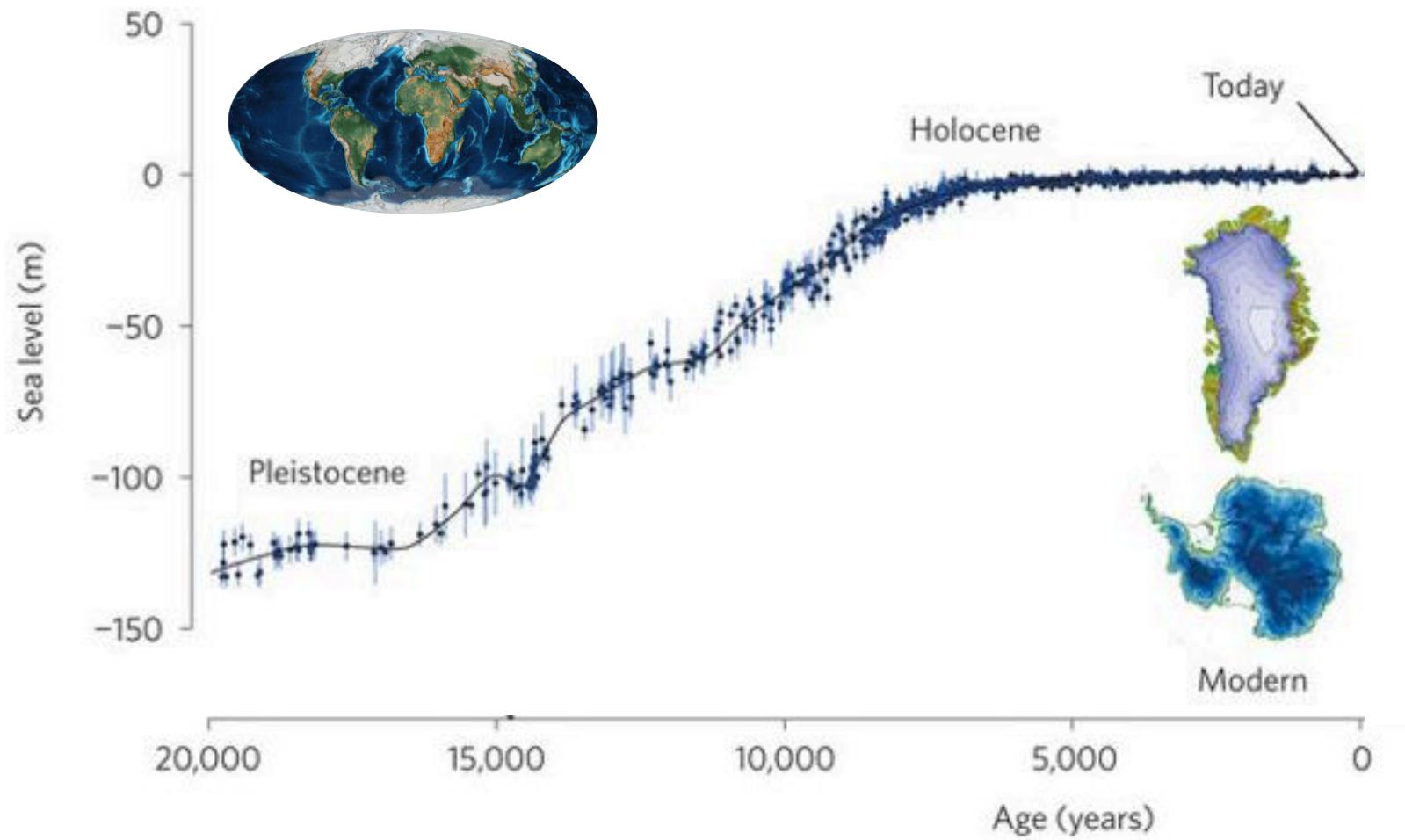
How will sea level change within our lifetimes?



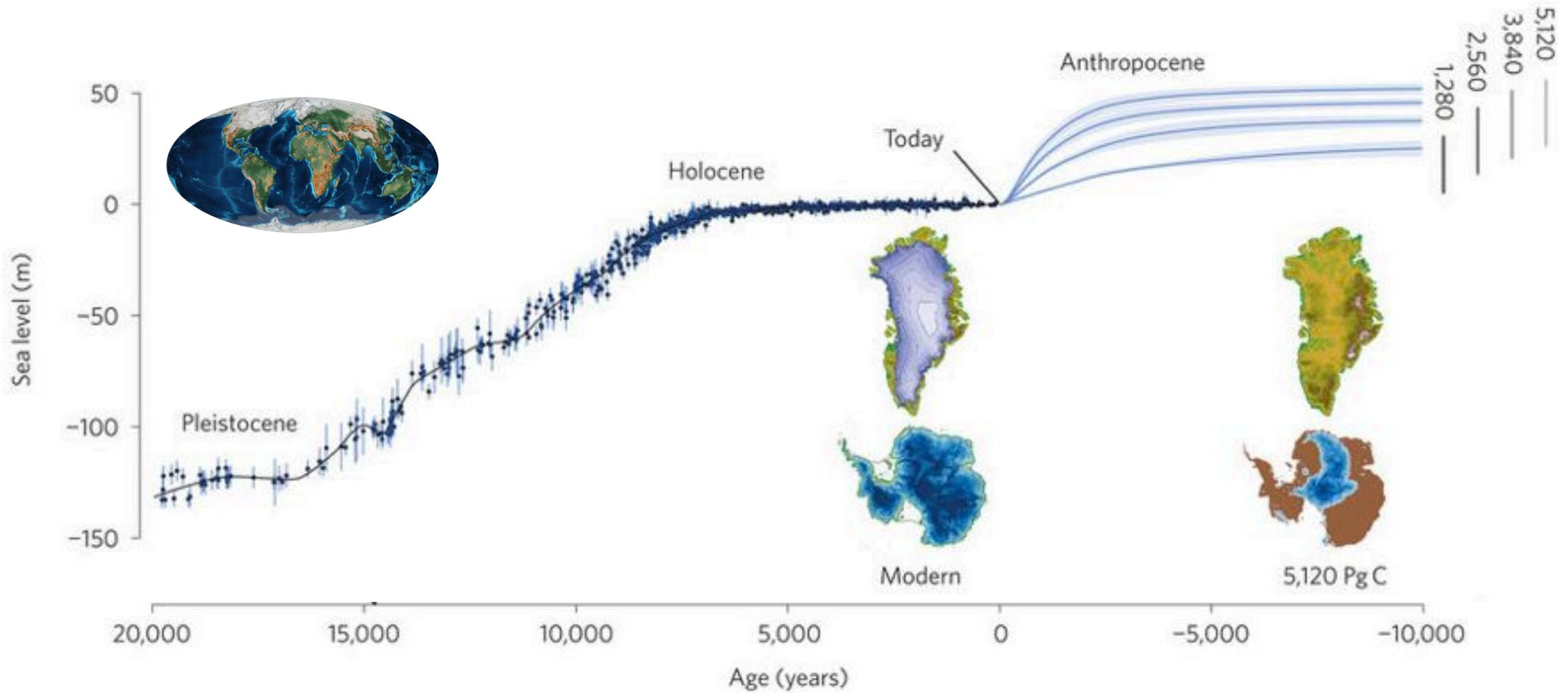
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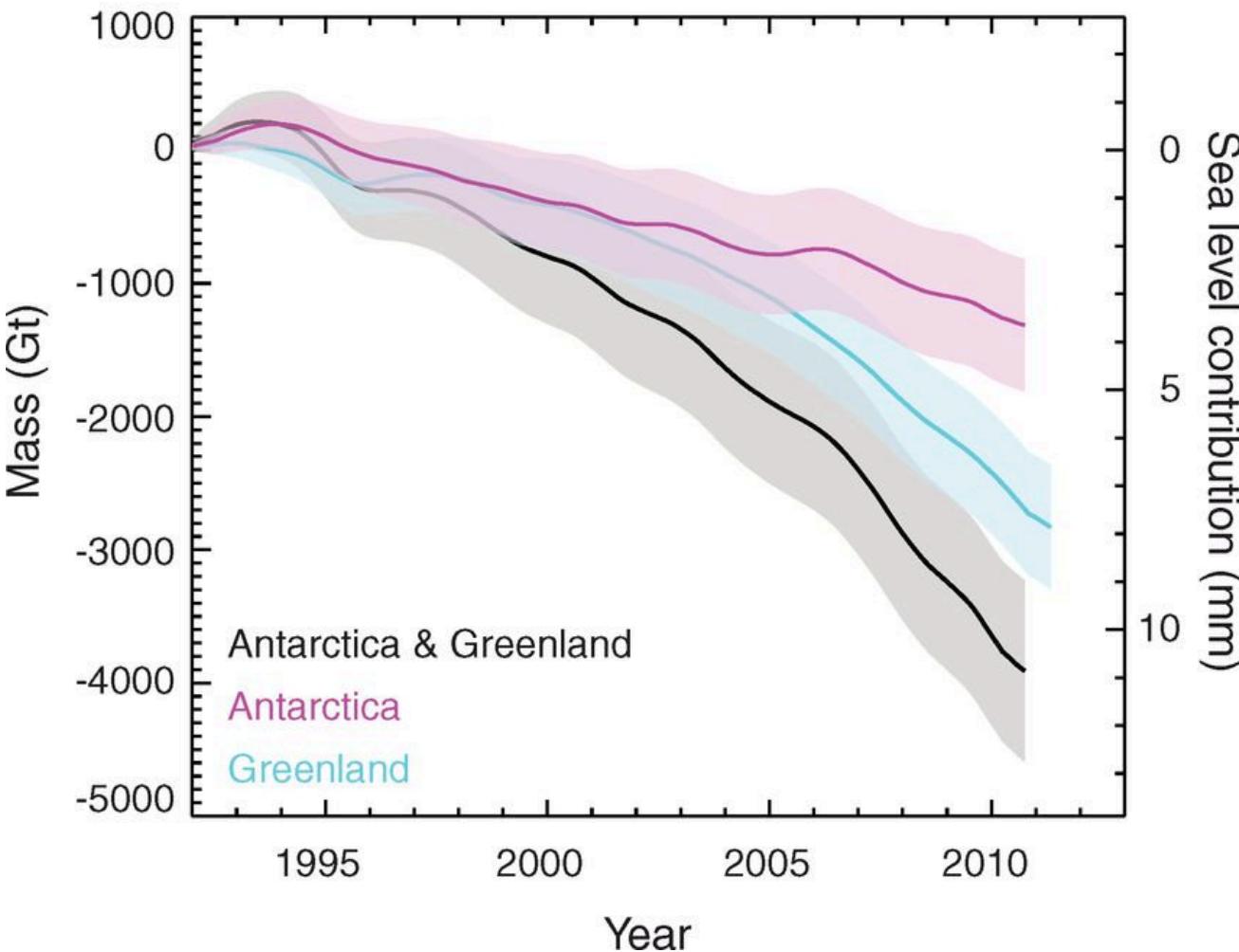
Ice sheet change is the primary driver of sea-level change



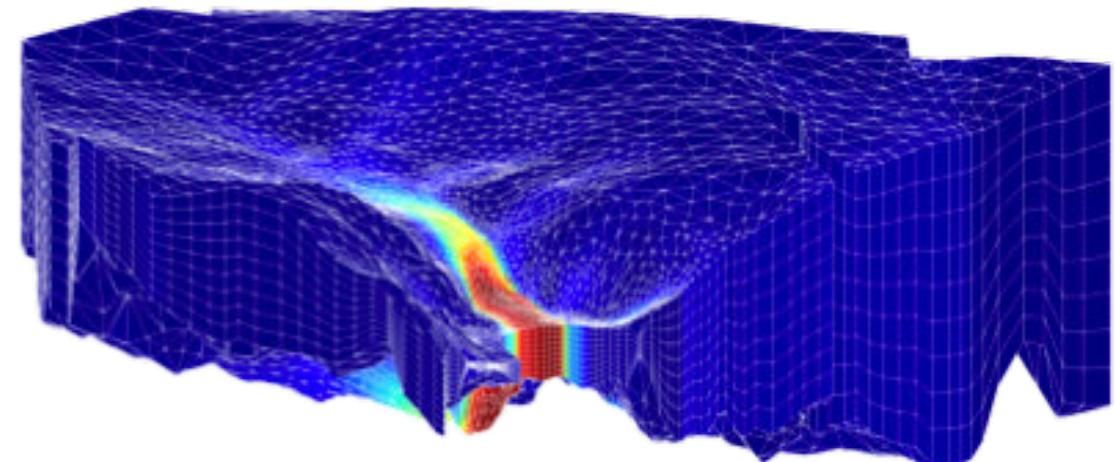
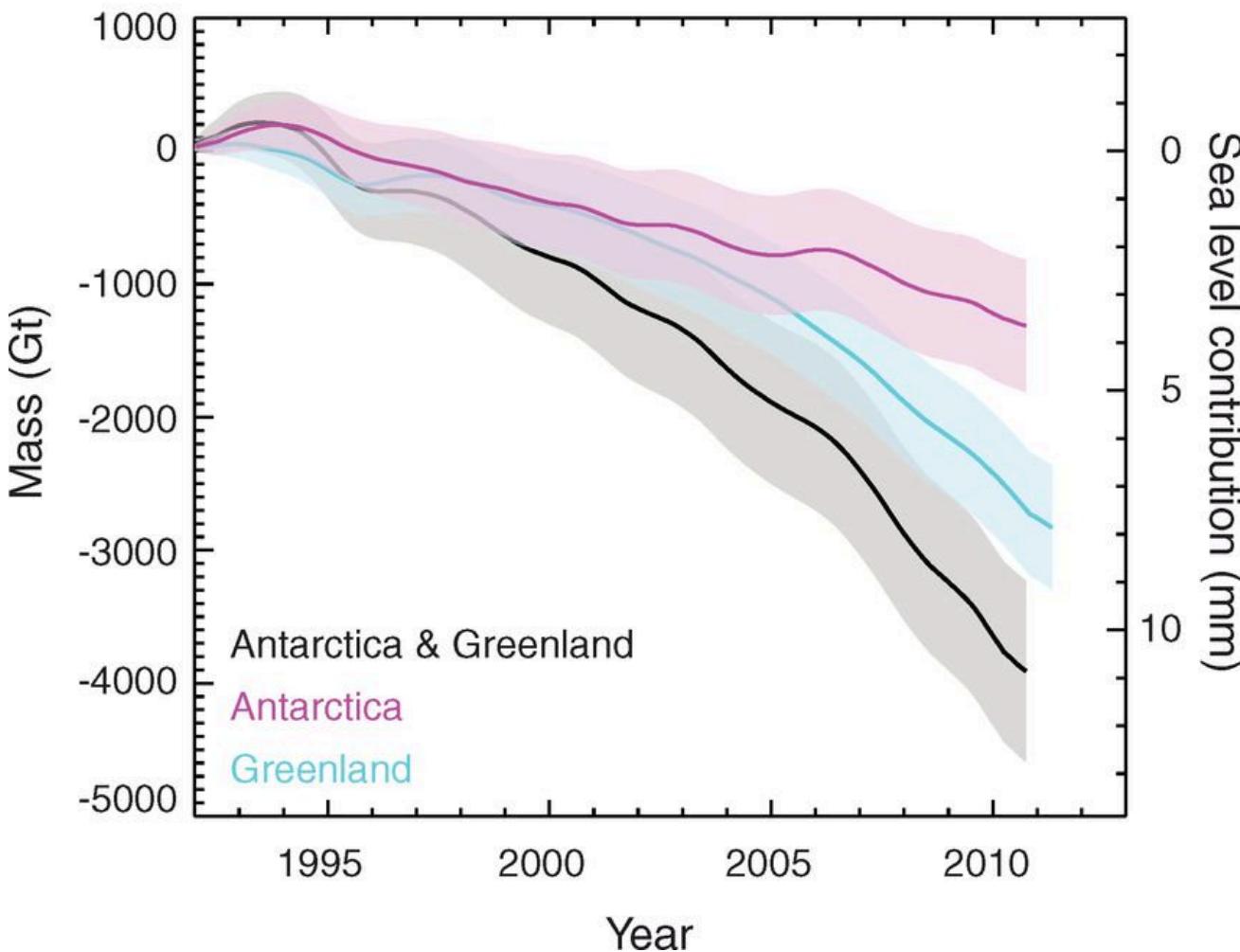
Large uncertainties exist in predictions of future sea-level



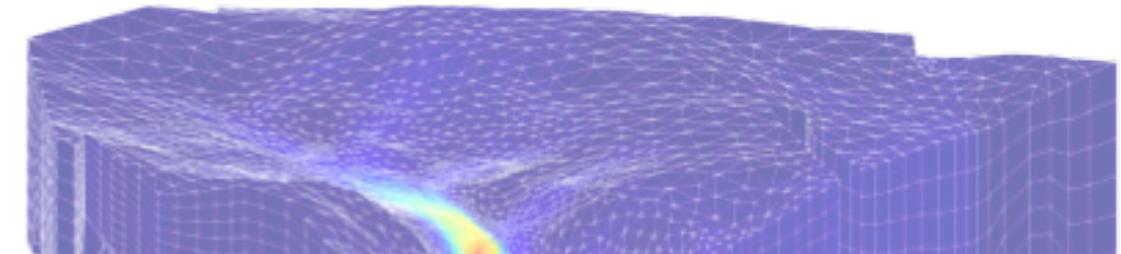
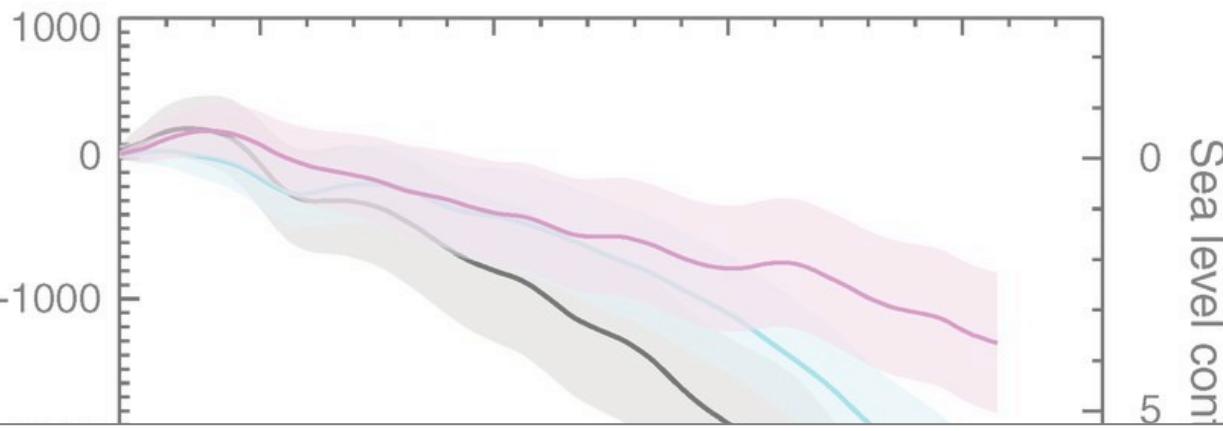
How do we get better estimates of future ice sheet change?



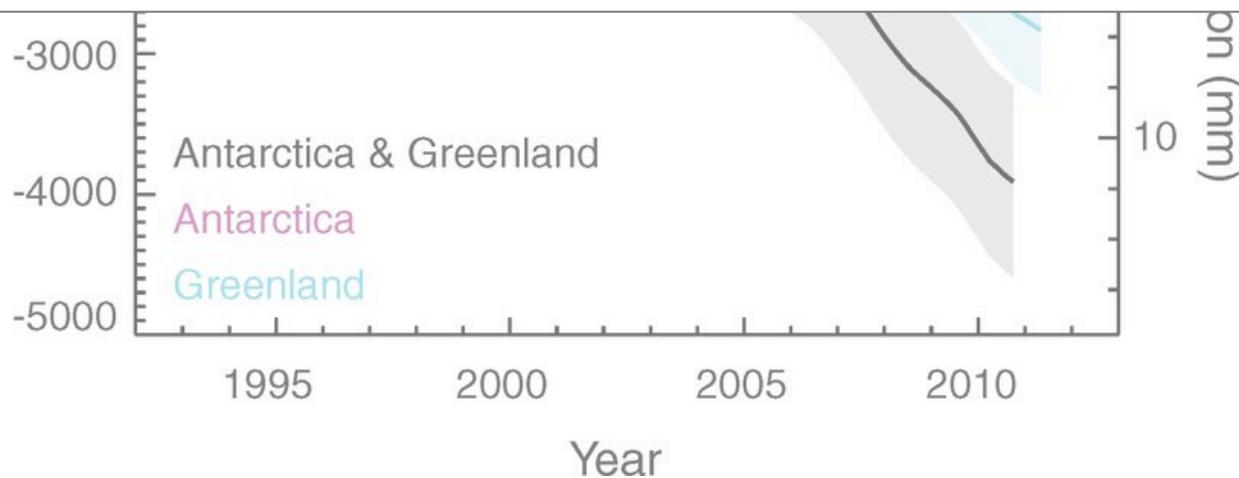
How do we get better estimates of future ice sheet change?



How do we get better estimates of future ice sheet change?



Ice sheet processes are of fundamental importance for improving projections



Elements of a great talk

2. Delivery: confidence

- projected confidence: what the audience sees from you
 - reduce the text on slides
 - assertion-evidence approach will build your talk on messages that are visually supported
 - these messages will prompt you to say what you need to say
 - reading text does not project confidence

Elements of a great talk

2. Delivery: confidence

- projected confidence: what the audience sees from you
 - know what comes next
 - rehearse, rehearse, rehearse!
 - but remember that a well-planned presentation that is delivered in a spontaneous manner is far more convincing than one where you've memorized your 'lines'
 - anticipate and lead your audience through the talk
 - make transitions that set up your next scene/point

Elements of a great talk

2. Delivery: confidence

- projected confidence: what the audience sees from you
 - finish strong
 - project the main takeaway, but keep it simple
 - make sure the audience knows that it's time to clap [pause, say “thank you” and after clapping ask for questions]

Elements of a great talk

1. Design
 - organization/timing/target audience
 - slide layout including figures

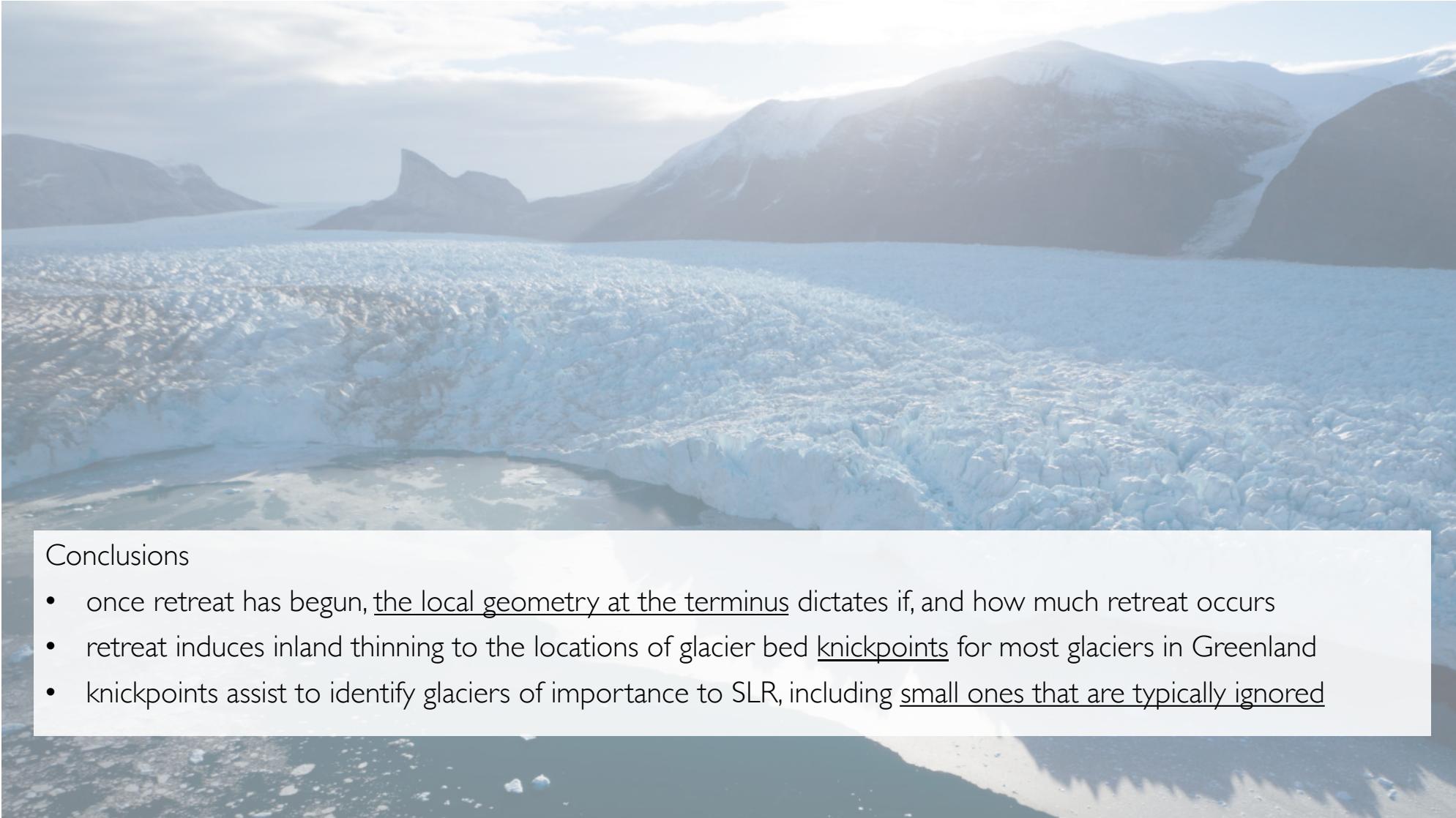
2. Delivery
 - confidence
 - **get your main ideas across**
 - maintain attention spans

Elements of a great talk

2. Delivery: get your main ideas across
 - don't feel like you have to present EVERYTHING you've worked on
 - cover only one project in depth and advertise the other work at the end
 - cite your papers in your talk
 - make your conclusions first and work backwards to use them to guide your talk

Elements of a great talk

2. Delivery: get your main ideas across



Conclusions

- once retreat has begun, the local geometry at the terminus dictates if, and how much retreat occurs
- retreat induces inland thinning to the locations of glacier bed knickpoints for most glaciers in Greenland
- knickpoints assist to identify glaciers of importance to SLR, including small ones that are typically ignored

Elements of a great talk

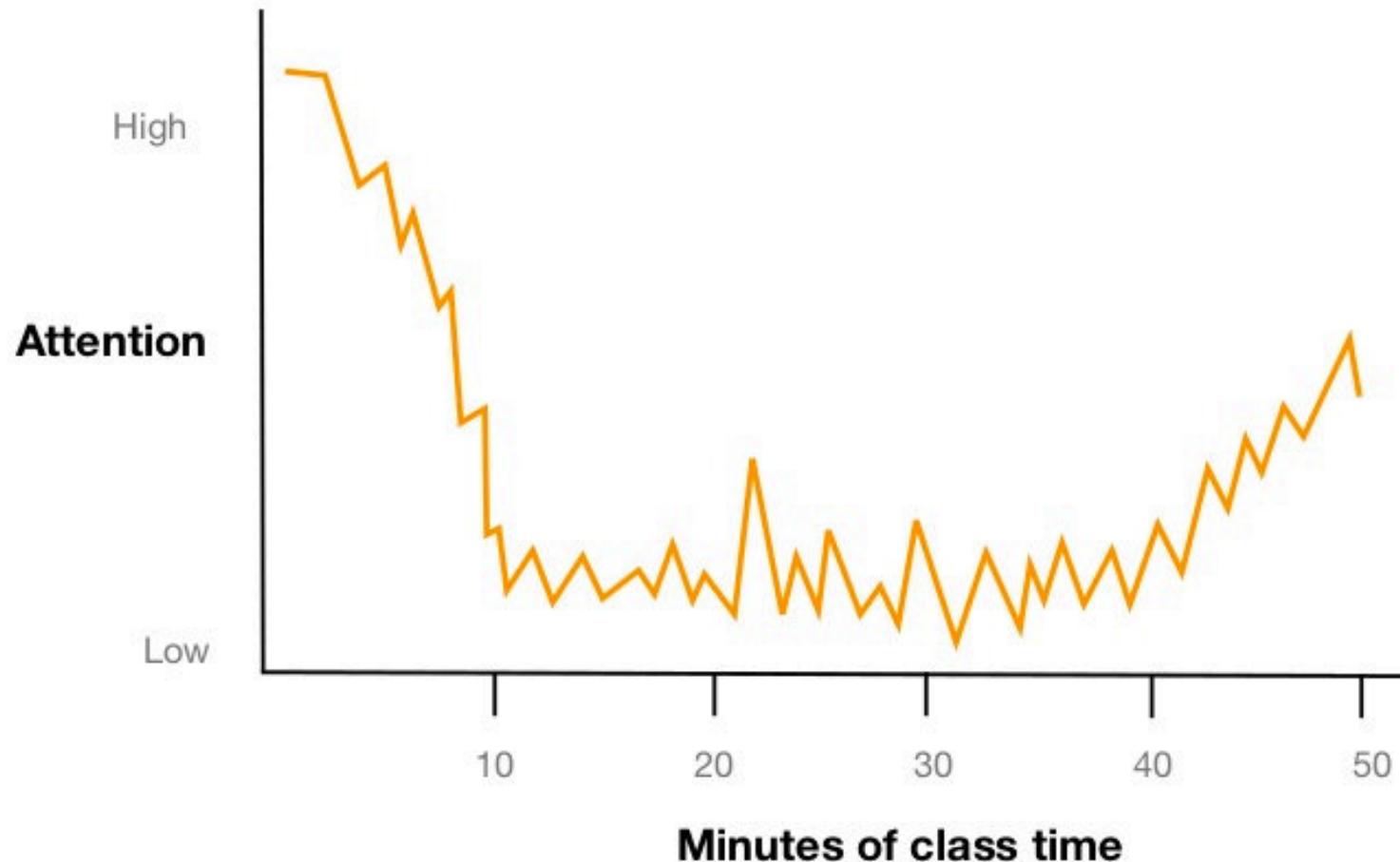
2. Delivery: get your main ideas across

Conclusions

- Surface water supply increases rapidly during high T periods and during rain events
- Peak stream height occurs at ~2pm local (4pm UTC)
- Peak stream height is coincident with peaks in daily temperature and rain events
- Moulin pressure is high during rain/high T events
- Moulin pressure peak lags stream height peak by 3.5 hours
- Periods of water generation correlate with faster ice flow/high moulin water pressure
- Coincident changes (event and diurnal time-scale) in borehole water pressure are observed across ~5km
 - Except FOXX2 from day 210 – 218 when out of phase with other sensors
- Peak borehole pressure lags peak stream height by 16hrs but *increases* over time
- Boreholes show *decrease* in water pressure during water-generation events
- Largest velocity increase occurs during prolonged rain event
- Perhaps moulin high pressure drives water to adjacent system; perhaps channels develop subglacially during water-generation events
- High speeds associated with high pressure in moulin (channelized system)

Elements of a great talk

2. Delivery: maintain attention
 - ask the audience questions
 - insert video clips
 - turn off slides altogether to make a really important point



Elements of a great talk

2. Answer questions

- your job isn't over yet – sometimes the Q&A session can be just as important as the talk itself
- Often the biggest challenge is to understand the question – ask for clarification by restating the question in your own words and asking if that's what the person meant
- It is not a crime to say 'I don't know' – it's actually empowering and can lead to new research endeavors
- never become argumentative or defensive with a questioner

For Next Week...

EXERCISE: Create the first 5-minutes of your job talk

- SET THE HOOK!
- aim at a general audience
- motivate the non-specialists about the importance of your subfield
- practice your word choice