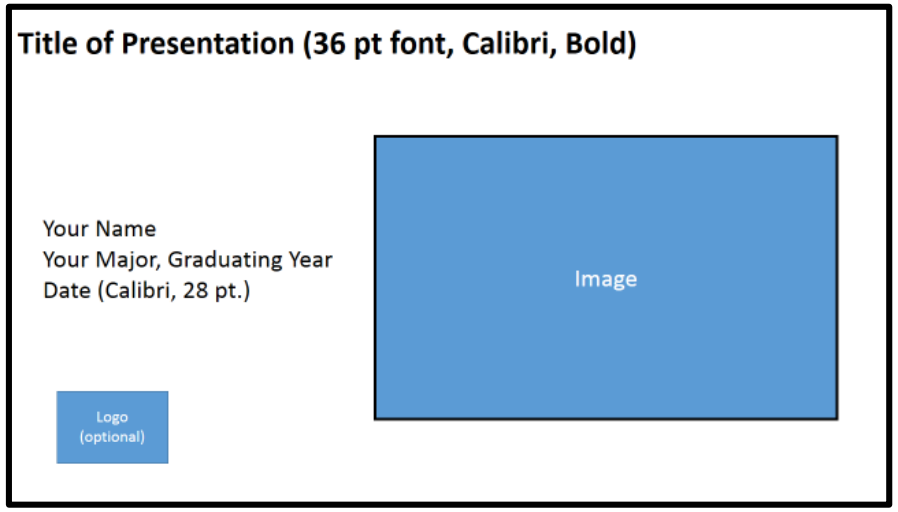
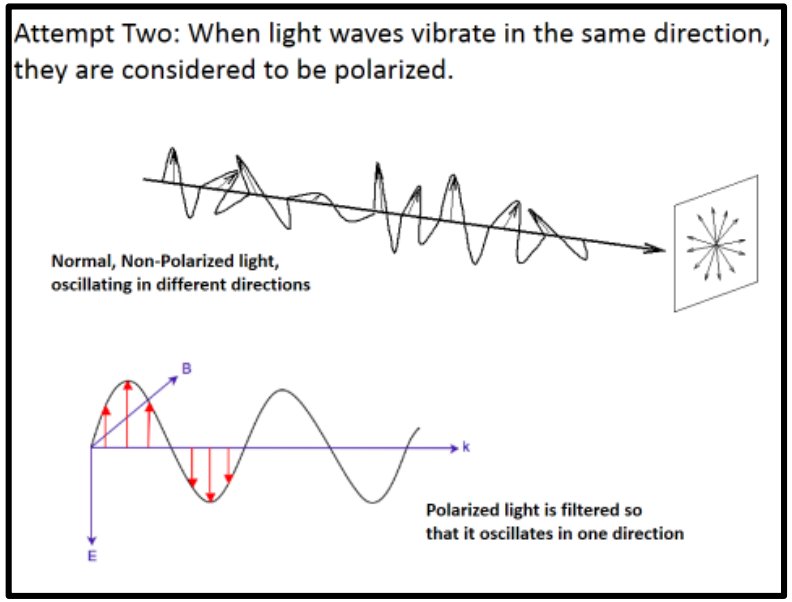
How to Deliver an Effective Presentation

Genesis Quiles-Galarza
Joshua Leveillee
Amy Hernandez
UConn Engineering Ambassadors

There are three aspects to delivering an effective presentation: design, content, and delivery.



Design

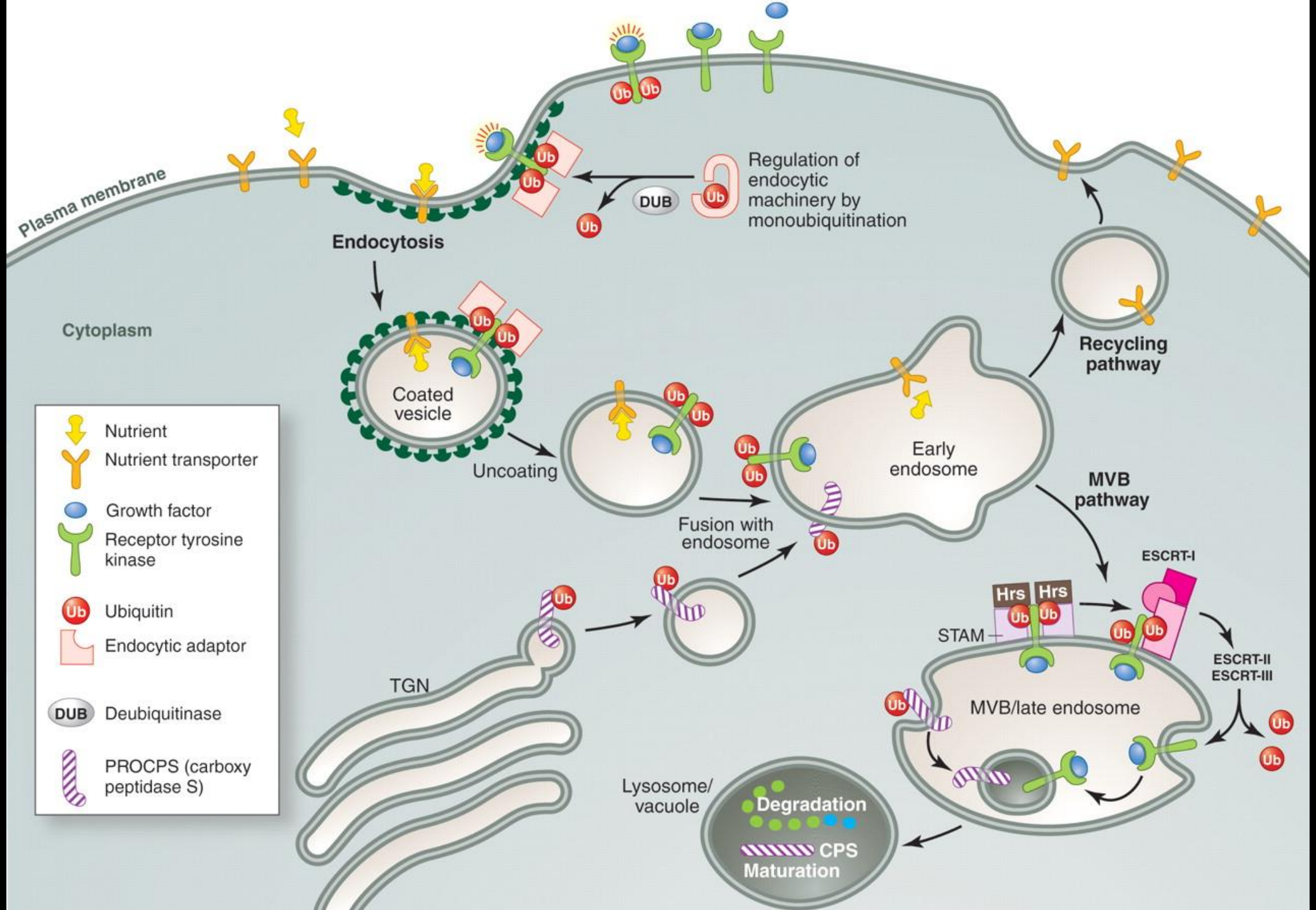


Content

Delivery

Order of Analysis

- **Orbiter assessment of ascent debris damage includes**
  - **Evaluation of potential for debris to damage tile and RCC**
    - **Program "Crater" is official evaluation tool**
      - Available test data for SOFI on tile was reviewed
      - No SOFI on RCC test data available
    - **Even for worst case, SIP and densified tile layer will remain when SOFI is impactor**
  - **Thermal analysis of areas with damaged tiles**
    - **Thermal analysis will predict potential tile erosion and temperatures on structure**
  - **Structural assessment based on thermal environment defined above**
    - **Basis is previous Micrometeriod and Orbital Debris (M/OD) study performed in 1996**


Plasma membrane
Cytoplasm
Endocytosis
Regulation of endocytic machinery by monoubiquitination
DUB
Ub
Coated vesicle
Uncoating
Fusion with endosome
Early endosome
Recycling pathway
MVB pathway
ESCRT-I
Hrs
STAM
ESCRT-II
ESCRT-III
MVB/late endosome
TGN
Lysosome/ vacuole
Degradation
CPS Maturation
Nutrient
Nutrient transporter
Growth factor
Receptor tyrosine kinase
Ubiquitin
Endocytic adaptor
Deubiquitinase
PROCPS (carboxy peptidase S)

Partial Fugacity Coefficient & EOS – Mixture

Previously we derive $\therefore \ln \phi_i = \int_0^P (Z_i - 1)\frac{dP}{P}$ The same concept can be applied to $\ln \hat{\phi}_i$

$\therefore \ln \hat{\phi}_i = \int_0^P (\bar{Z}_i - 1)\frac{dP}{P}$, where $\bar{Z}_i = \left[\frac{\partial(nZ)}{\partial n_i}\right]_{T,P,n_{j\neq i}}$ HW: Practice the derivation!

When EOS is expressed in the 2nd virial coefficient at moderate or low P

(in Chapter 6) $Z = 1 + \frac{BP}{RT}$ $\bar{Z}_i = \left\{\frac{\partial\left[n\left(1+\frac{BP}{RT}\right)\right]}{\partial n_i}\right\}_{T,P,n_{j\neq i}} = 1 + \frac{P}{RT}\left[\frac{\partial(nB)}{\partial n_i}\right]_{T,P,n_{j\neq i}}$ (if B is not a function of *P*)

For gaseous mixtures at low or moderate P, the second virial coefficient can be expressed $B = \sum_i \sum_j y_i y_j B_{ij}$ where B_{ij} accounts for the interaction between i and j molecules. Thus $B_{ij} = B_{ji}$

For a binary system

$$B = y_1 y_1 B_{11} + 2y_1 y_2 B_{12} + y_2 y_2 B_{22} = y_1(1-y_2)B_{11} + 2y_1 y_2 B_{12} + y_2(1-y_1)B_{22} = y_1 B_{11} + y_2 B_{22} + (2B_{12} - B_{11} - B_{22})y_1 y_2$$

It can be rewritten, $B = y_1 B_{11} + y_2 B_{22} + \delta_{12} y_1 y_2$, where $\delta_{12} = 2B_{12} - B_{11} - B_{22}$ $\therefore nB = n_1 B_{11} + n_2 B_{22} + \delta_{12}\frac{n_1 n_2}{n}$

$$\left[\frac{\partial(nB)}{\partial n_i}\right]_{T,P,n_{j\neq i}} = B_{11} + \frac{(n_2 n - n_1 n_2)}{n^2}\delta_{12} = B_{11} + \frac{n_2^2}{n^2}\delta_{12} = B_{11} + y_2^2 \delta_{12}$$

Therefore, the knowledge of B_{11}, B_{22} and B_{12} is required! B_{11} and B_{22} can be calculated (in Chap 3) for pure species. How about B_{12} ?

$\therefore \ln \hat{\phi}_1 = \frac{P}{RT}(B_{11} + y_2^2 \delta_{12})$, $\ln \hat{\phi}_2 = \frac{P}{RT}(B_{22} + y_1^2 \delta_{12})$,

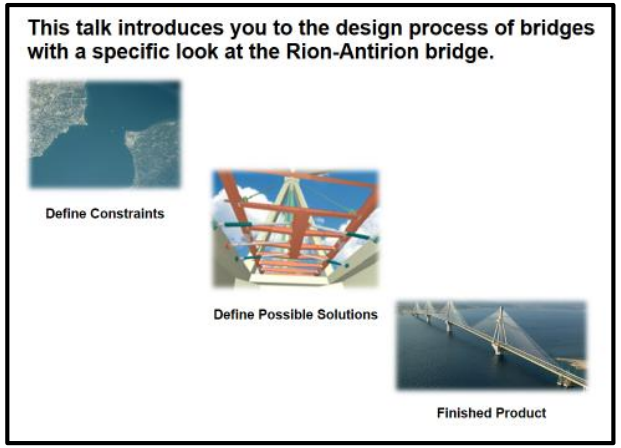
Assertion Evidence Slide Design for Technical Presentations

Genesis Quiles-Galarza
Chemical Engineering, 2016
EA Vice President of Internal Affairs
October 24, 2013

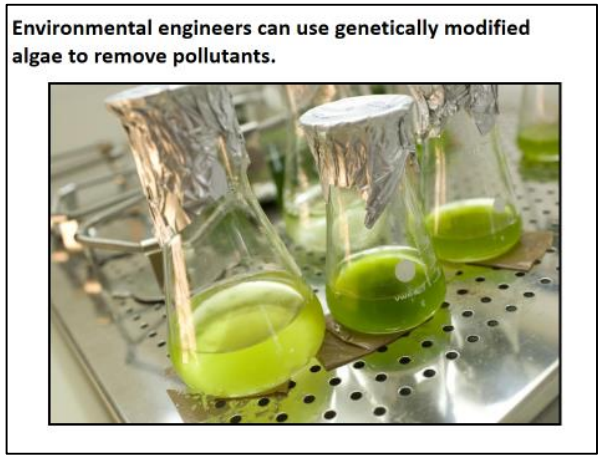
ENGINEERING AMBASSADORS NETWORK

Today we will review four types of assertion evidence slides: title slides, mapping slides, body slides, and conclusion slides.

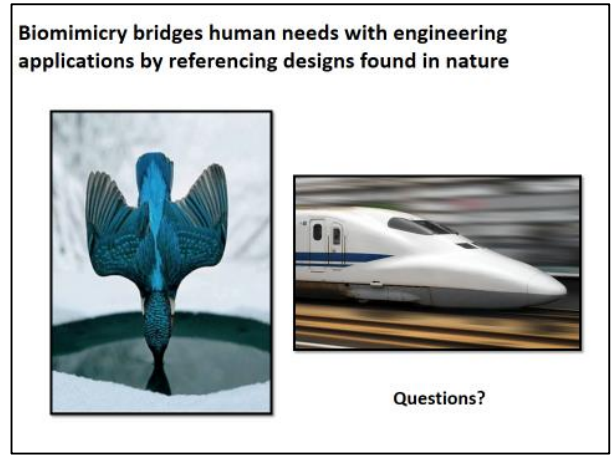
Title Slides



Mapping Slides



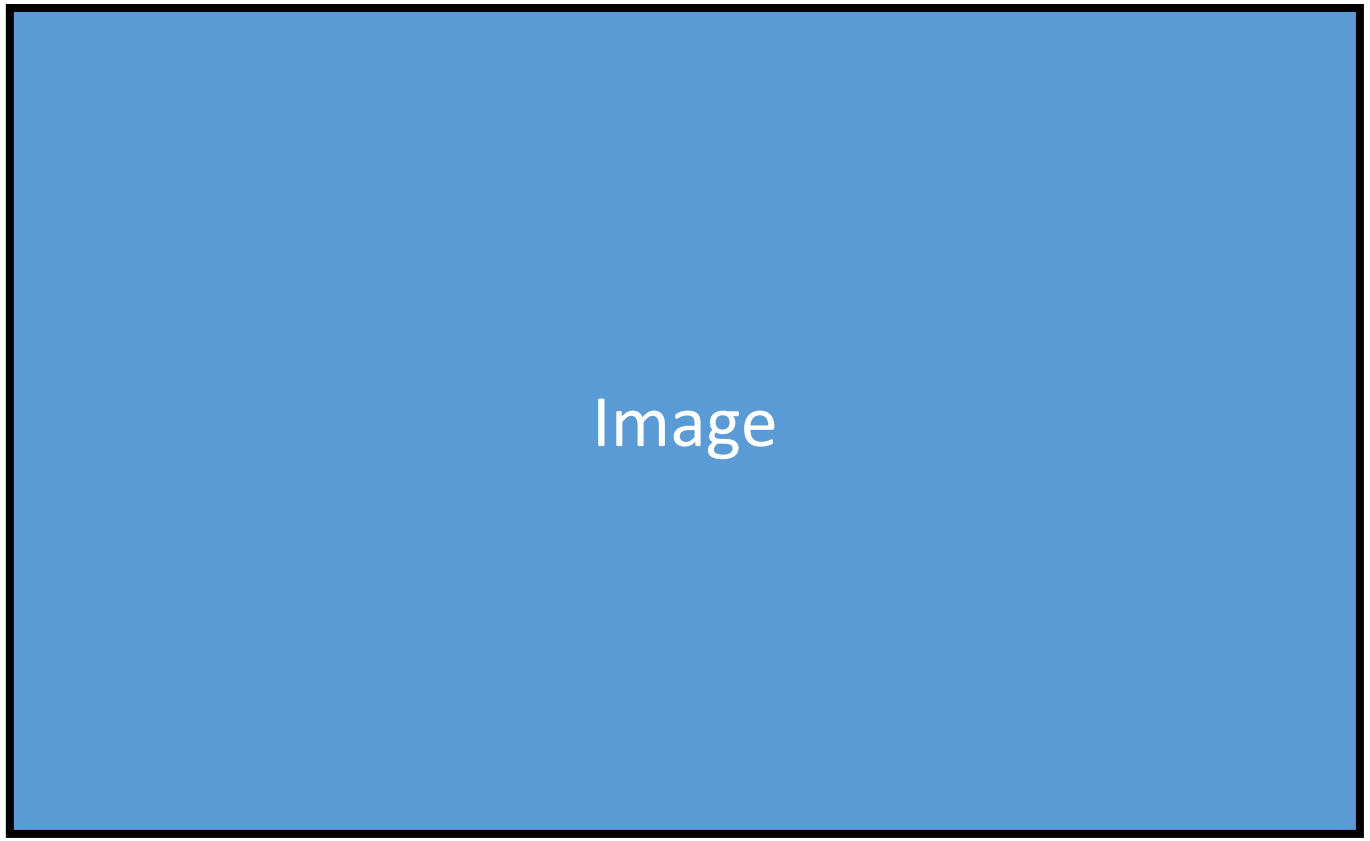
Body Slides



Conclusion Slides

Title of Presentation (36 pt font, Calibri, Bold)

Your Name
Your Major, Graduating Year
Date (Calibri, 28 pt.)



Logo
(optional)

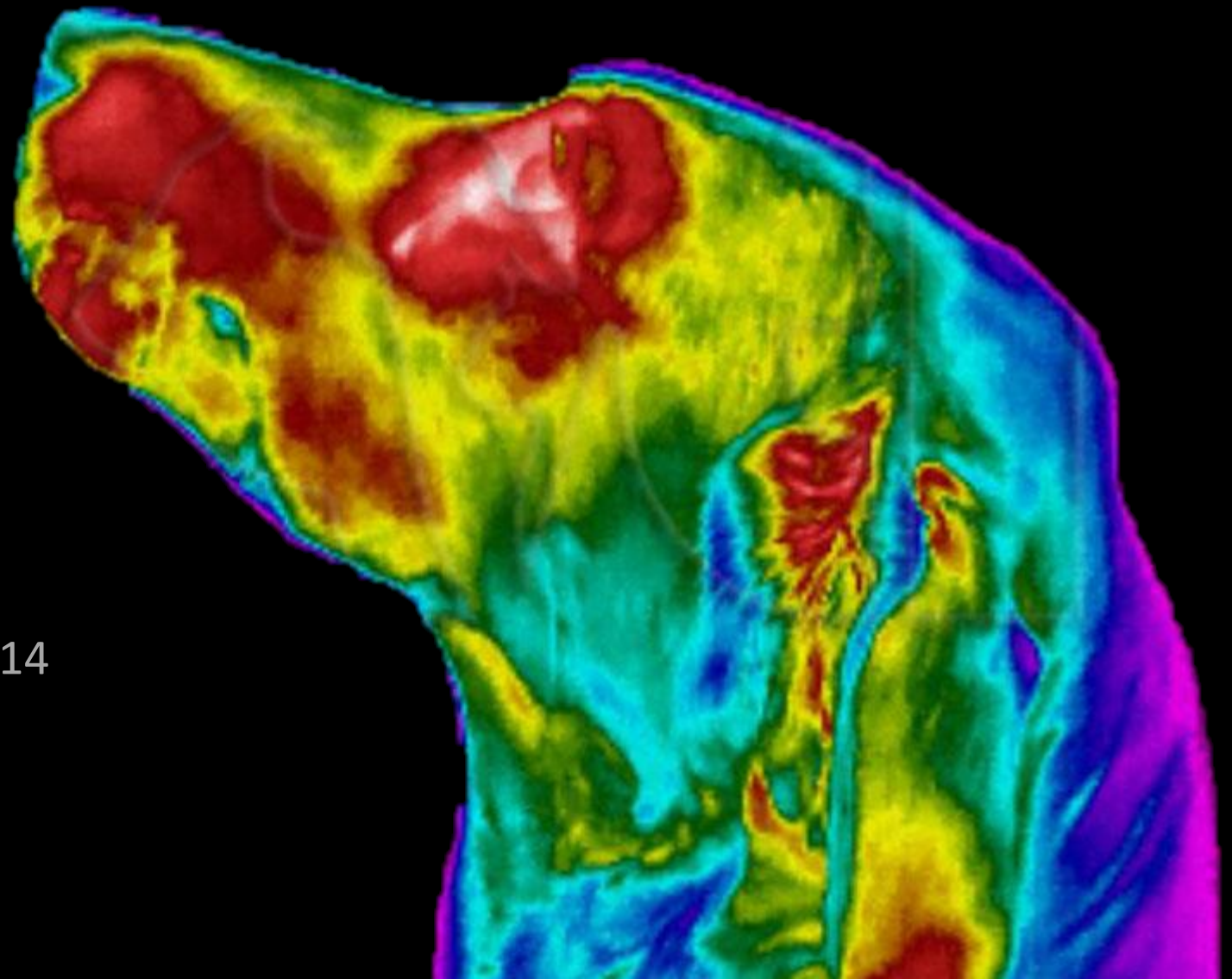
Title of Presentation (36 pt font, Calibri, Bold)

Your Name
Your Major, Graduating Year
Date (Calibri, 28 pt.)

Image

Logo
(optional)

Homeostasis in our Environment



Josh Leveillee

Material Science Engineering, 2014

Genesis Quiles-Galarza

Chemical Engineering, 2016

Atmospheric Mercury Depletion Events in Polar Regions during Arctic Spring

Katrine Aspmo

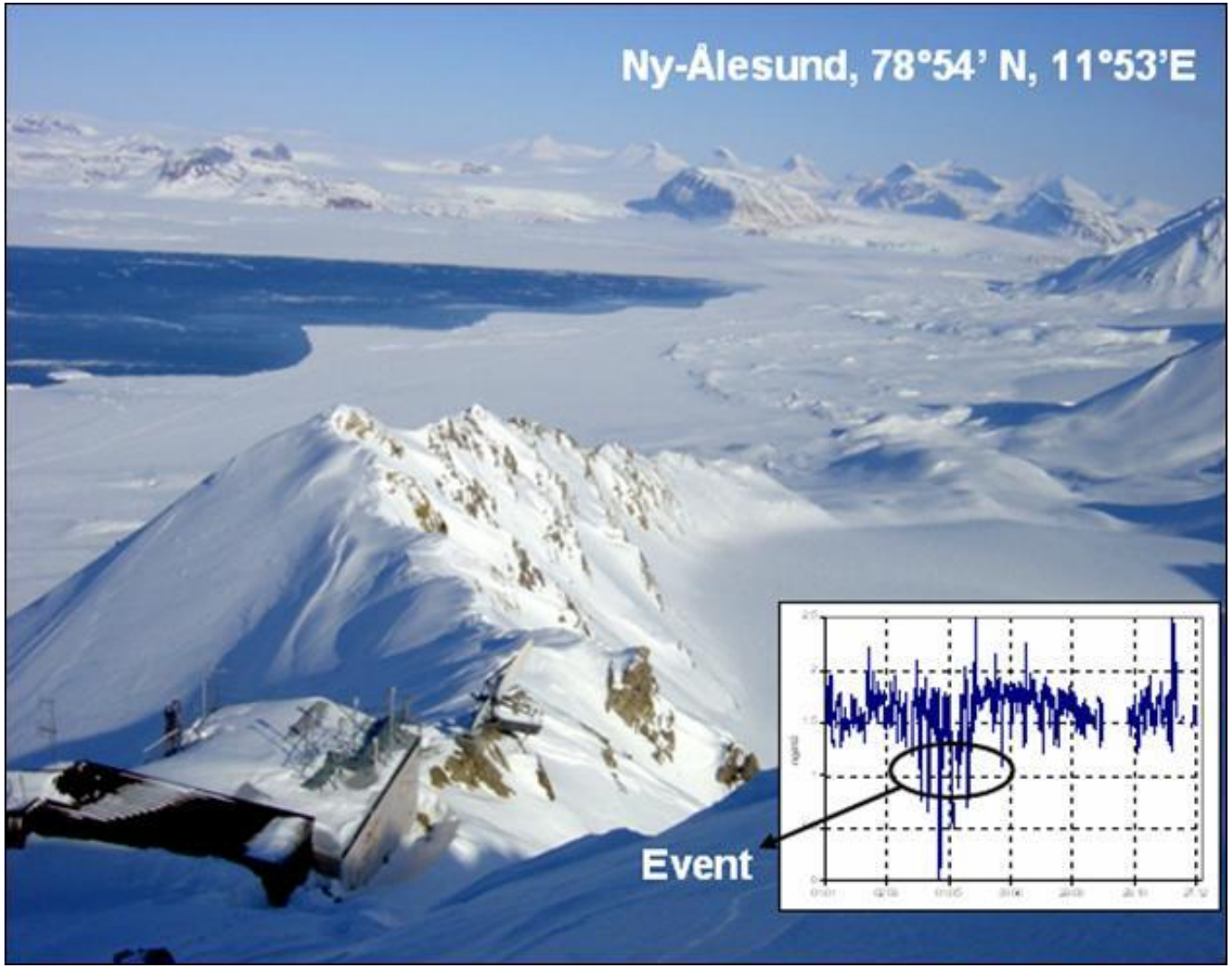
Torunn Berg

Norwegian Institute for Air Research

Grethe Wibetoe

University of Oslo, Dept. of Chemistry

16 June 2004



This presentation focuses on…. (Complete sentence, no more than two lines; Calibri Bold, 28 point font)

Topic 1

Topic 2

Topic 3

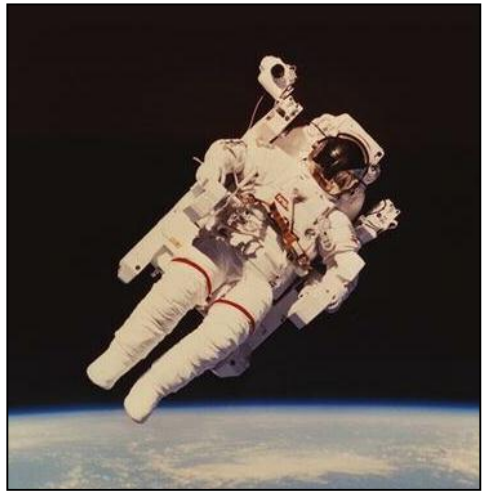
Outline

- Intro
- Backgr
- Propulsio
- Landing
- Re-entry
- Exploration
  - Space su
  - Rover
- Concl
- Ackn gments
- Question

Newton’s laws help engineers fly astronauts to the moon and return them home safely

Propulsion

Landing

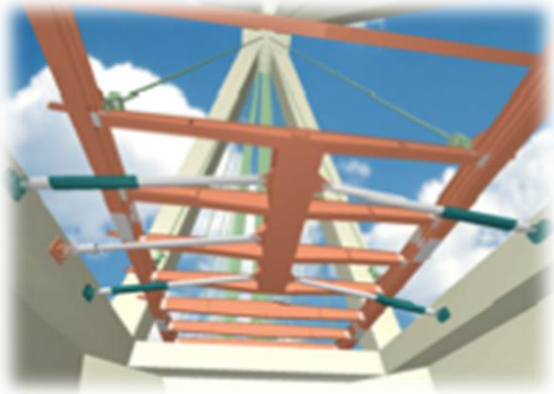


Exploration

Re-entry

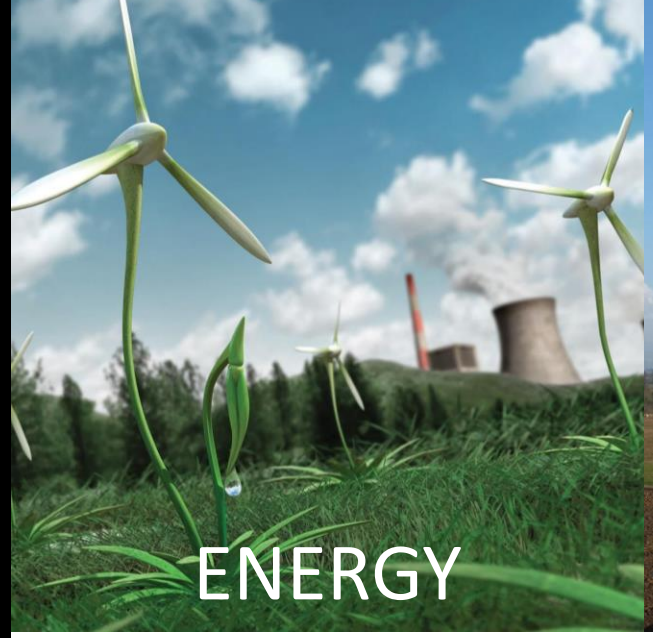
This talk introduces you to the design process of bridges with a specific look at the Rion-Antirion bridge.

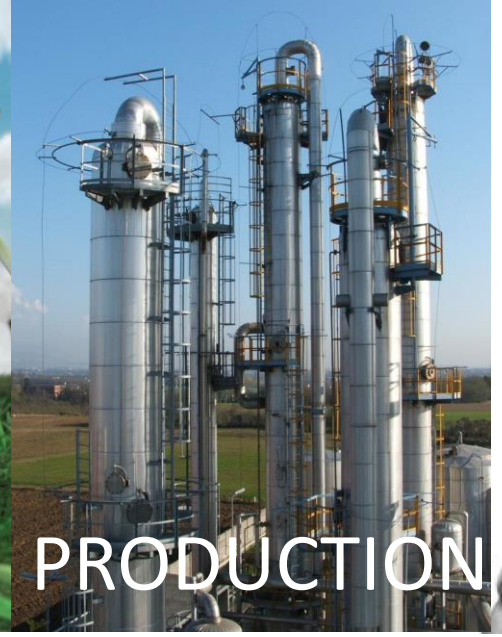
Define Constraints



Define Possible Solutions

Finished Product





What is Engineering?

What is Engineering?



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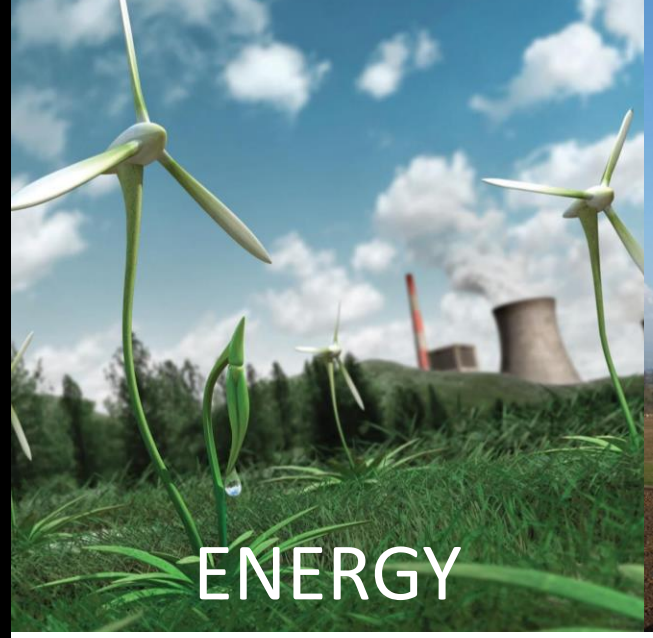
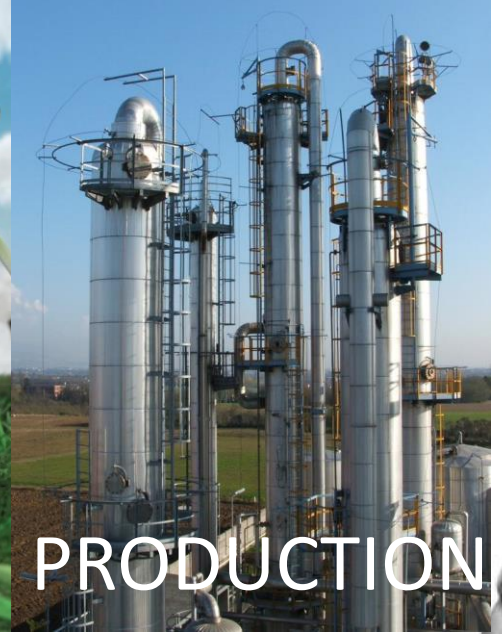
What is Engineering?



What is Engineering?

This sentence headline makes an assertion on the topic in no more than two lines (Calibri Bold, 28 pt font).

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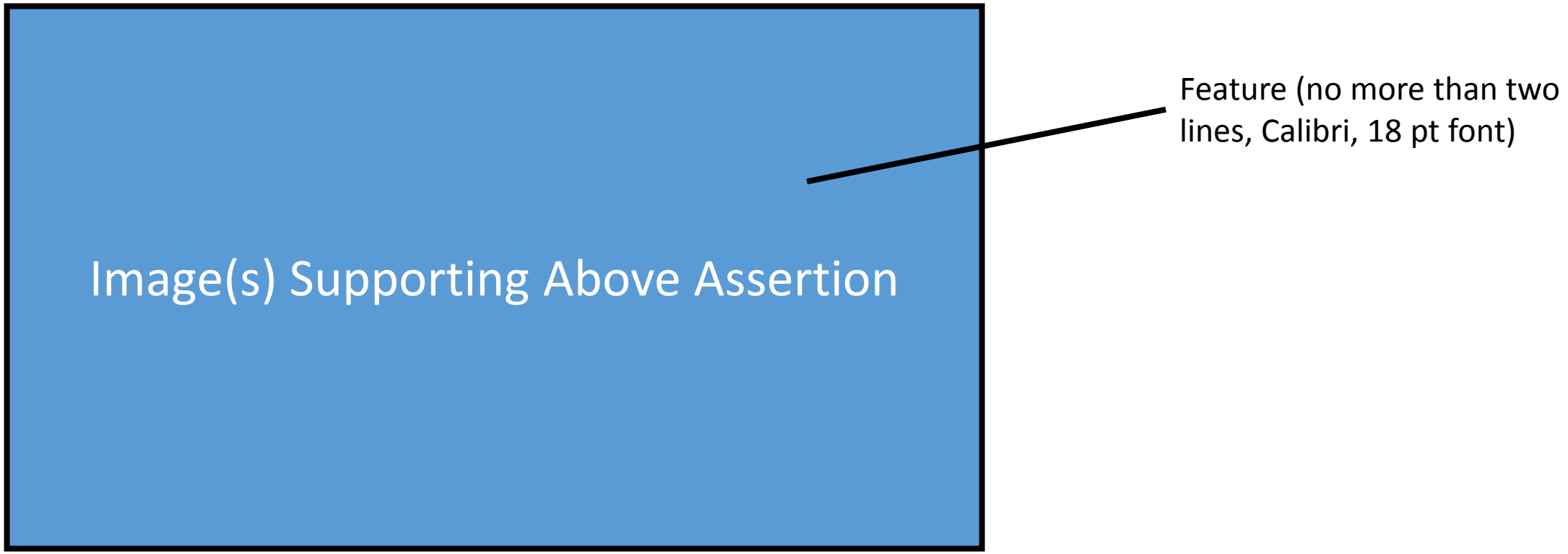
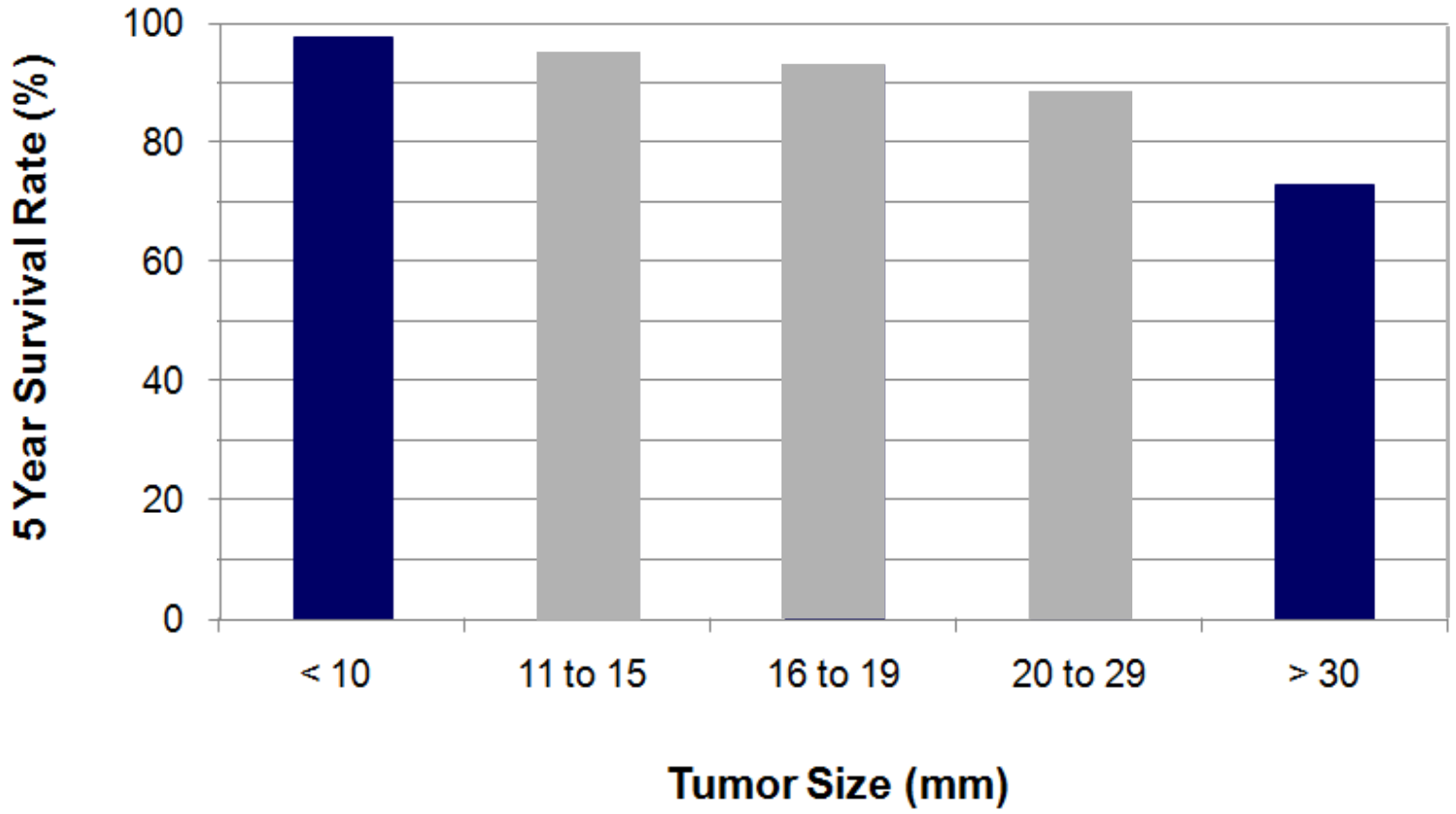


This sentence headline makes an assertion on the topic in no more than two lines (Calibri Bold, 28 pt font).

Image(s) Supporting Above Assertion

Environmental engineers can use genetically modified algae to remove pollutants.

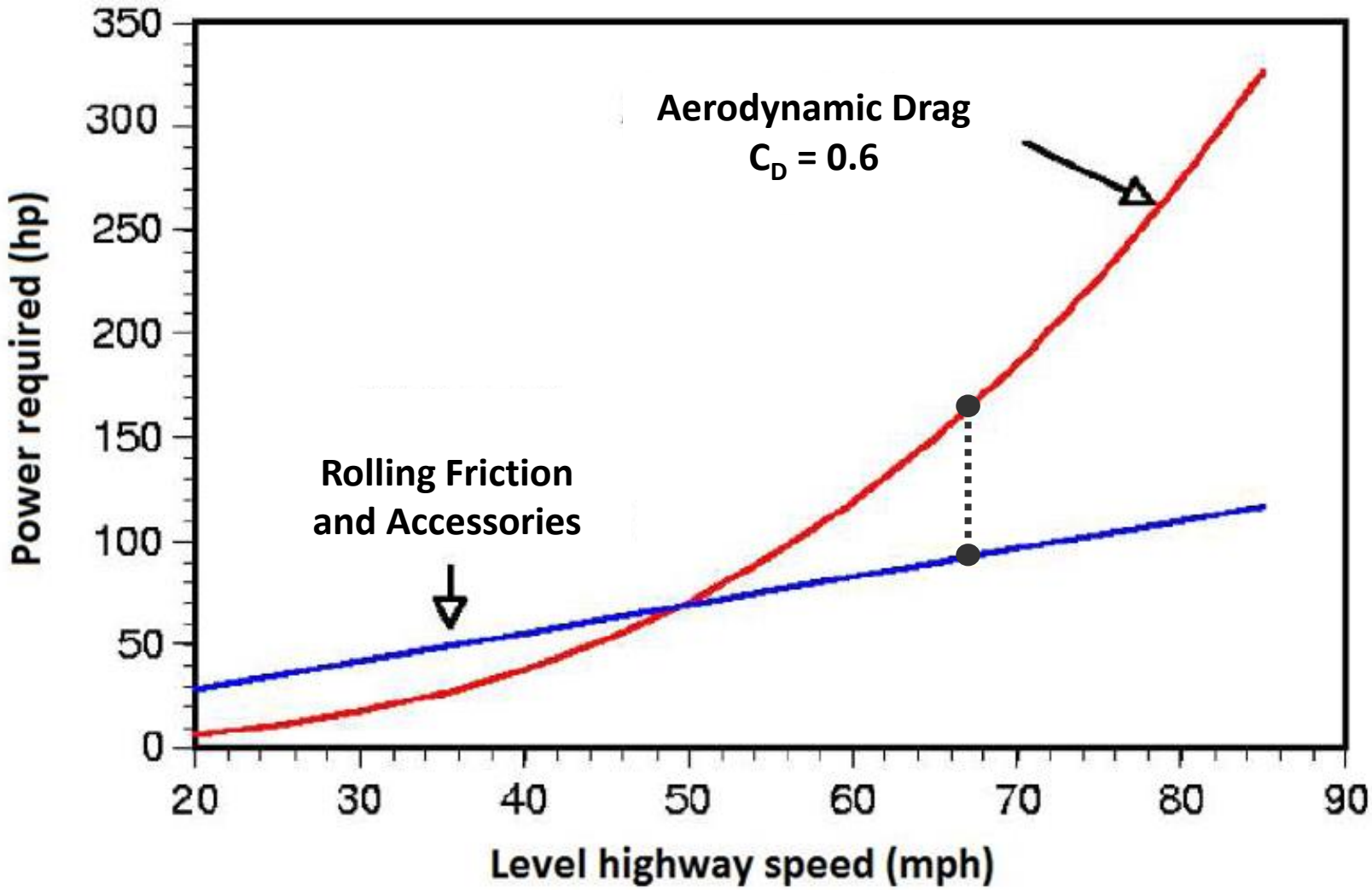
Early detection methods can identify small tumors and therefore improve survival rates of patients



[Lai et al., 2007]

PENNSTATE

At typical highway speeds, overcoming drag requires about two-thirds of a truck engine's output



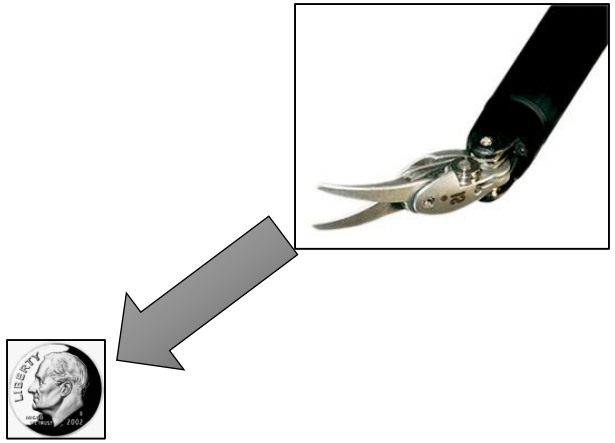
[McCallen, 2004]

PENNSTATE
1855

The anatomy of the “da Vinci” system is very innovative.

Intuitive 3-D camera

3 Specialized robotic arms



An anemometer can measure both wind speed and pressure.

Advanced

Slide Design?!

Advanced

Slide Design?!

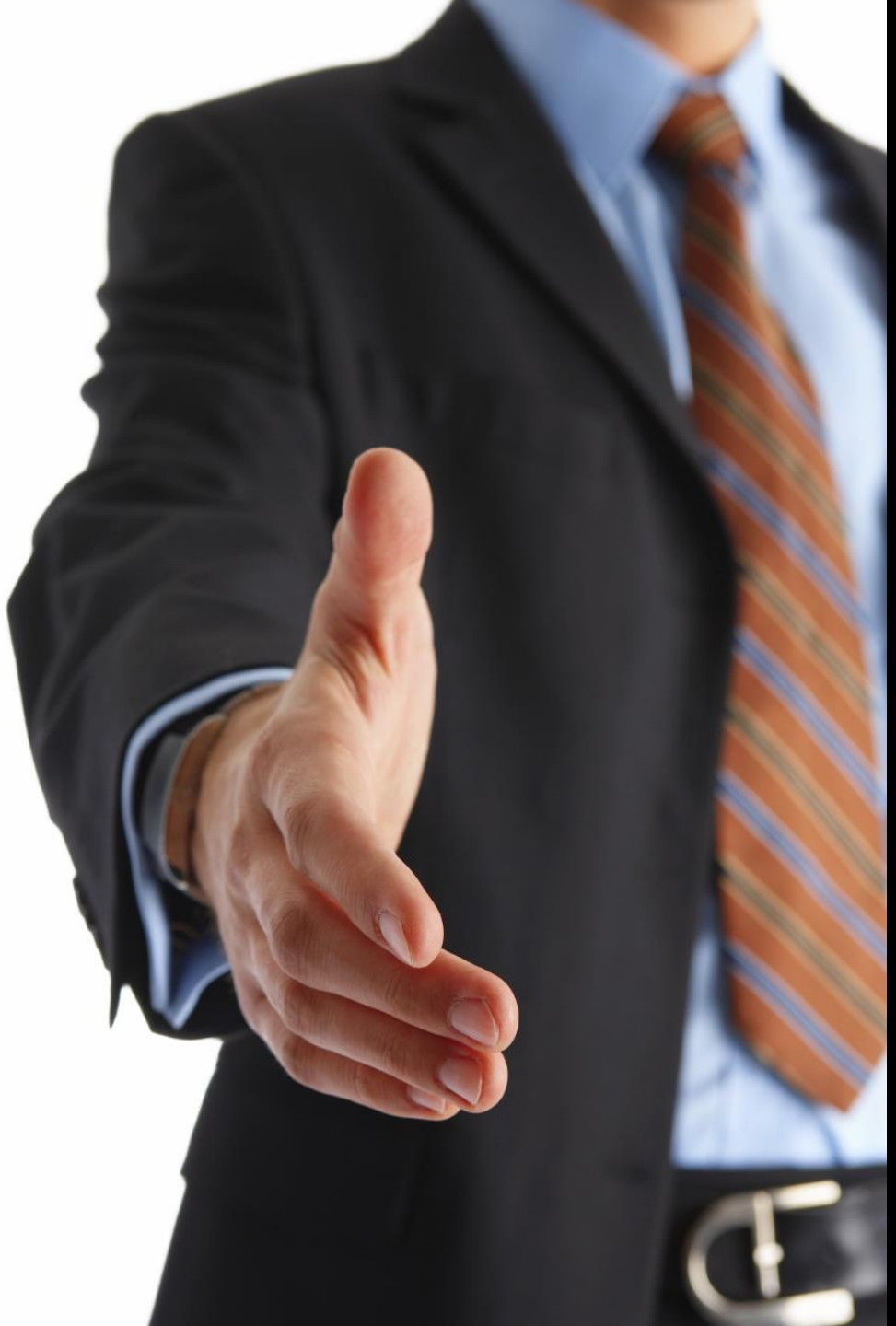
(gasp)

Highlight the important words.


Chemical Engineering
is a challenge

Writing an Effective

Résumé



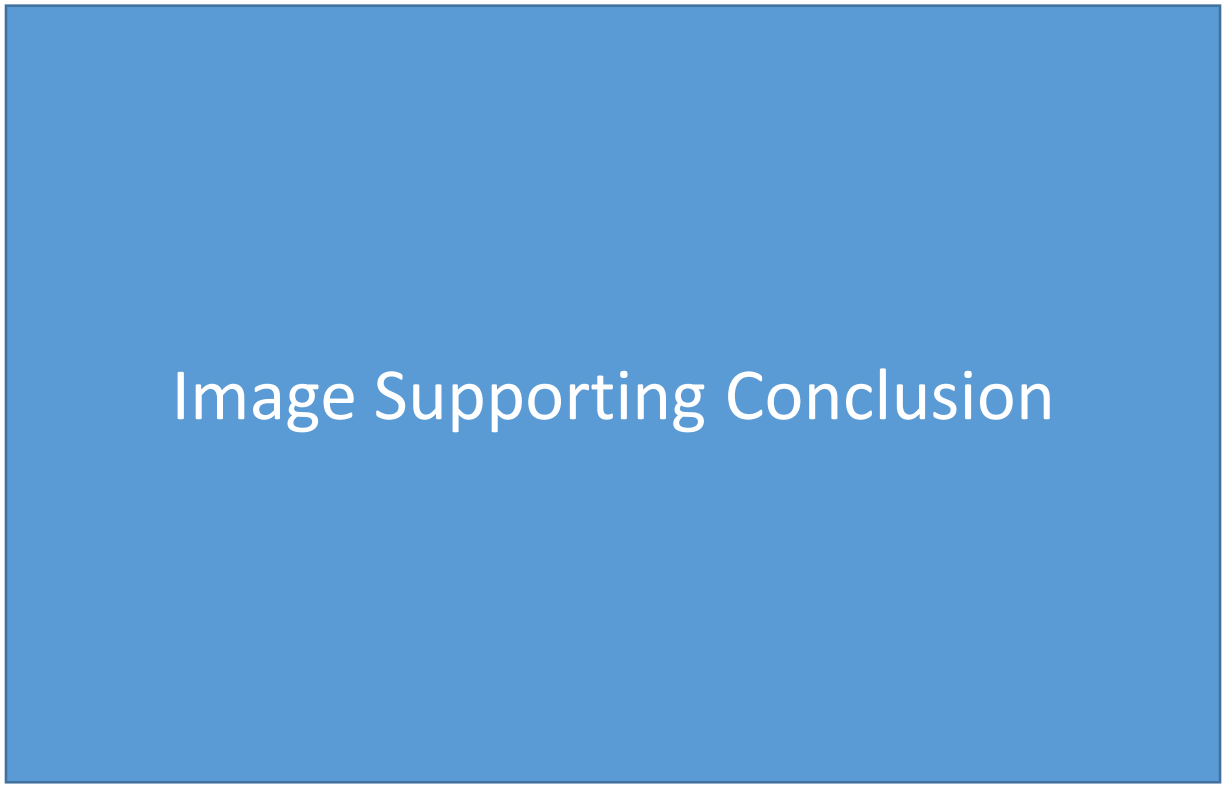
UCONN

Engineering
Ambassadors


Arable land in organic production
Europe 66%
N. America 23%
L. America 7%
Asia 2%
Oceania 1%
Africa 1%


Eat only
until 80% full.

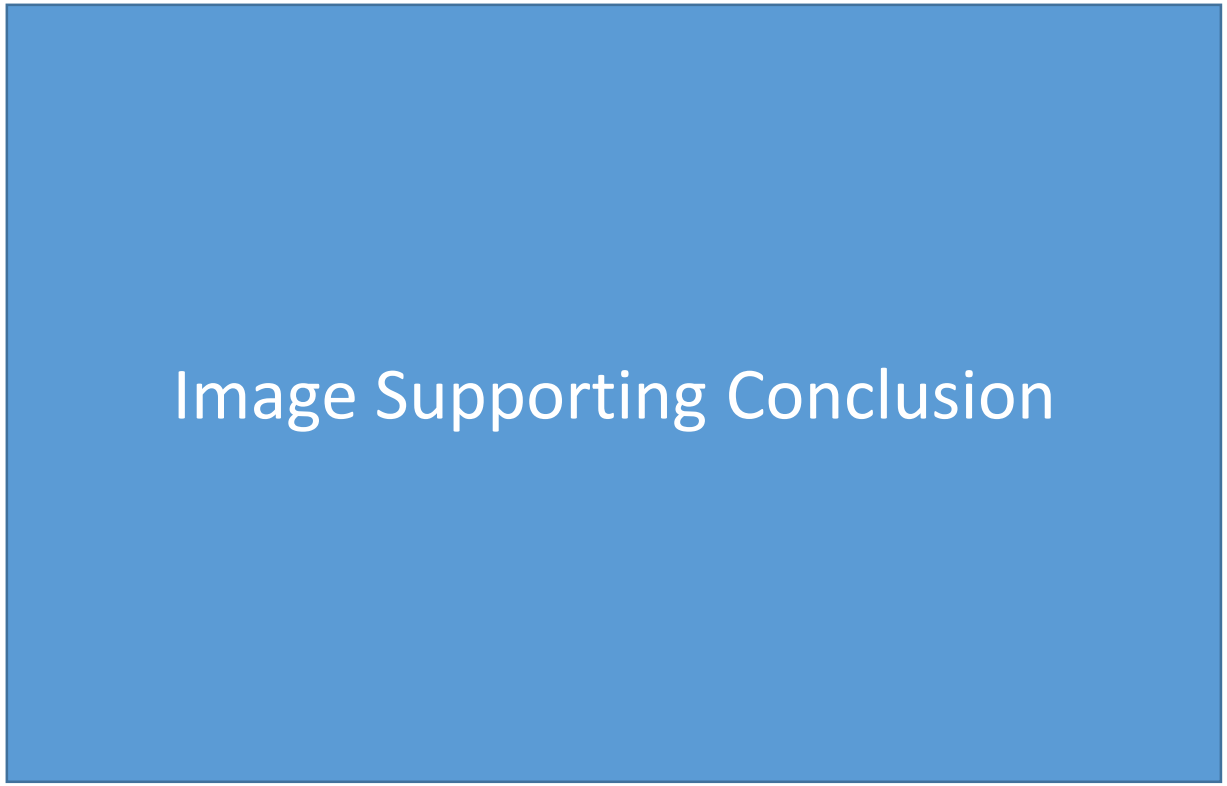
In summary, this sentence headline states the most important assertion of the presentation… (Calibri Bold, 28 pt font)



Questions?

In summary, this sentence headline states the most important assertion of the presentation… (Calibri Bold, 28 pt font)

Supporting point (no more than two lines)



Questions?

In summary, this sentence headline states the most important assertion of the presentation… (Calibri Bold, 28 pt font)

Image Supporting Conclusion

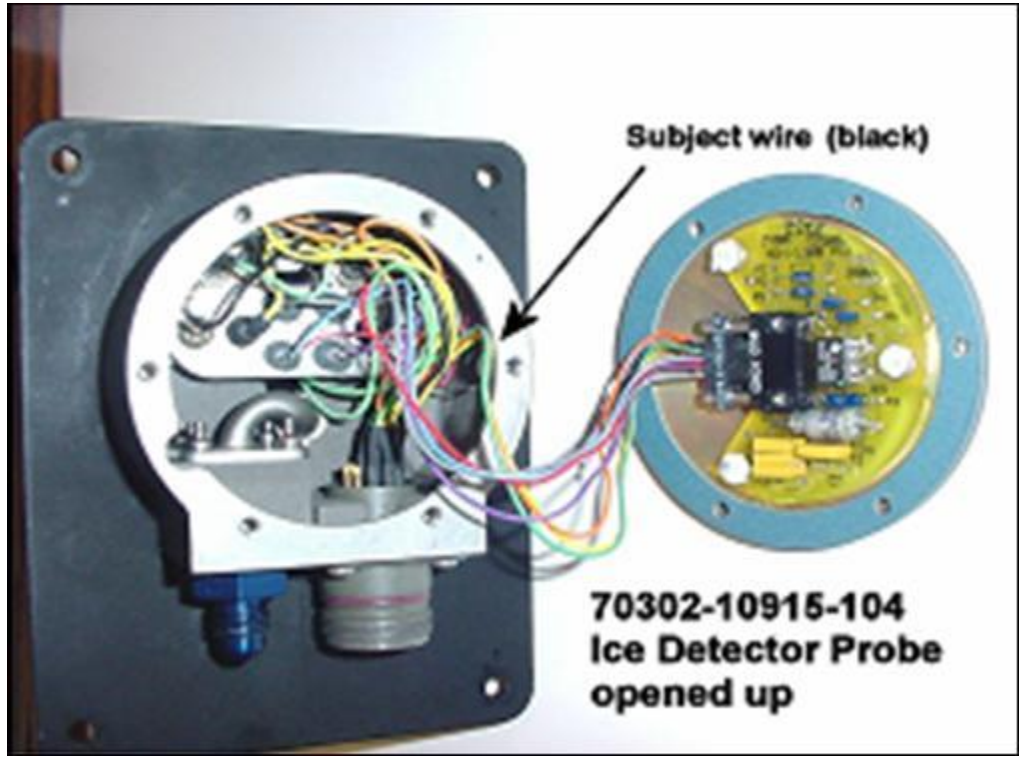
Questions?

In summary, the detector failed because of a short-circuit created by the abrasion of wire insulation

Wires not harnessed to prevent contact with housing

⬇

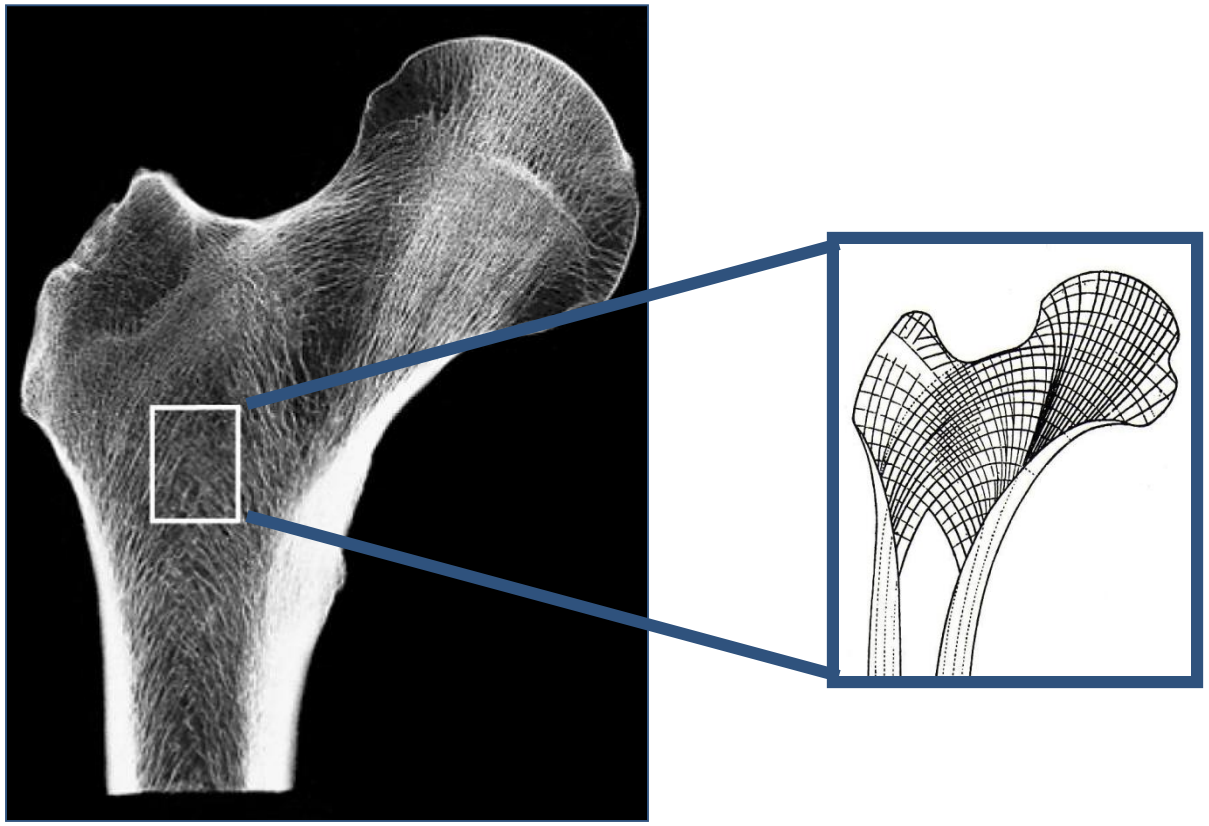
Short circuit to ground created where wire contacted housing



Questions?

Sikorsky
A United Technologies Company

In summary, materials used to reconstruct and repair bones must have similar characteristics as healthy bone

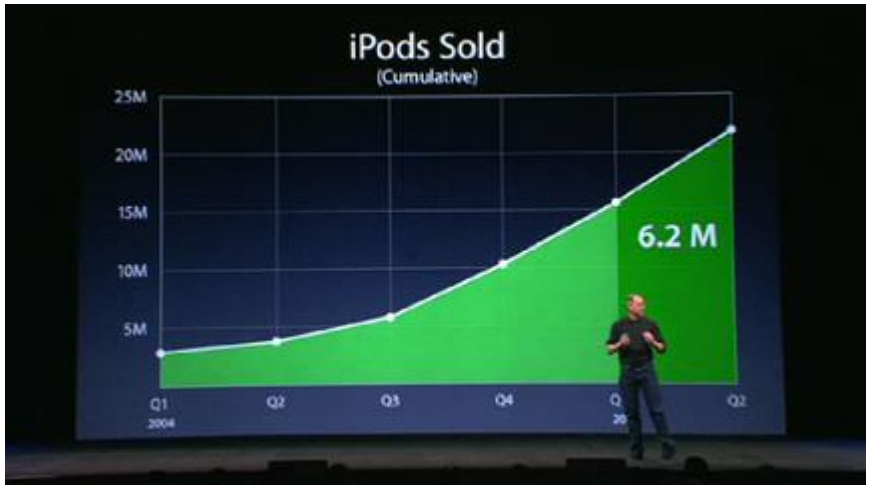


Questions?

In summary, biomimicry bridges human needs with engineering applications by using designs found in nature

Questions?

In summary, assertion evidence slide design allows the audience to retain the message better than traditional slide design.



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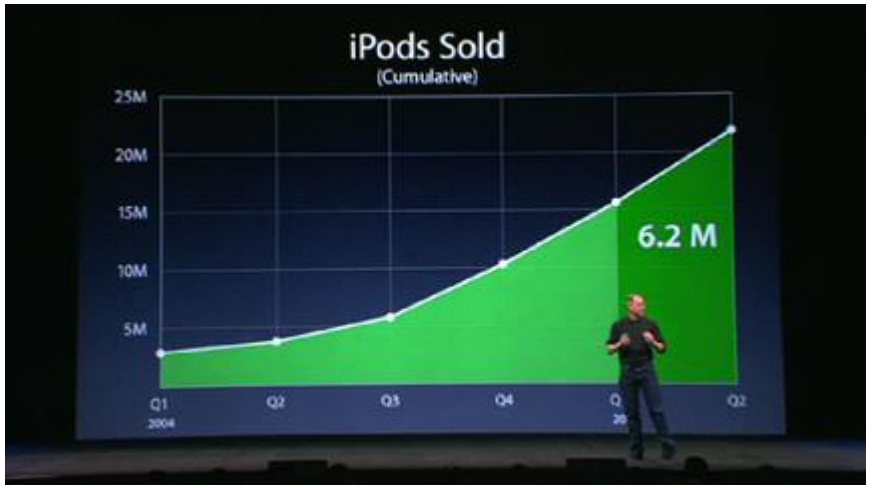
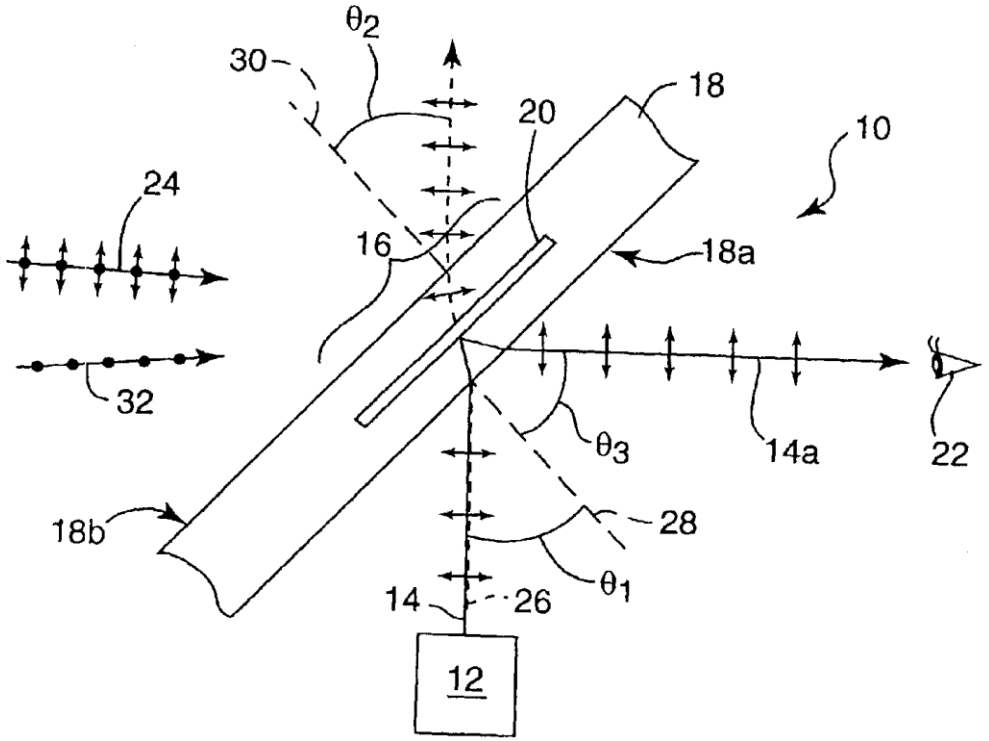


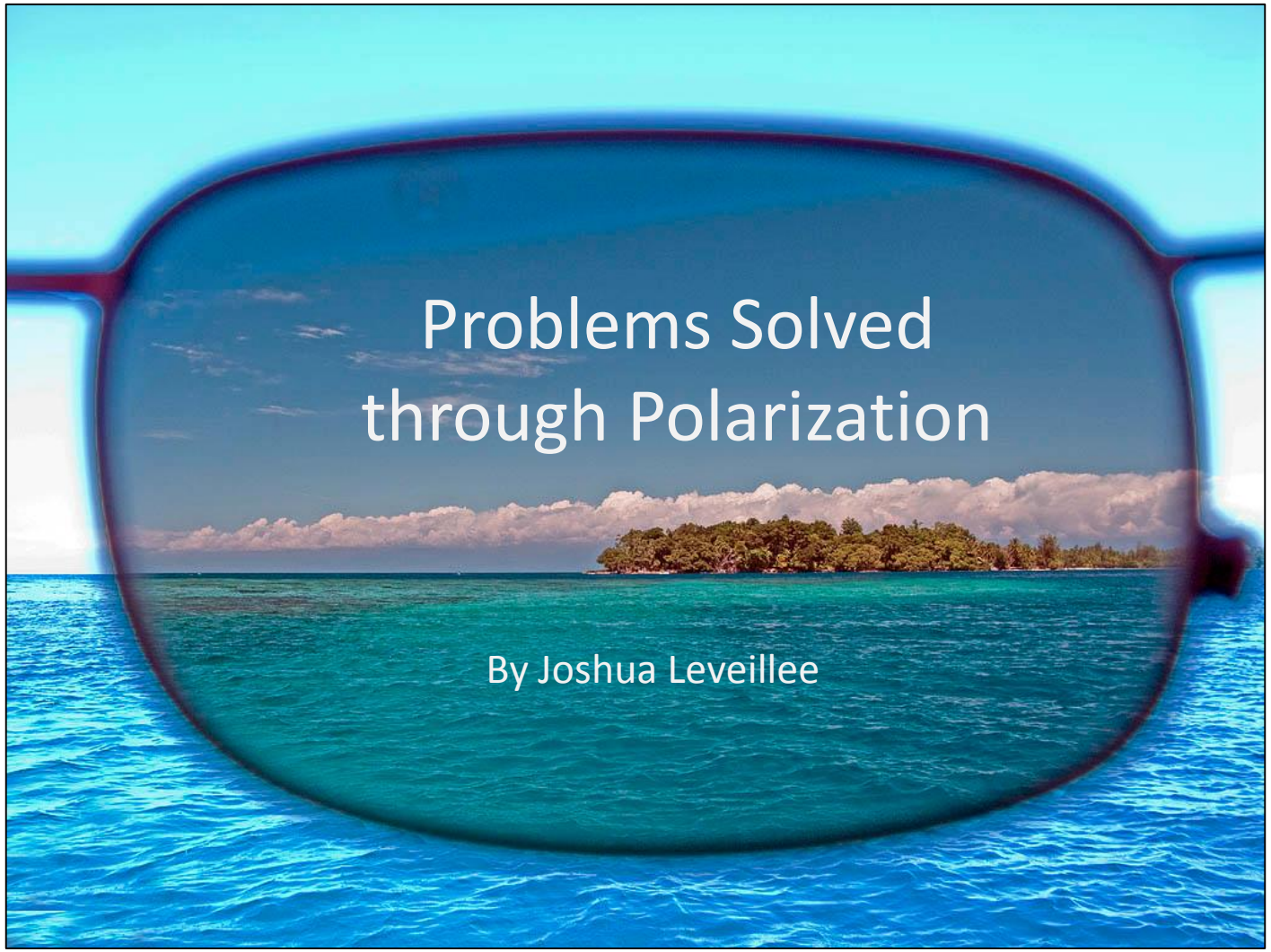

Convey
Your
Message
So That We Can
Understand and Relate

Presenting an engineering concept to an audience with a dissimilar background can be a daunting task.



"I'm so confused…."

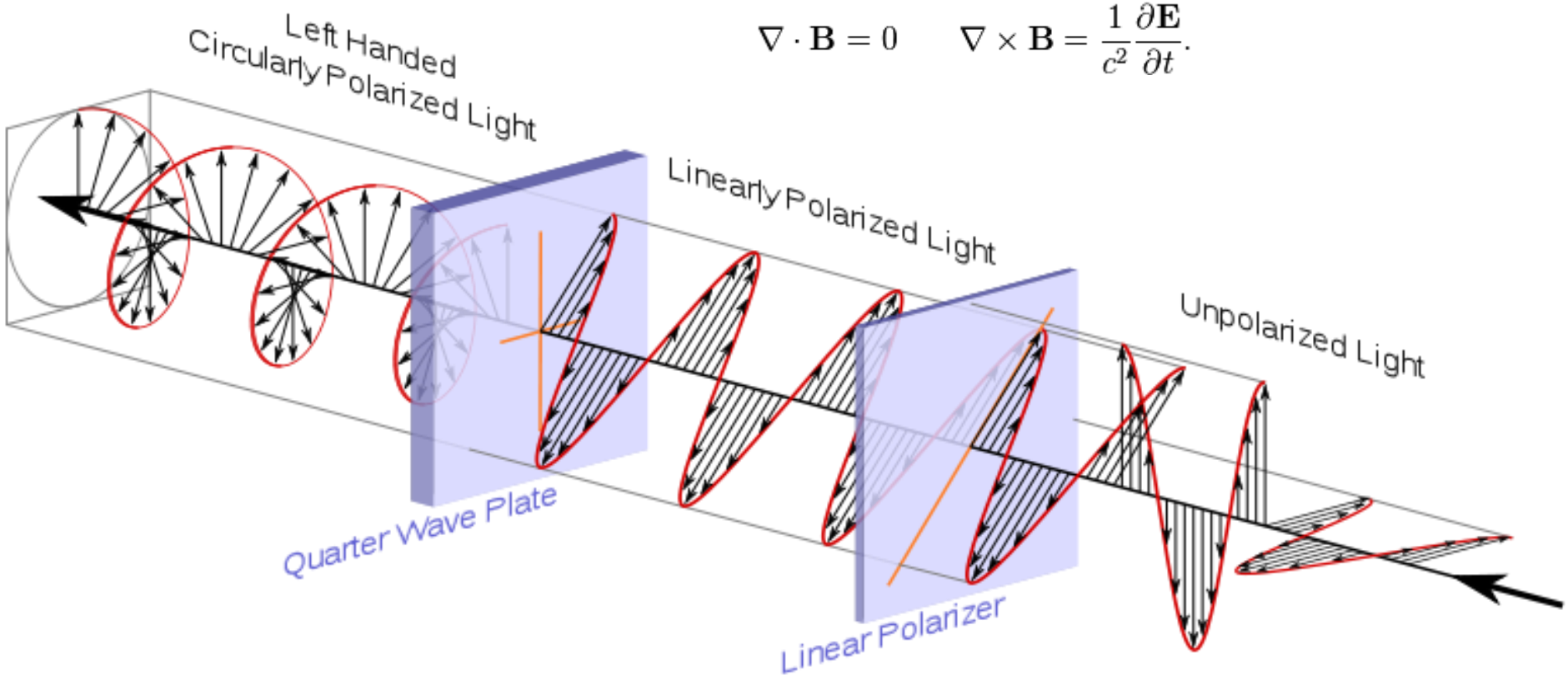
Task one is always to make sure your audience understands what you are trying to say.



Attempt One: Light polarization occurs when the electric field vectors of light are aligned on a single axis.

$$\nabla \cdot \mathbf{E} = 0 \qquad \nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t},$$

$$\nabla \cdot \mathbf{B} = 0 \qquad \nabla \times \mathbf{B} = \frac{1}{c^2}\frac{\partial \mathbf{E}}{\partial t}.$$



$$c = \frac{1}{\sqrt{\mu_0 \varepsilon_0}} = 2.99792458 \times 10^8\,\mathrm{m\ s^{-1}}$$

Attempt One: Light polarization occurs when the electric field vectors of light are aligned on a single axis.

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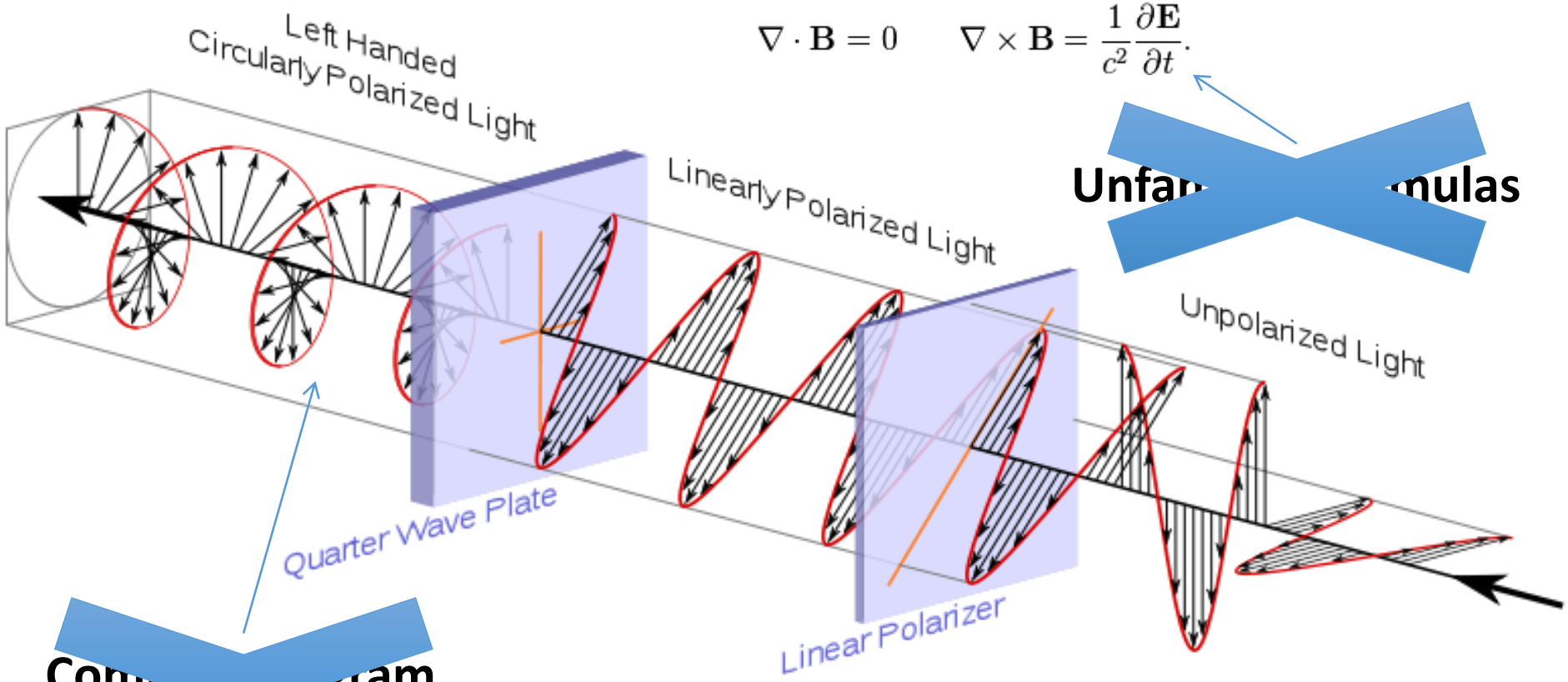
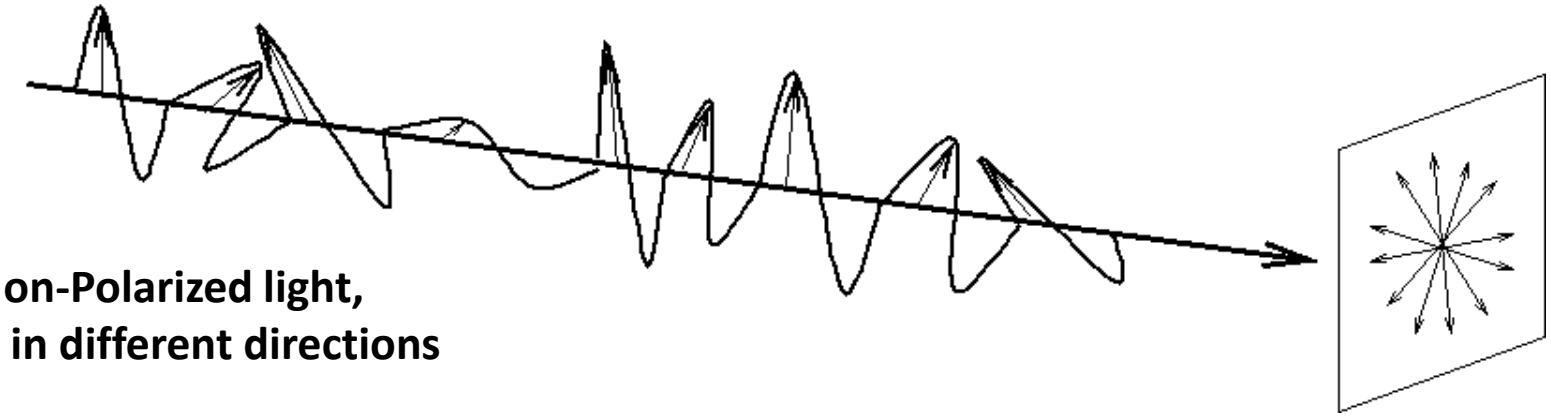


Unfa mulas

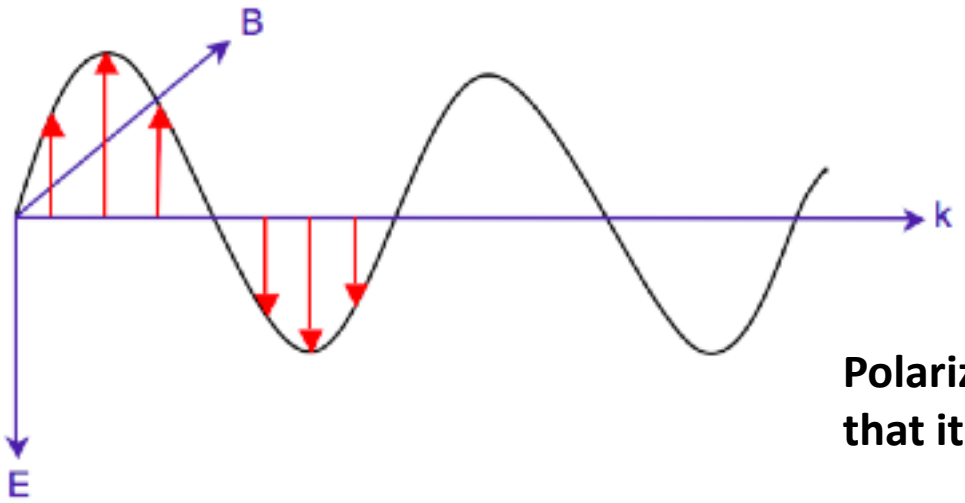
Com ram

$$c = \frac{1}{\sqrt{\mu_0 \varepsilon_0}} = 2.99792458 \times 10^8\,\mathrm{m\ s^{-1}}$$

Attempt Two: When light waves vibrate in the same direction, they are considered to be polarized.

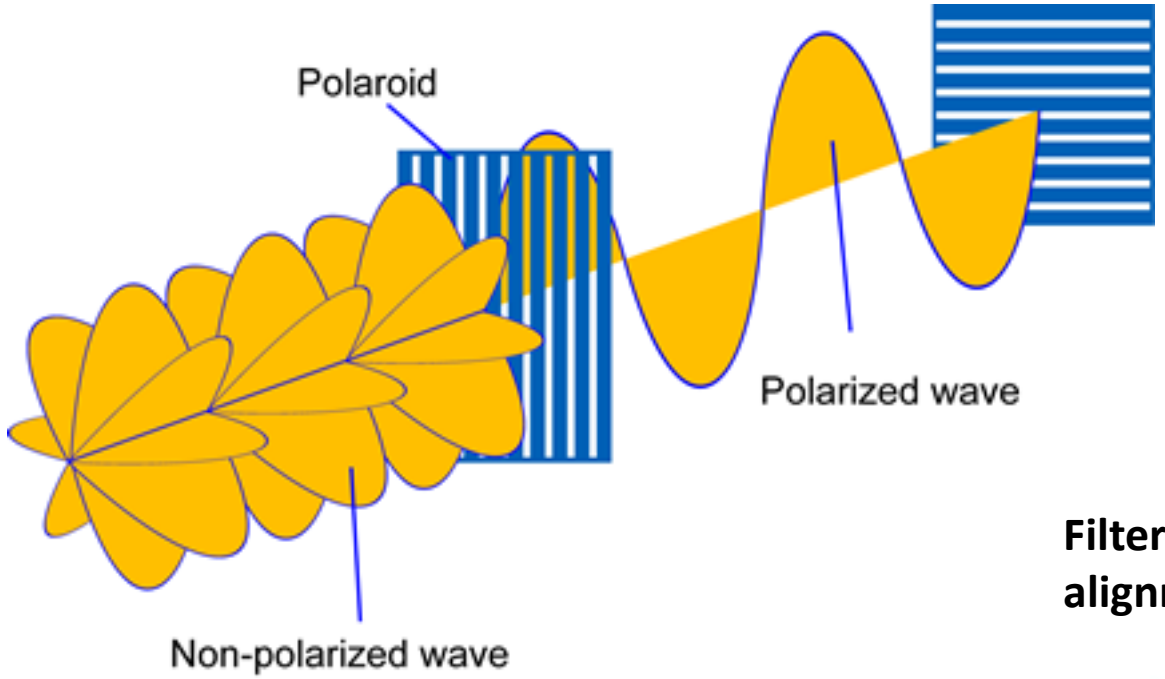


Normal, Non-Polarized light, oscillating in different directions



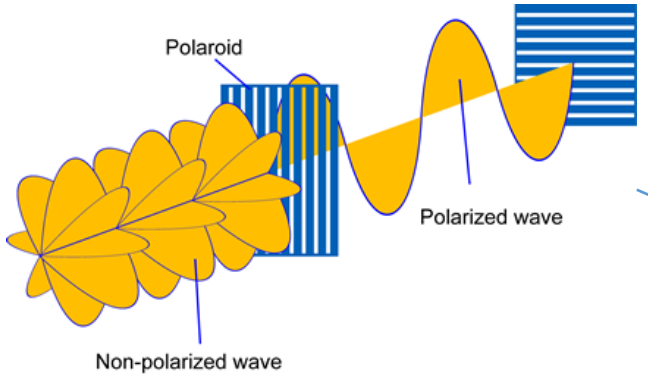
Polarized light is filtered so that it oscillates in one direction

Attempt Two: We can pick a direction for the light to oscillate by using filters.

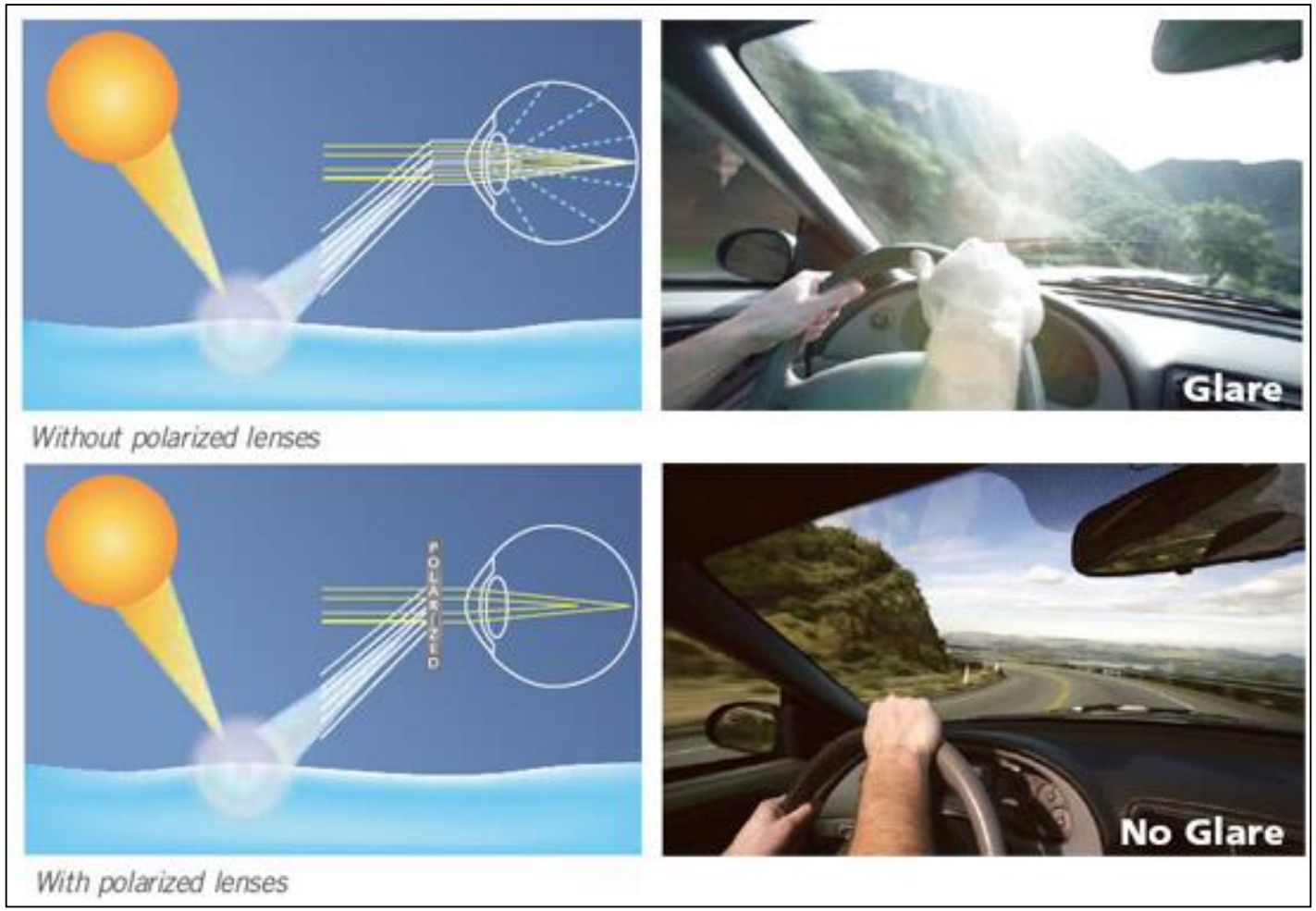


Filters can block certain alignments of light

Task two is to relate the topic to you target audience and make them care about the relatible implications.



Polarized glasses block glare light, which has a horizontal polarization, by only transmitting vertical light.

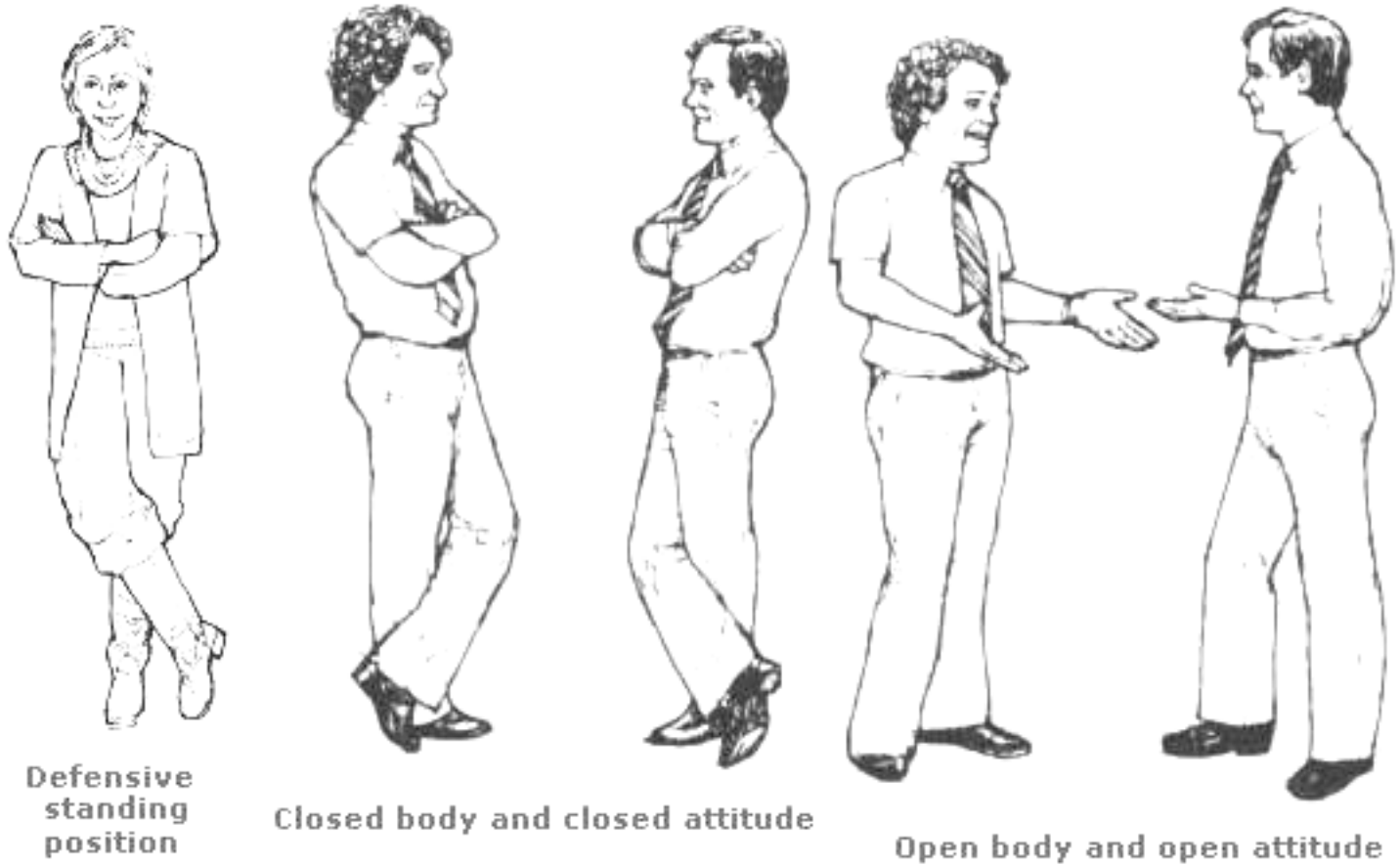


Polarized glasses block glare light, which has a horizontal polarization, by only transmitting vertical light.

Thus, my target audience will have an understanding of light polarization and how it affects their lives.

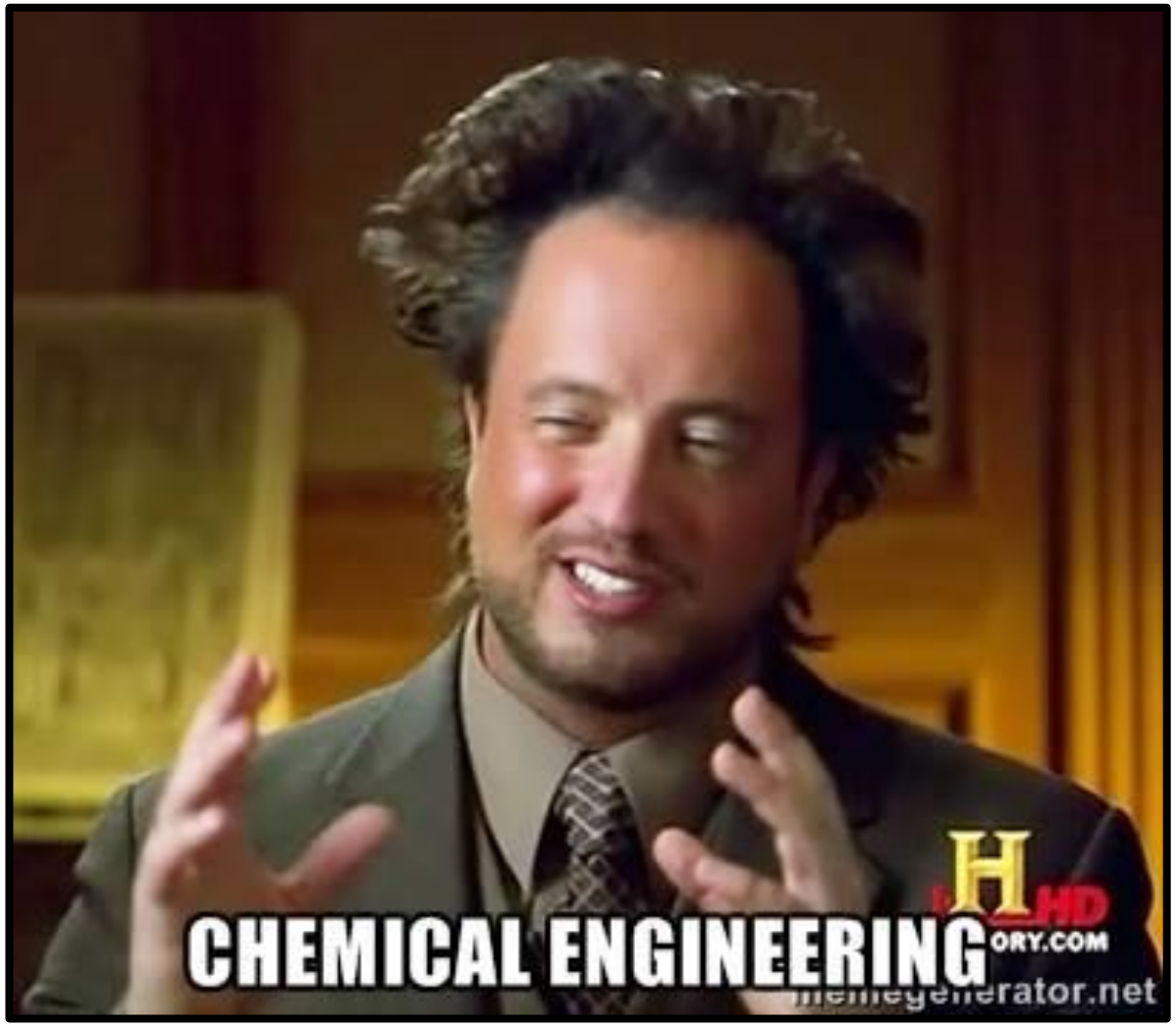
Why is body language important?

Body Language affects the behavior of the audience as well as their ability to believe the content that you present.



Standing with good and open posture communicates confidence and a positive attitude.

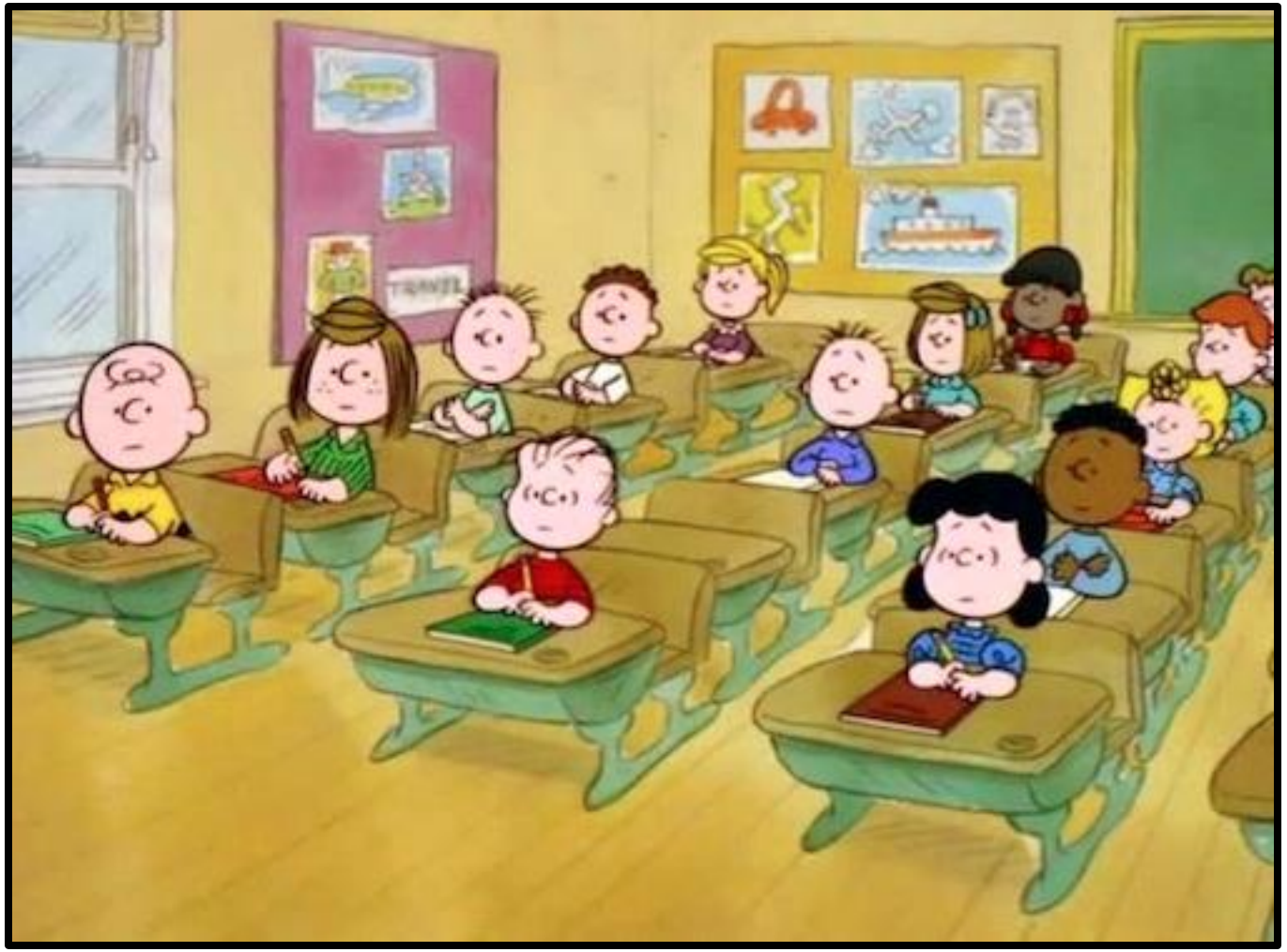
When used appropriately hand gestures can give energy to the presentation.



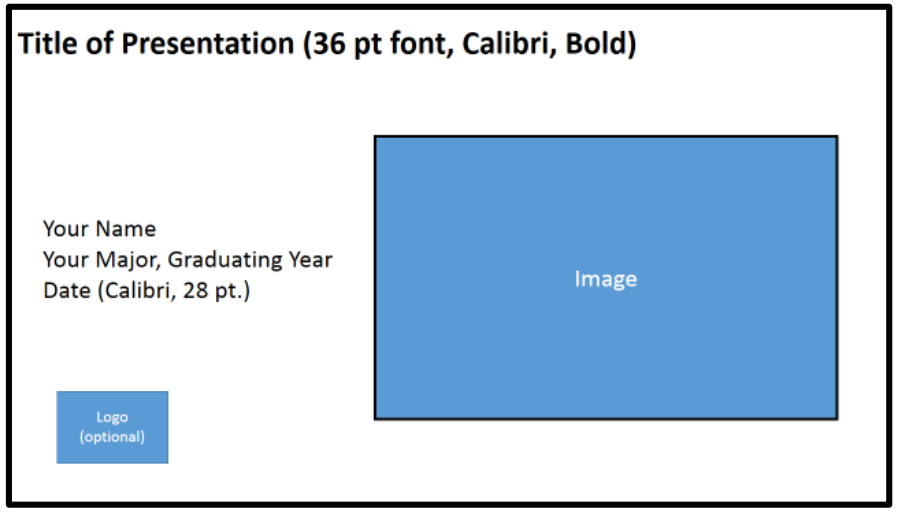
When used appropriately hand gestures can give energy to the presentation.

Eye contact and movement can engage the attention of the audience.

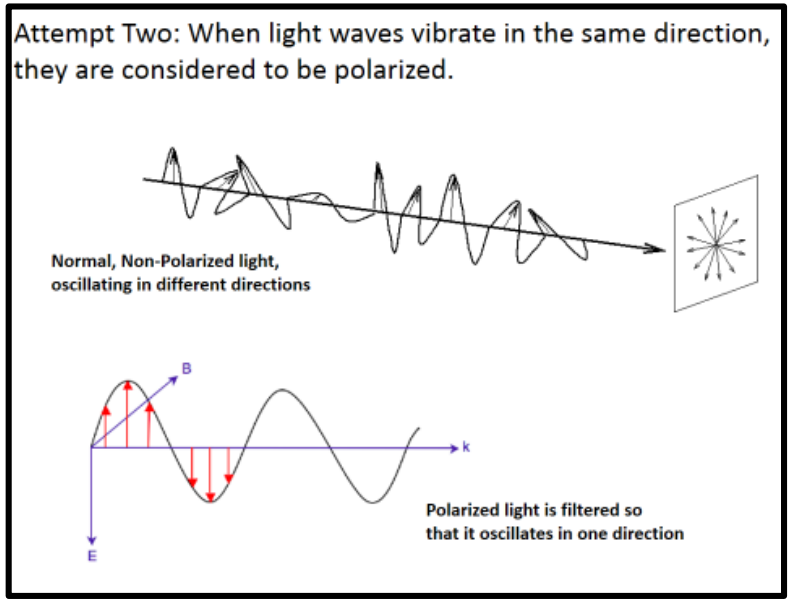
Speaking clearly and at a good pace is key to getting your message across!



In conclusion, there are three aspects to delivering an effective presentation: design, content, and delivery.



Design



Content

Delivery

Your Challenge:


Build
your own

Here are some additional resources for slide design (and a funny YouTube video):

1. http://writing.engr.psu.edu/slides.html
2. http://www.youtube.com/watch?v=KbSPPFYxx3o
3. http://www.presentationzen.com/
4. Melissa Marshall's Talk:
   http://www.ted.com/talks/melissa_marshall_talk_nerdy_to_me.html
5. Great Delivery, Passion:
   http://www.ted.com/talks/benjamin_zander_on_music_and_passion.html
6. Any Senior EA Members!