

The Power of Persuasion



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The presentation today is comprised of three parts:

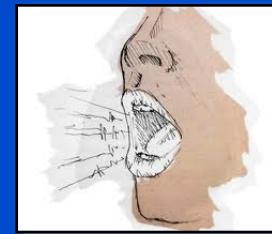
Enhancing your communication skills

Persuasive Scientific Presentations



If you want to be heard, you must:

Project your voice



Use good breathing techniques

View your whole body as an instrument of sound:

- the larynx and pharynx, the mouth, and the nose

Effective communication includes body language

Up to 93 % of communication
is non-verbal.

The eyes communicate more
than any other part of the
human anatomy.



An effective speaker looks like this:

Tall, open posture and gestures

Head up

Eye contact with the room



An ineffective speaker looks like this:

Gestures small, close to body, or hands in pockets or on face

Eyes avoiding the audience

Standing small with stooped posture



Stop using words that undercut your power

I'd just like to say something

I'm a bit concerned

Perhaps we should

I may not be right but what if we....

Others?

Use powerful and strong statements

Use

I'm confident
I know
I believe

Instead of

I think
I hope
I feel

I will do
I'm certain

I'll try
I'm not sure

Don't diminish your message

“You may already know this but...”

“I could be wrong...”

“It’s just my opinion but...”

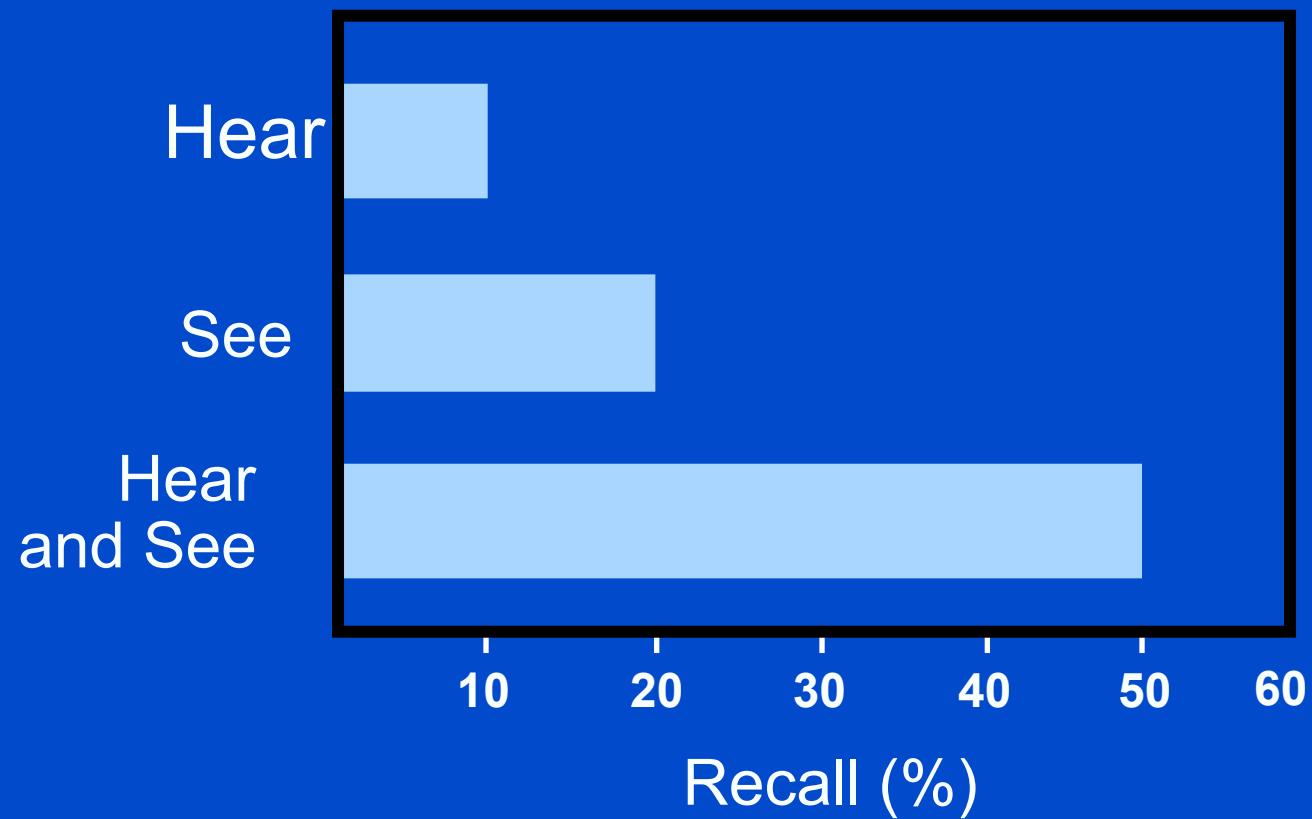
“This is probably a stupid question...”

“You probably know more about this than I do but...”

Persuasive Scientific Presentations



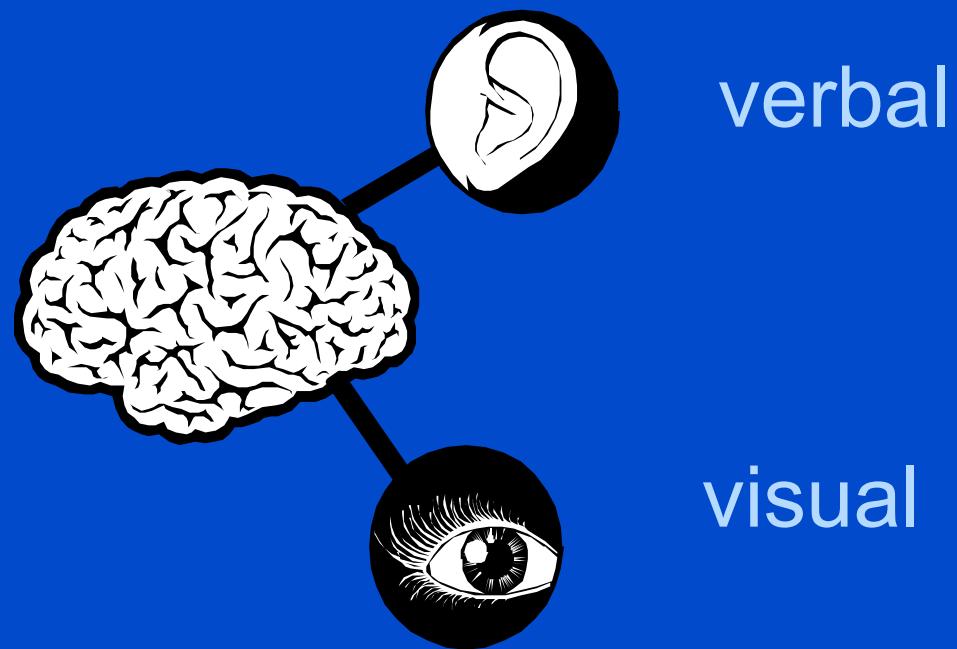
The best retention occurs for presentations that are both vocal and visual



Research shows that the brain is good at reading,
good at listening, but not doing both simultaneously.

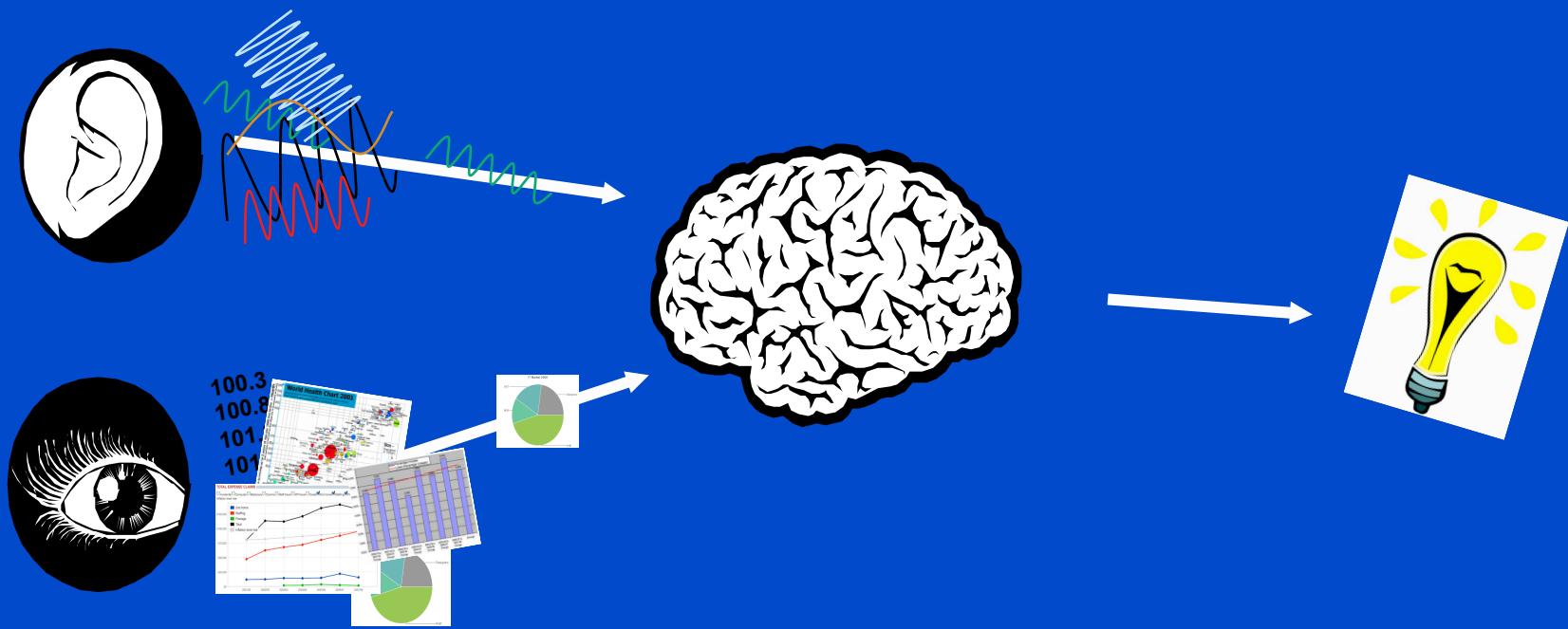


To resolve the problem we first have to understand how the brain works



Cognitive scientists say the mind processes information in 2 channels

The mind pays attention to only a few pieces of information in each channel



Then it must select, organize, and integrate what's important

To be effective, the audience must grasp the content quickly

Use short statements

Use images to increase comprehension

Use blank spaces to enhance readership

Water has special thermal properties

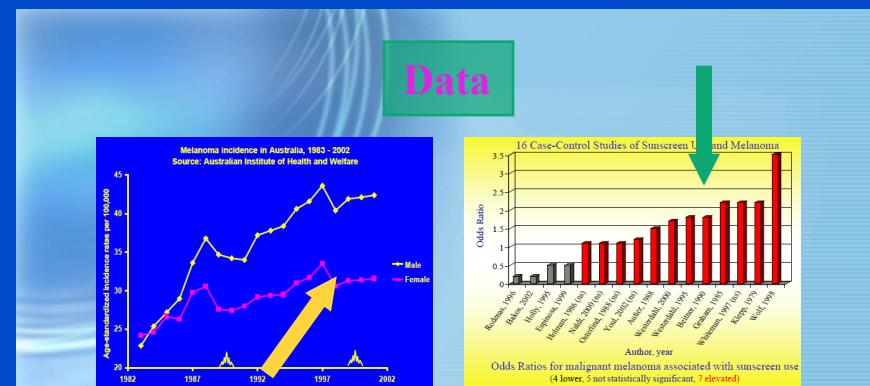
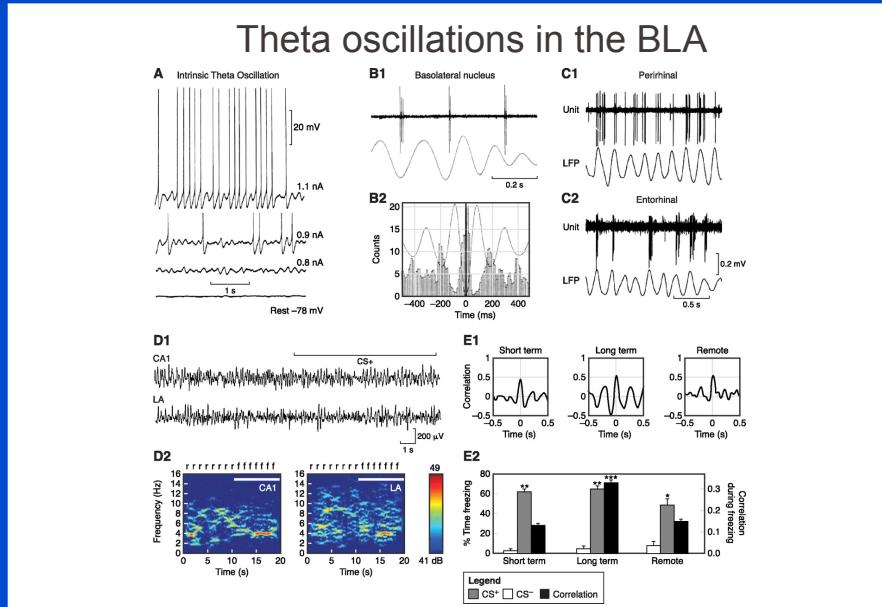
It helps to controls the climate on our planet



It helps to maintain our body temperature



Too much information and distractions can confuse and annoy your listeners



Don't force your audience to choose between
listening to you - OR reading your slides

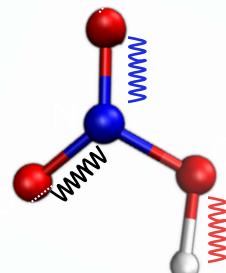


The slides should follow several rules

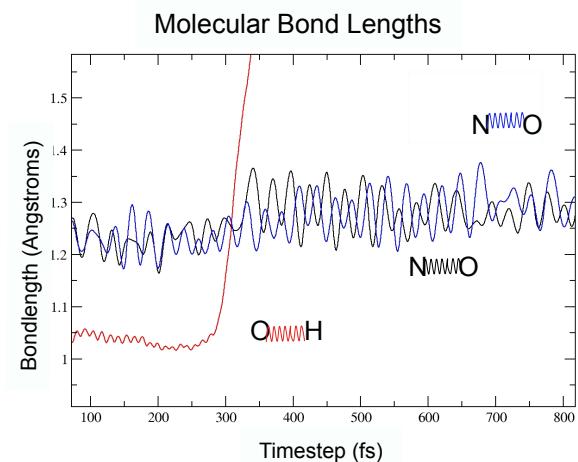
Use a sentence headline to state the slide's purpose

Use images to support the sentence

MD simulations show that nitric acid readily dissociates in water

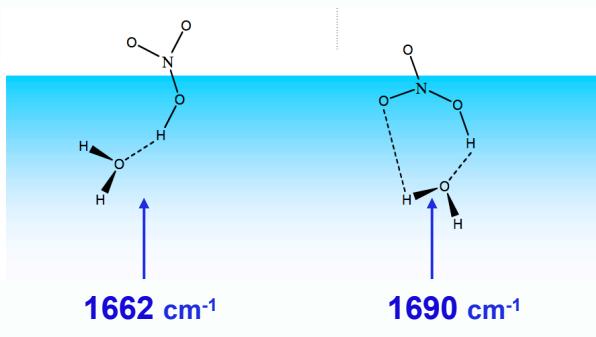
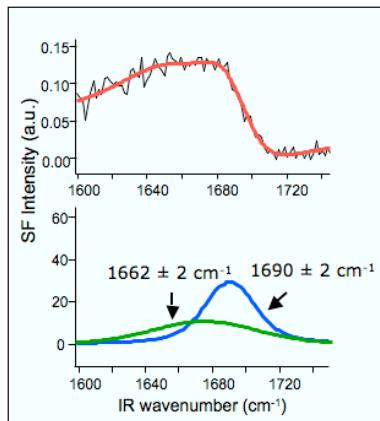


The OH bond breaks upon dissociation



The statement at the top should have no more than two lines

The surface spectroscopy shows nitric acid in two different forms at a water surface



The two HNO_3 molecules differ by the number of bonds to water.

Call-out, if necessary:
keep to 1-2 lines

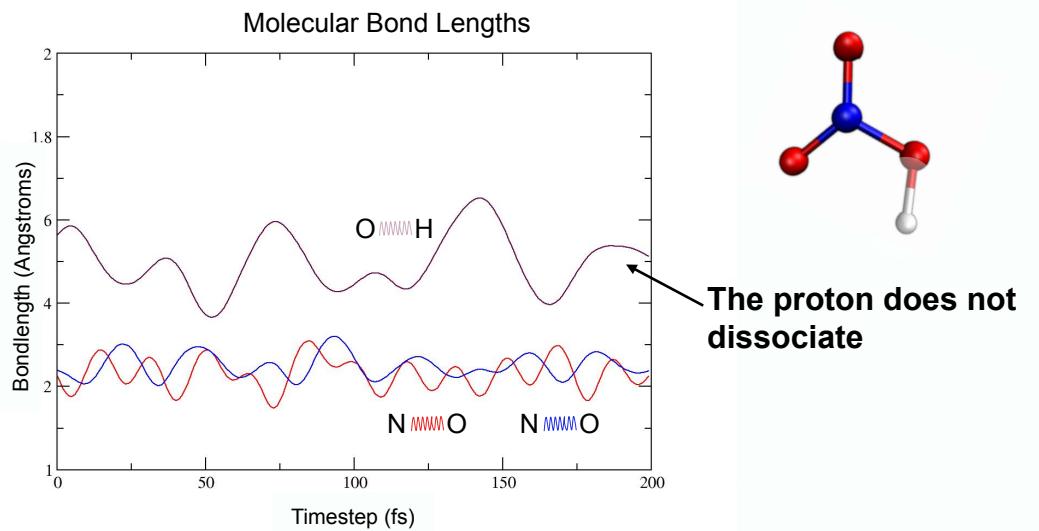
If necessary, identify key assumption or background for audience—keep to two lines (18–24 point type)

Use typography that is quickly and easily read

Use a readable simple font
(Arial, Gill Sans)

Use a high contrast between
words and background

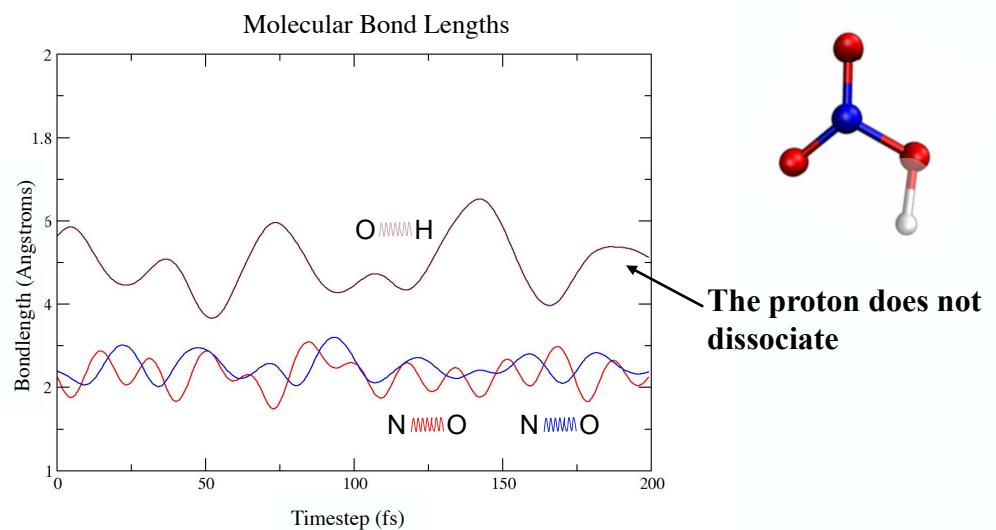
MD simulations show that nitric acid does not dissociate when on a water surface



Some fonts work for manuscripts but not for presentations

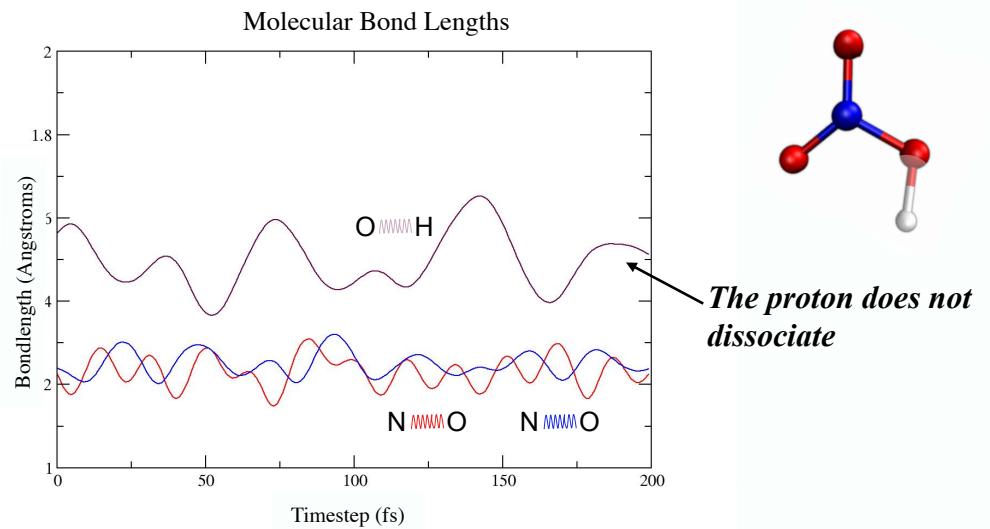
Times Roman Font is harder to read quickly

MD simulations show that nitric acid does not dissociate when on a water surface

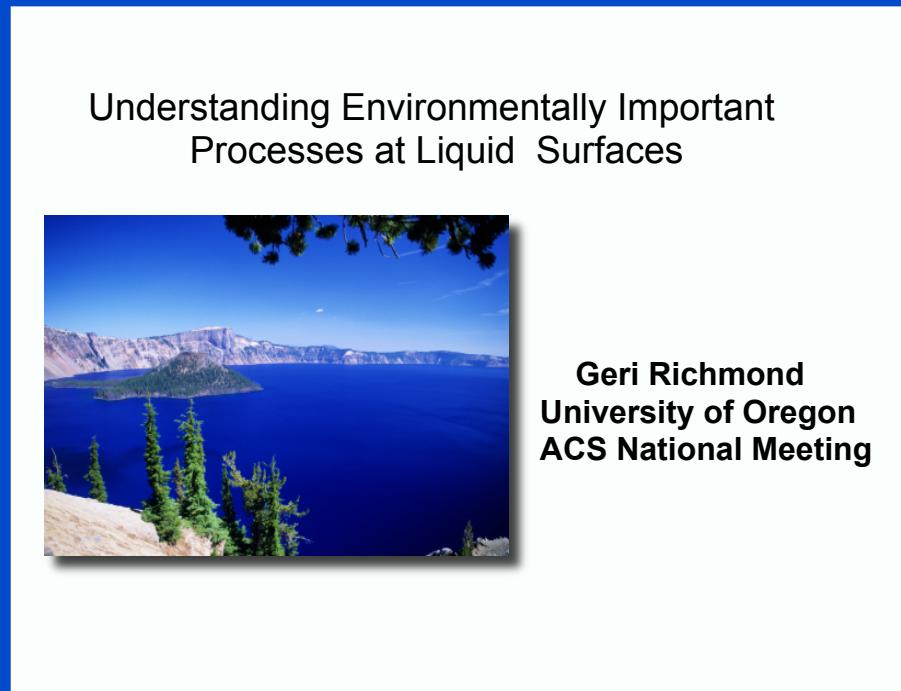
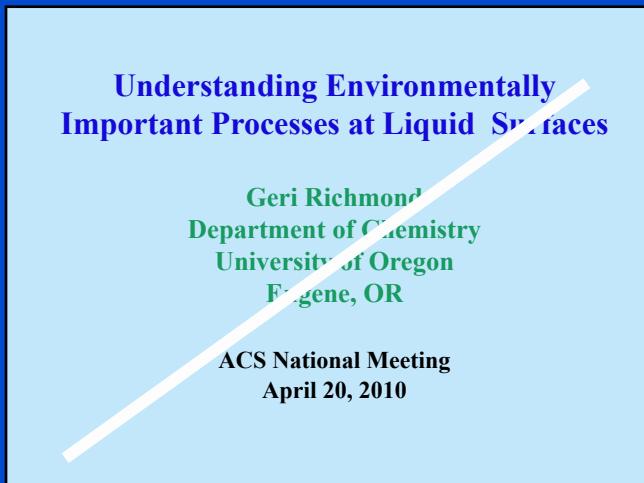


Even italics can slow the reading and comprehension

MD simulations show that nitric acid does not dissociate when on a water surface

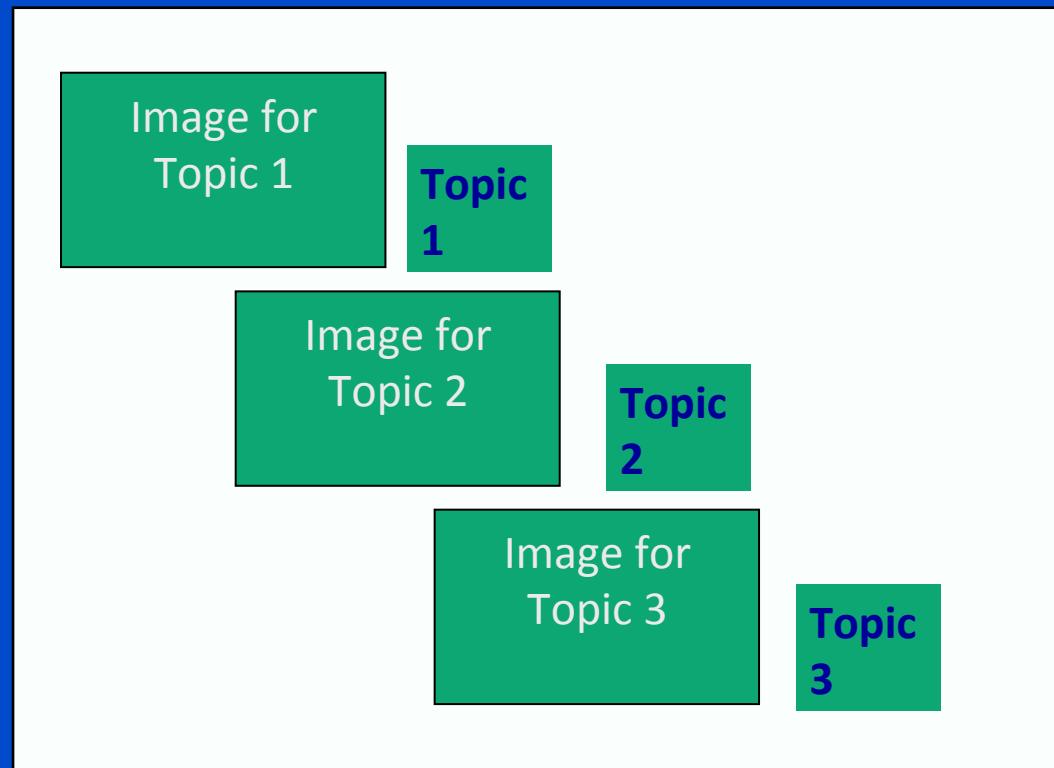


The title slide should draw interest



Use the title slide to connect with your audience

The “outline” slide should be a visual roadmap



The focus slide should be a visual roadmap

Presentation Outline

1. Introduction
2. Background
3. Methods
 - experimental
 - theoretical
4. VSFS studies of water surfaces
5. Studies of how gases adsorb on a water surface
 - room temperature studies
 - low temperatures studies
6. Studies of nitric acid at a water surface
7. Conclusions and future studies
8. Acknowledgements

This presentation shows the unique structure and reactivity that is present at water surfaces



hydrogen bonding at water surfaces



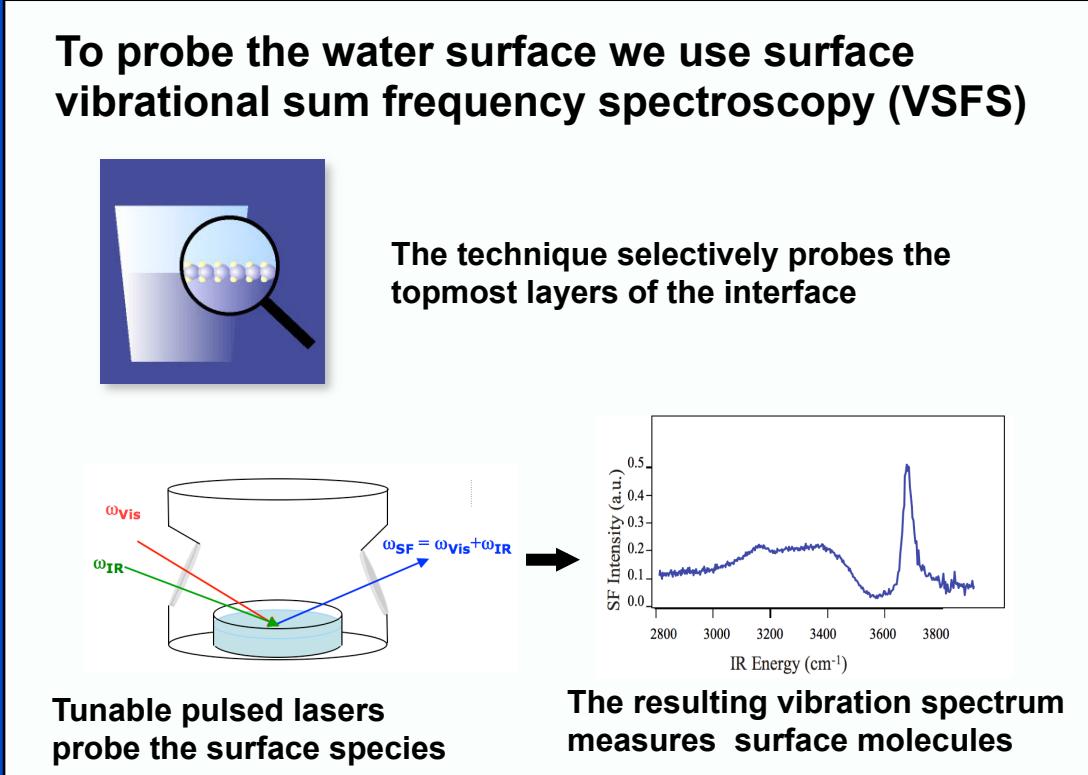
gaseous adsorption at water surfaces



surface acidity of HNO_3 solutions

The methods slide should follow the same format

To probe the water surface we use surface vibrational sum frequency spectroscopy (VSFS)



The technique selectively probes the topmost layers of the interface

Tunable pulsed lasers probe the surface species

The resulting vibration spectrum measures surface molecules

IR Energy (cm^{-1})

SF Intensity (a.u.)

IR Energy (cm^{-1})	SF Intensity (a.u.)
2800	0.10
3000	0.10
3100	0.15
3200	0.20
3300	0.15
3400	0.20
3500	0.05
3600	0.05
3700	0.45
3800	0.10

The most difficult part is to consider what to include and what to exclude on each slide

The summary slide headline states the most important assertion of the presentation

This sentence summarizes the most important conclusion of the presentation)

Supporting point (no more than two lines)

Another supporting point (parallel to the first)

Image that supports conclusion

Don't use long lists that limit comprehension

Summary of the This Presentation

- The amazing discovery that no one knew about
- Another remarkable discovery that you maybe knew
- A third fact that you might not have noticed
- And a fourth finding that only few people ever heard of
- Throw in a fifth discovery that I particularly like
- A sixth discovery that I didn't have time to talk about
- And two final smaller discoveries that are also important
 - the one found in the noise
 - a second found by turning the data upside down

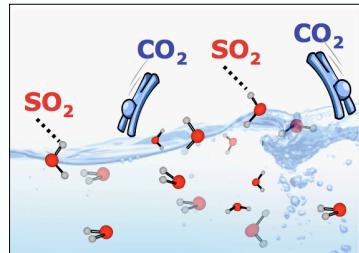
Avoid lists with more than
four items.

The summary slide headline states the most important assertion of the presentation

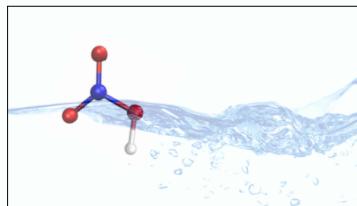
The surface of water has unique properties that control its chemical properties



Water participates in weak H-bonding at the topmost surface layers



SO₂ adsorbs at the surface whereas CO₂ quickly absorbs



Nitric acid is a weak acid at aqueous surfaces

Keep your audience engaged

Don't read your slides!

Don't talk to your slides!

Don't apologize for your slides!



Limit the number of slides

Max: 1 slide per minute

Focus of issues discussed

Enhancing your Communication Skills

Persuasive Scientific Presentations

THANK YOU!

