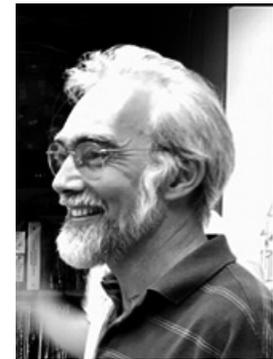


Presentation 101: Some keys to a quality talk

J. Paul Robinson

SVM Professor of Cytomics

Department of Basic Medical Sciences
& Weldon School of Biomedical Engineering
Purdue University



A set of suggestions and examples for creating good quality presentations.
What to do and what not to do in your seminar!!

This presentation is available for download from
<http://www.cyto.purdue.edu/education>

Presented each year since 2000

Goals of this Presentation

- To demonstrate good principles for public presentations
- To show how use slides effectively
- To demonstrate good and bad slides, distracting habits, some suggestions to assist your presentation
- To provide a baseline for a good presentation
- Some tips on better communication

The Three Essential Features of a Good Presentation

1. Tell people what you are going to tell them → Introduction & outline
2. Tell them the material → Your core materials in necessary detail
3. Tell them what you told them → Summarize your findings and close your presentation

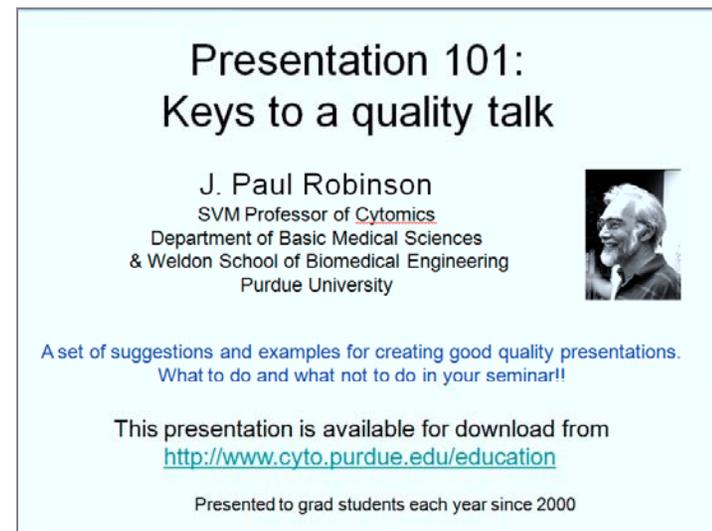
Very basic rules of engagement

- 1. Be well prepared
- 2. Speak clearly
- 3. Keep to time
- 4. Be aware of your audience

Opening your presentation

1. You should be early (10 min) for your presentation.
2. You should have checked in with the person who will chair the session
3. You should have already checked the projector and computer well before your talk
4. You should be ready to begin when invited
5. Your first slide should be on the screen before you begin
6. It should have your presentation title on it and information about you

(Example opening slide from this presentation)



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Have the projector and computer set up with the opening slide well before the presentation is due to start

12:55 PM

Your Opening Statement

- **If you are an Invited Speaker:**
 - *“Thank you very much for that generous introduction. I would like to thank the organizers for inviting me to give this presentation. It is an honor to be here at Purdue. Today I would like to present some ideas on the invention of the wheel....”*
- **If you are a Seminar Speaker (more informal):**
 - *“Thank you very much Professor X. I am very glad to be able to give this seminar. Today I would like to present some ideas on the invention of the wheel.”*

Your opening statement should be strong, and well prepared. It should be short and it can also be an expression of thanks to your host if appropriate.

Your Closing Statement

- Do**
- “In my last slide I would like to acknowledge the participation of my colleagues Jim, Jane, Alphonso, and Dr. Jones. I would also like to acknowledge the support of the National Science Foundation for funding this study.” (*pause here very briefly*) ... “Thank you very much for your attention.” (**Don’t say anything else!!!!**)

Don’t

- Don’t just stop!
- Don’t say “*that’s it*” “*that’s the end*”: “*I’m finished*”
- NEVER offer to answer questions if there is a chairperson - it is the role of the chairperson, not you, to ask for questions!!!! (**Don’t invite questions - it’s not your job – you might have gone 5 or 10 minutes over and you think you should answer questions?**)

So: Make the audience feel comfortable about the end of your presentation by telling them when it is finished.

Key Material Items to consider

- Your personal habits
- Use of the laser pointer
- The slide background
- Use of color
- Use of animation tools
- Use of diagrams or flow charts
- Amount of material per slide
- Number of slides in the presentation
- Your first and last slides

Imaging, Flow Cytometry, and Functional Cytomics

**Applications of
current cell analysis techniques**

J. Paul Robinson, Ph.D., & Bartek Rajwa, Ph.D.

Purdue University Cytometry Laboratories

So: Example Opening Slide – Has complex background
– OK for one slide, but don't use it for all the rest!

Imaging, Flow Cytometry, and Functional Cytomics:

Applications of
current cell analysis techniques

J. Paul Robinson, PhD, & Bartek Rajwa, Ph.D
Purdue University Cytometry Laboratories

So: Example Opening Slide – Has plain background – not so exciting, but very effective when the goal is to talk science!! Note that the copyright statement at the bottom in black is now virtually unreadable! (so don't use black on blue!!)

Your personal habits

- **Standing:** Face your audience, but if you are very nervous, look only at people in the middle or back rows
- **Pacing:** Sometimes pacing helps when you are nervous – it can also help to keep the audience’s attention – but it can also be distracting – if you pace, pace slowly and deliberately
- **Speech:** Speak slowly, clearly, & deliberately
 - don’t say “Ummm”...or “Ah....”....between every sentence
 - don’t say “You know....” when you pause
 - If English is not your native language, you must speak slowly or you may risk failure to communicate!!!
- **Fidgeting:** Don’t play with the toys (like keys) or put your hands in your pockets – hold the lectern if you have to
- **Humor:** Use very sparingly, it can be an ice-breaker but it is very hard to do – my suggestion is to avoid it

Using the pointer

- Use the pointer to add emphasis and assist the audience follow your ideas

- Do:**
- Use sparingly
 - Hold on only for a second at a time
 - Hold it steady
- Don't:**
- Hold the pointer on!! (you will flatten the batteries)
 - Spray the audience.....ouch!
 - Flash the pointer all over the slide

So In Emergency: If the pointer dies: don't panic. A good chairperson will observe and deal with it. If not, find a stick, pen, or some long object and use that to point to the screen. Don't let this put you off your presentation.

Pointer use reinforcement

- There are 4 main points:
 - The length of time you leave the pointer on
 - How steady your hand is
 - Are you “firing” at the audience?
 - Are you distracting your audience rather than focusing them?

Example: When you mention the first point – put the laser at line 1. Discuss this point, then move to the next point. Mostly pointers are useful when dealing with figures and images. It is unnecessary to point to each line of text, but for learners, it is a good way to keep yourself on track.

Pointer hints for nervous people

(that's most people actually!)



- Hold the lectern when you talk – it stops your hands doing funny things. When you become more confident, you can walk away from the lectern.
- Hold the laser pointer on the edge of the lectern when you point it – then your quivering fingers won't make the pointer bounce everywhere!!

Fonts

- Try to use a single, clear font across the entire presentation
- Make the text large enough that the audience can read it
- *Some fonts are really bad*
- *Some are worse*
- And some should be avoided at all costs

Don't even think of doing this!

Note: You might think that your science is a work of art, but the art is in the science not the art.

Using Backgrounds

- Backgrounds are fun, but they can be distracting
- Sometimes you cannot read the text
- Sometimes they are more interesting than the data
- They significantly increase the size of the file
- Sometimes they just look ridiculous
- It is a well known fact that the most important factor in reading text is**contrast**
- The best contrast is.....Black and **White**

So: Sometimes boring old black and white slides are easier to see and are more effective in communicating your message!!

Backgrounds

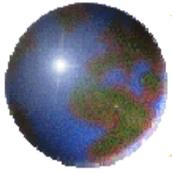
- Be careful when using backgrounds available from templates
- A more conservative approach is safer
- You want the audience to focus on your data, not your background
- If you must, use a simple color like blue
- Some examples follow in the next 5 slides – the last 2 are not acceptable

Lesson: Pretty backgrounds are fun but foolish! It might seem like a good idea at the time, but your audience is thinking ...”*Oh no, not another symphony of colors....*”

What Resources are Required?

- Start with educational objectives and goals
- Define needs based only on the educational objectives
- Initially identify minimal hardware requirements, beg or borrow if necessary
- Integrate staff into lab with scientific staff to increase participation

So: Very plain example slide. No frills.



What Resources are Required?

- Start with educational objectives and goals
- Define needs based only on the educational objectives
- Initially identify minimal hardware requirements, beg or borrow if necessary
- Integrate staff into lab with scientific staff to increase participation

So: Good example slide (logo and top bar work OK)
Colors are muted and tasteful

What Resources are Required?

- Start with educational objectives and goals
- Define needs based only on the educational objectives
- Initially identify minimal hardware requirements, beg or borrow if necessary
- Integrate staff into lab with scientific staff to increase participation

Good example slide –top and side bar

So: Good example slide (side/top bar work OK) Colors are fine, note slide number on left.

What Resources are Required?

- Start with educational objectives and goals
- Define needs based only on the educational objectives
- Initially identify minimal hardware requirements, beg or borrow if necessary
- Integrate staff into lab with scientific staff to increase participation

So: BAD example slide - nasty background – its very distracting and much more interesting than the text!!

What Resources are Required?



- Start with educational objectives and goals
- Define needs based only on the educational objectives
- Initially identify minimal hardware requirements, beg or borrow if necessary
- Integrate staff into lab with scientific staff to increase participation

So: VERY BAD example slide – drop the fireworks!

Use of Color

- Color shows **emphasis**....BUT..
- It should be used sparingly
- Certain colors cannot be used together

– For example:

– Red text cannot be used on blue backgrounds or vice versa

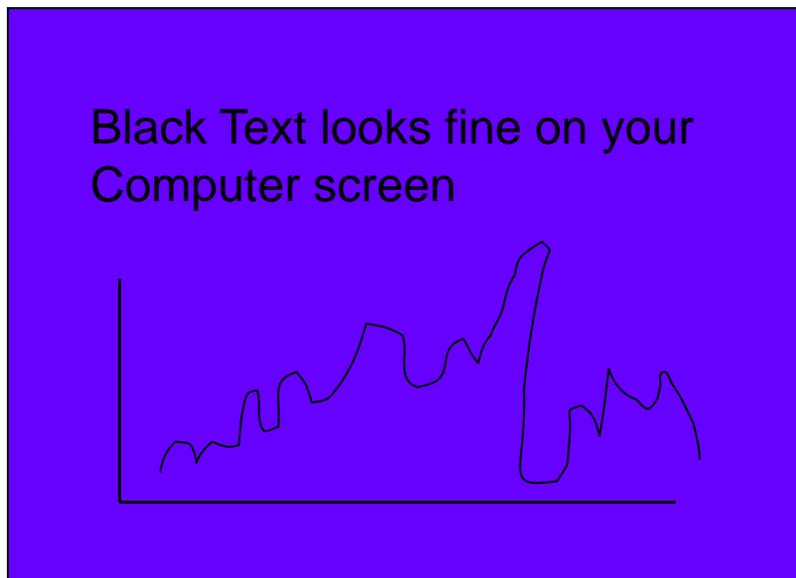
– Blue text cannot be used on red backgrounds or vice versa

- Colors that should virtually never be used are:
 - Purple, pink and bright green
- Yellow can be used on black but never on white background

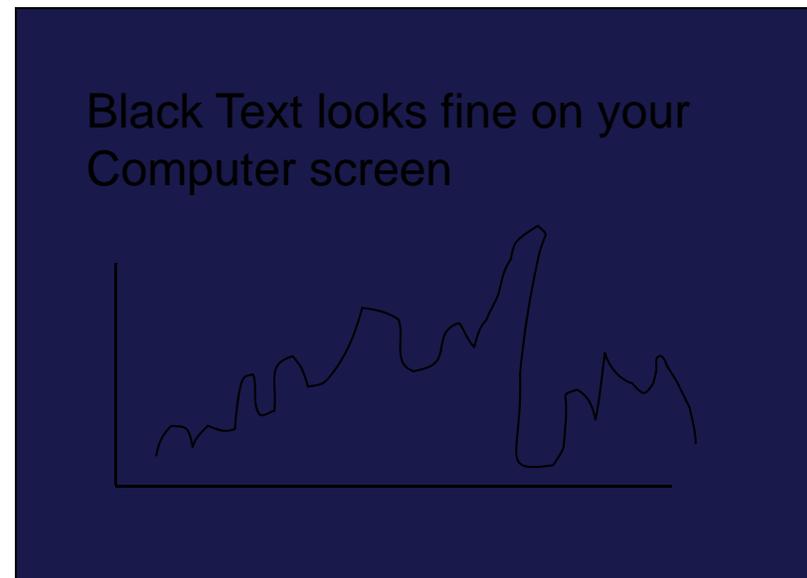
So: NEVER use red and blue together...it might look OK on your computer screen, but it's horrible for the audience!!

The difference between the computer screen and the projector screen

- Colors that look great on your computer screen may be HORRIBLE on the projector screen.
- For example BLUE background CANNOT have black text.



Your computer SCREEN looks like this....It's just OK.



But this is what happens when it is projected onto the screen....

So: NEVER use black text on a blue background...it might look OK on your computer screen, but it's unreadable on the projector screen – The rule is test out your presentation on a projector not just your laptop!!

Animation

- How much animation is right?
- Make sure you test it carefully!
- A small amount of animation can be good
- Too much is “ditzy” and often annoys your audience

So: “Ditzy” animations are really off-putting to the audience. Good animations, such as how a reaction takes place, are fine.

Advantages

Standard Assay

- Uses whole blood
- Cheaper than microdrop

Gel Microdrop

- Rare populations
- Short incubation
- Sort and recover live cells

This is a nasty slide....in every way!

So: EXAMPLE: bad color, way too much animation – it's just a bad slide. For the PDF version, you cant see all the animations...but they are just nasty...!

Advantages

Standard Assay

- Uses whole blood
- Cheaper than microdrop

Gel Microdrop

- Rare populations
- Short incubation
- Sort and recover live cells

So: OK – it might look boring, but this is a very basic slide and really does not need any enhancement. Audience is focusing on just the text.

Advantages

Standard Assay

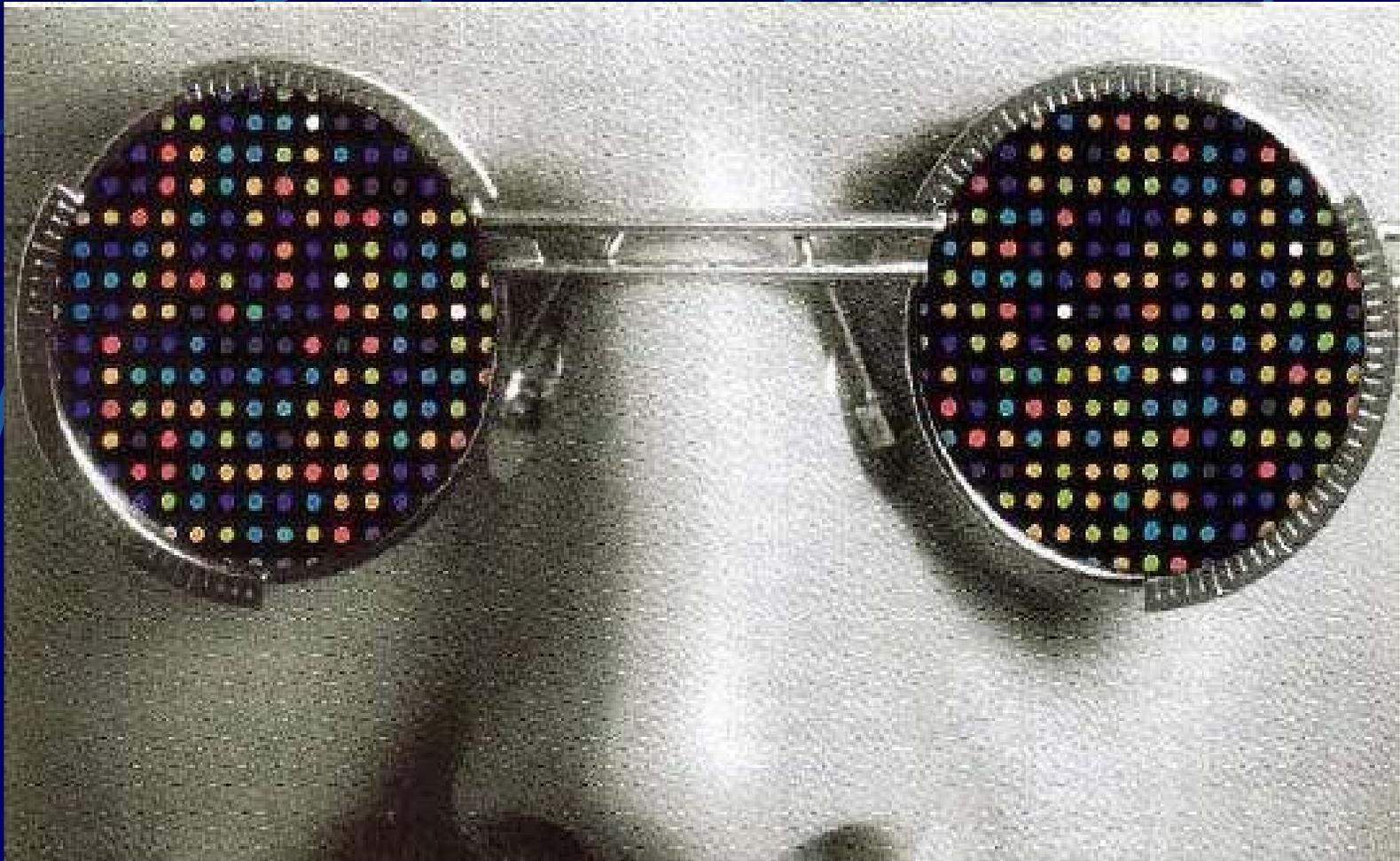
- Uses whole blood
- Cheaper than microdrop

Gel Microdrop

- Rare populations
- Short incubation
- Sort and recover live cells

So: If you want to make it a little more attractive...this works well.

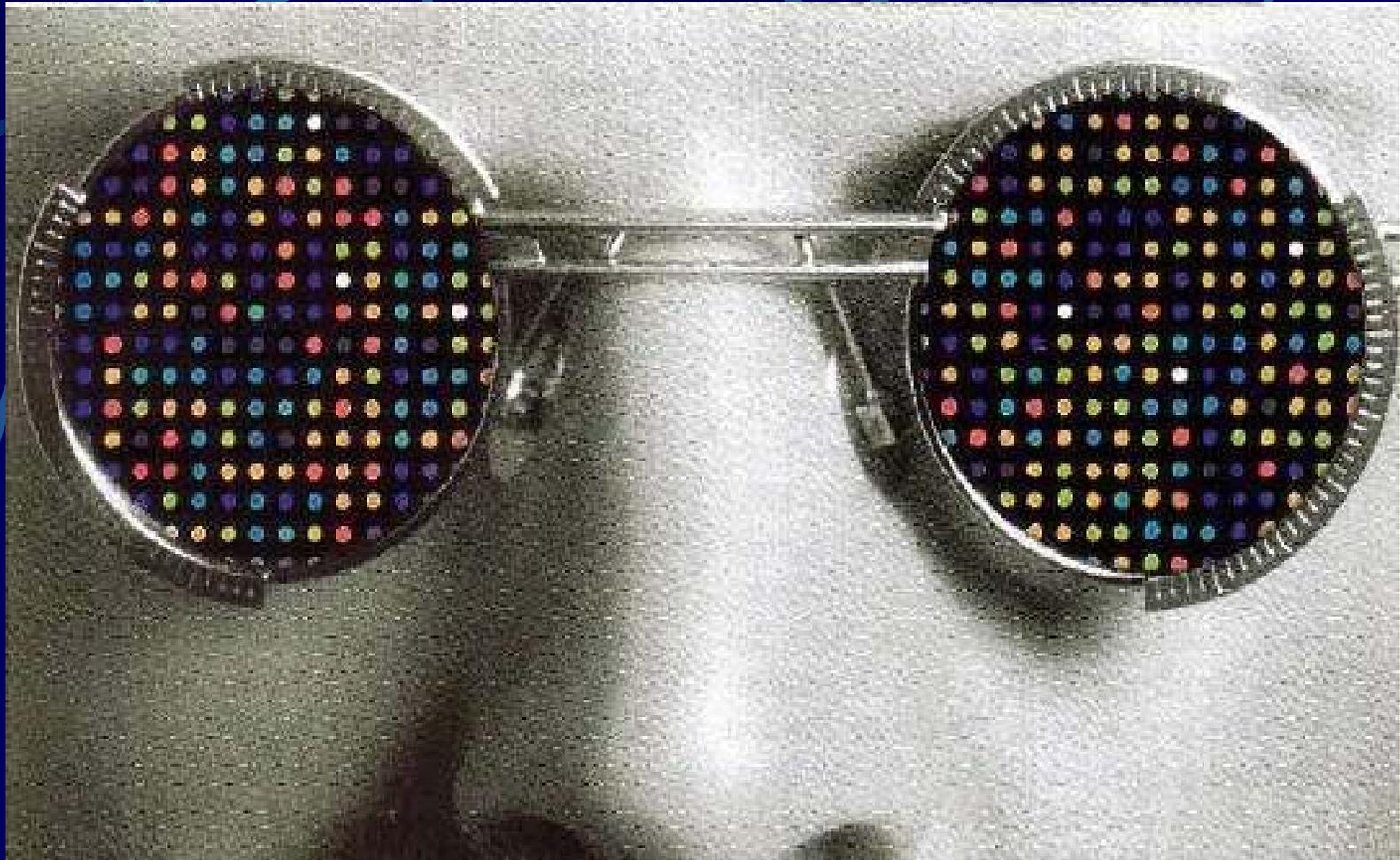
And for Imaging Technologies?



So: Example - simple animation – it works even though the background is a bit much

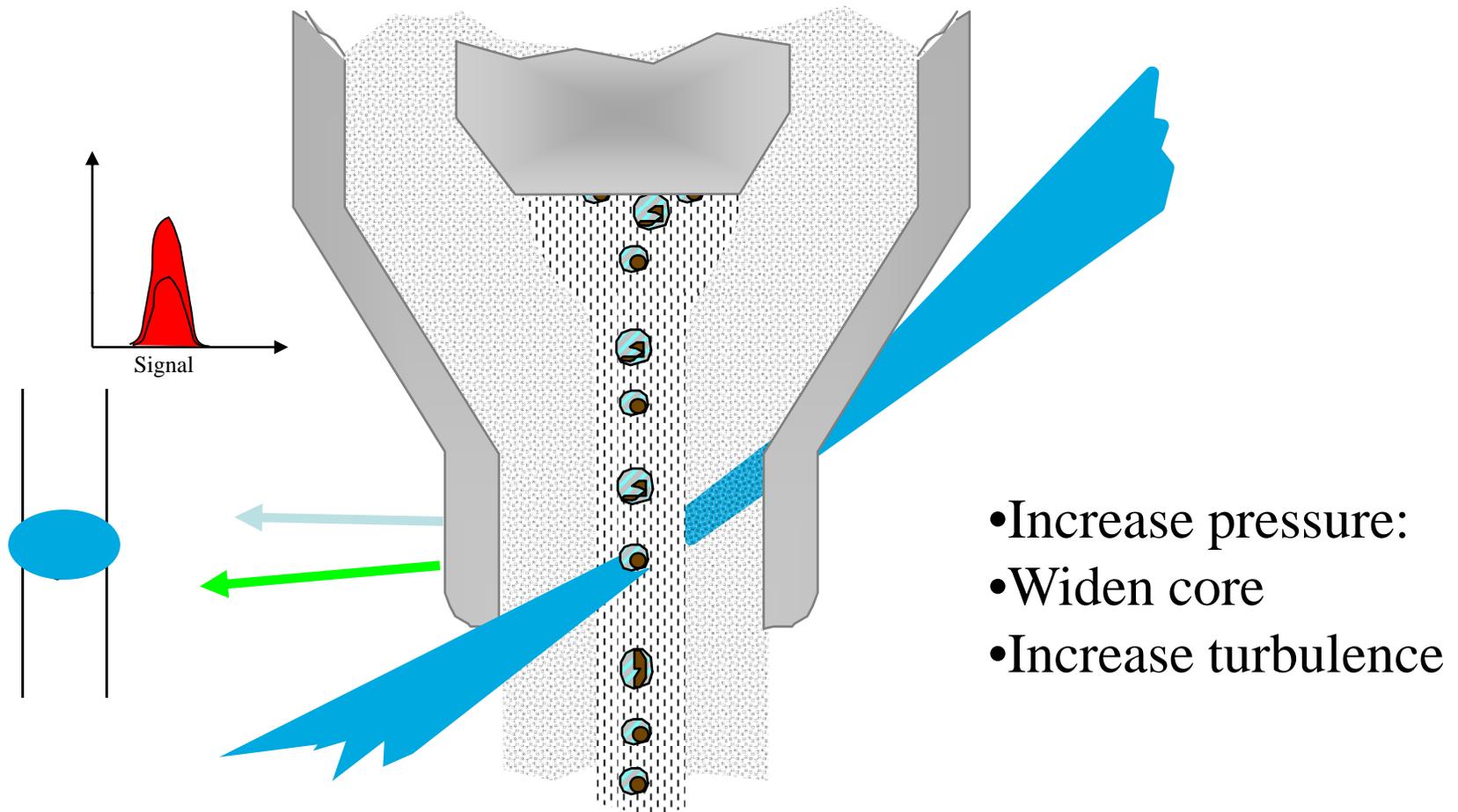


And for Imaging Technologies?



So: Example – gratuitous animation – plain annoying!!

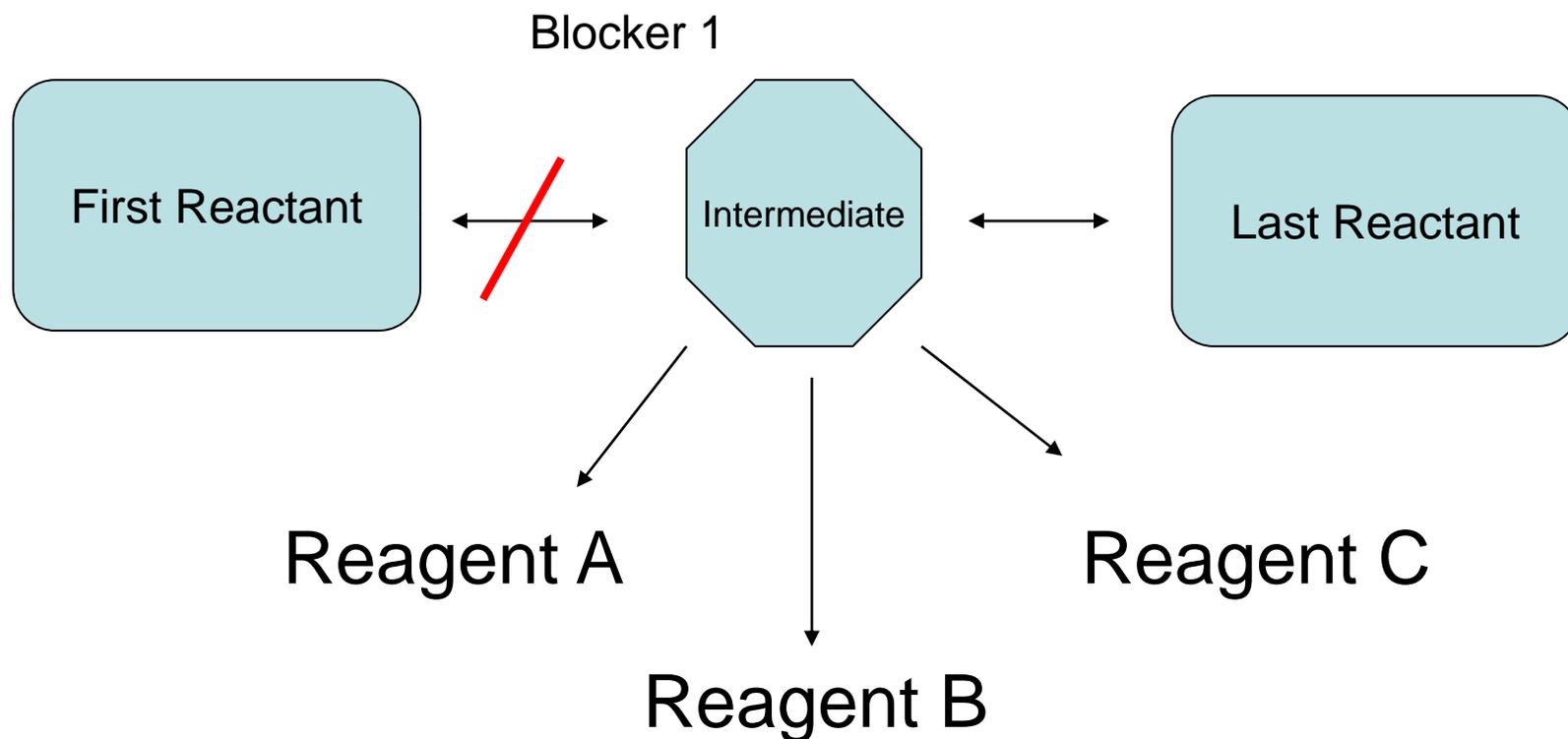
Hydrodynamically focused fluidics



So: you have to explain each step in the process – this animation give time to do that – and the star on the right indicates how many mouse clicks to perform the entire animation sequence – add stars for each click necessary and animate them to disappear at each click

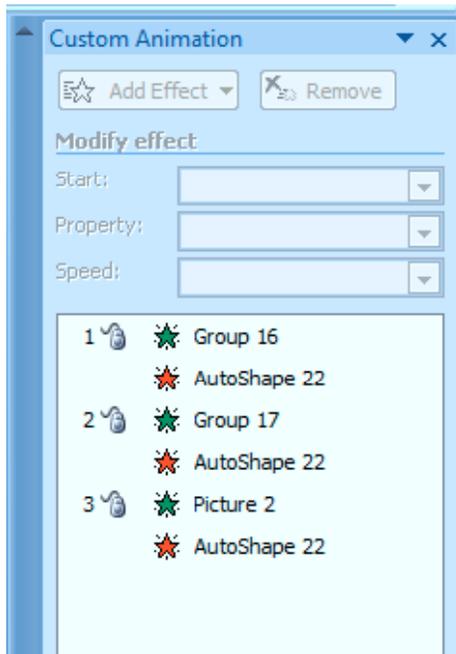


Use diagrams or flow charts if possible



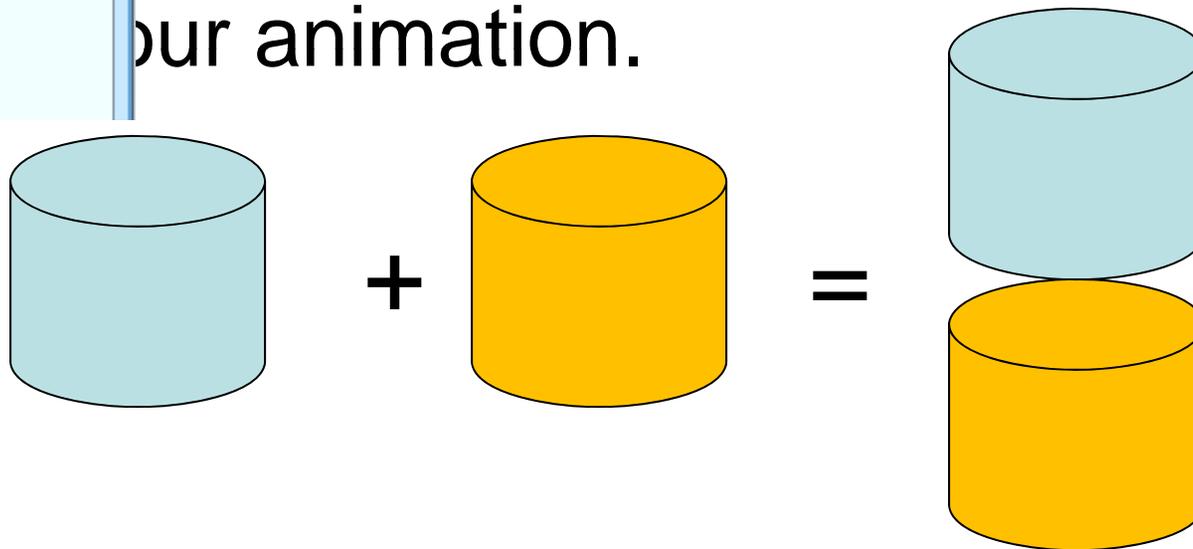
So: Simple – very simple is good. Note the stars indicating the number of mouse clicks left...





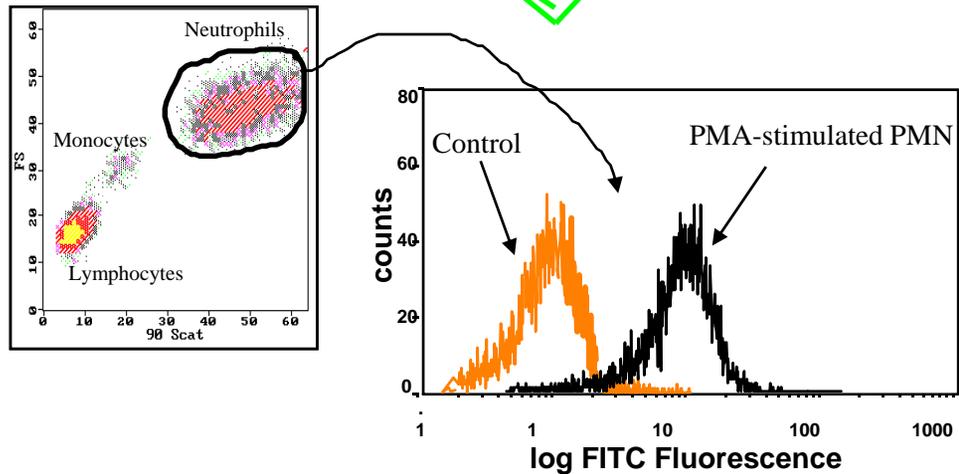
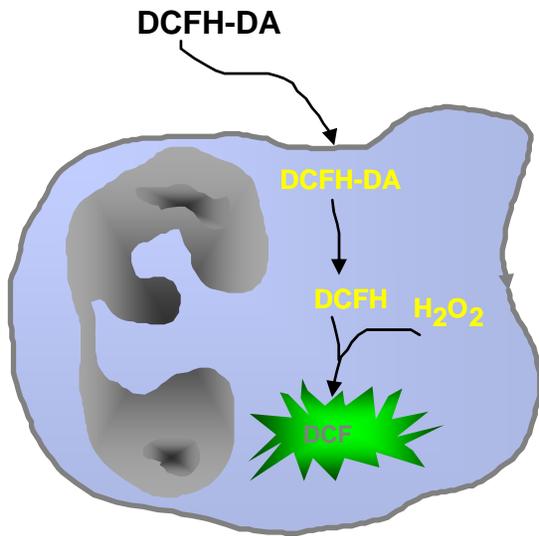
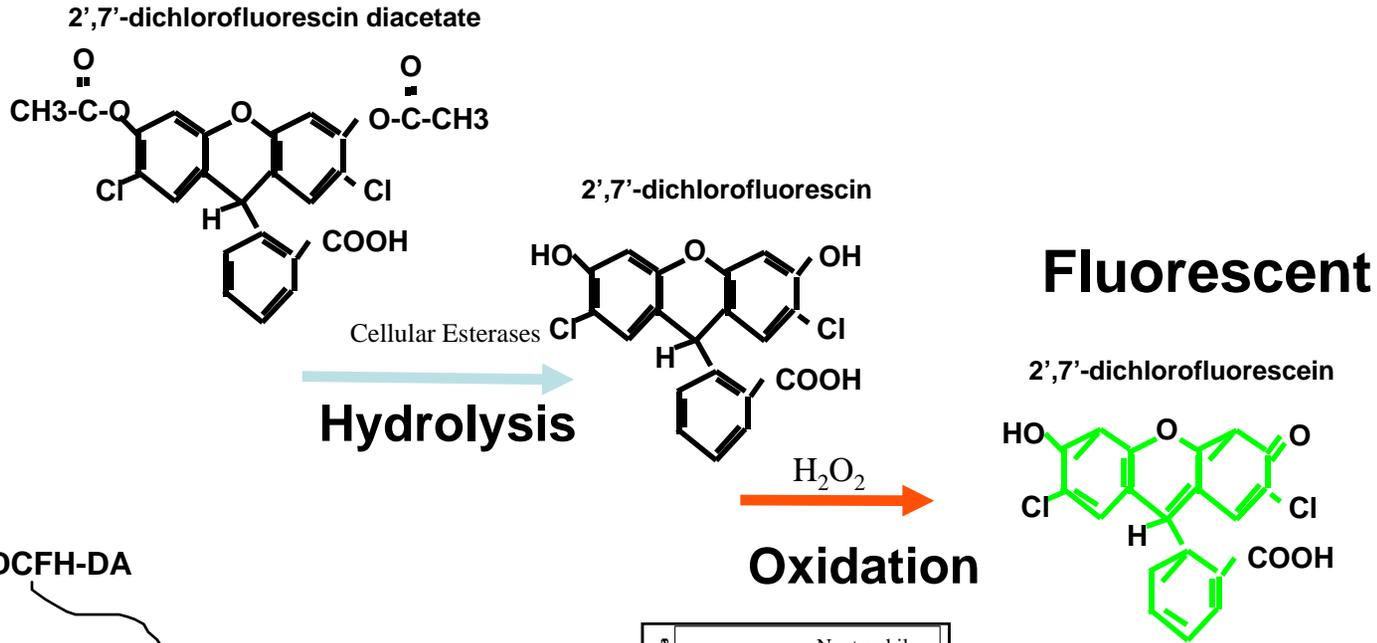
Animation helper

small icon  on the bottom of the
to tell you how many steps there
our animation.



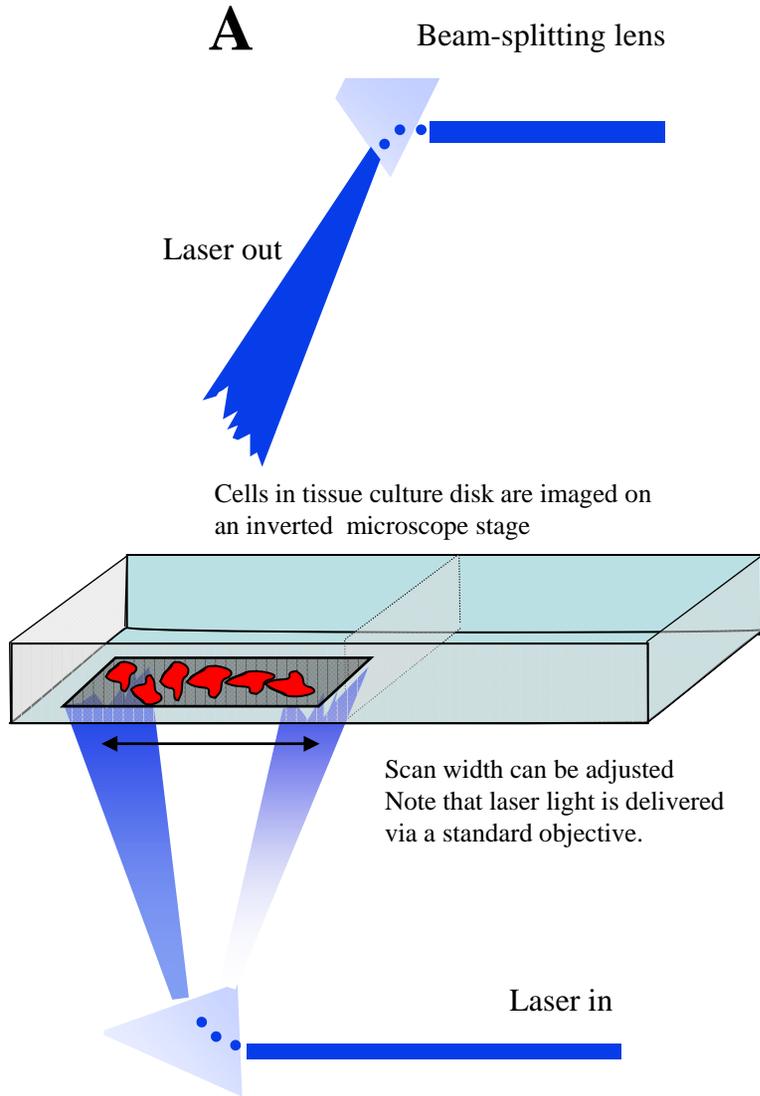
So: Note the stars indicating the number of mouse clicks left...this helps to remind you of how many animation steps you have



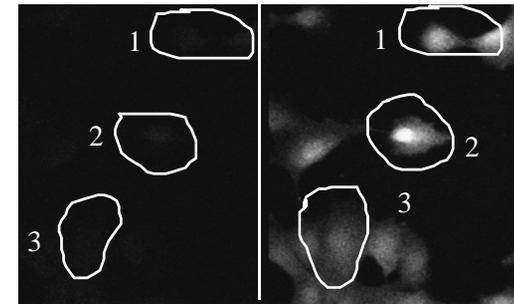


So: This is pretty complex – it needs a long time to explain.

How a line scanning confocal works

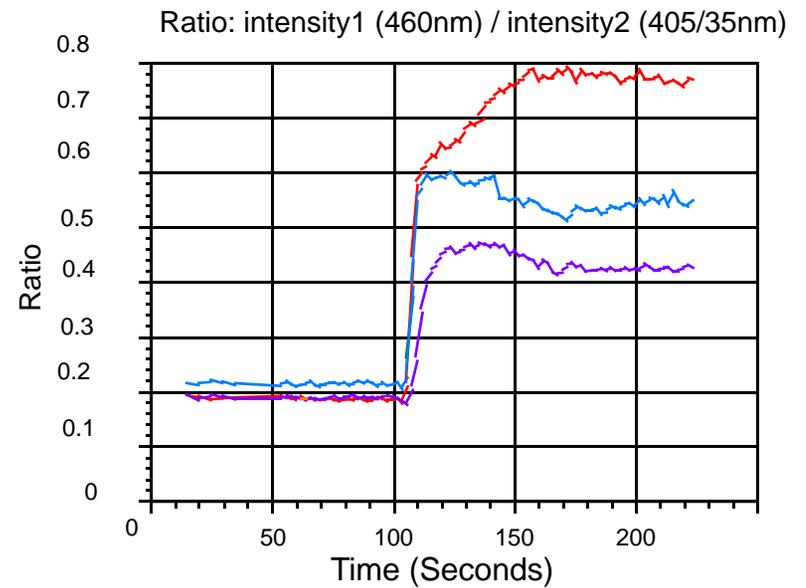


B



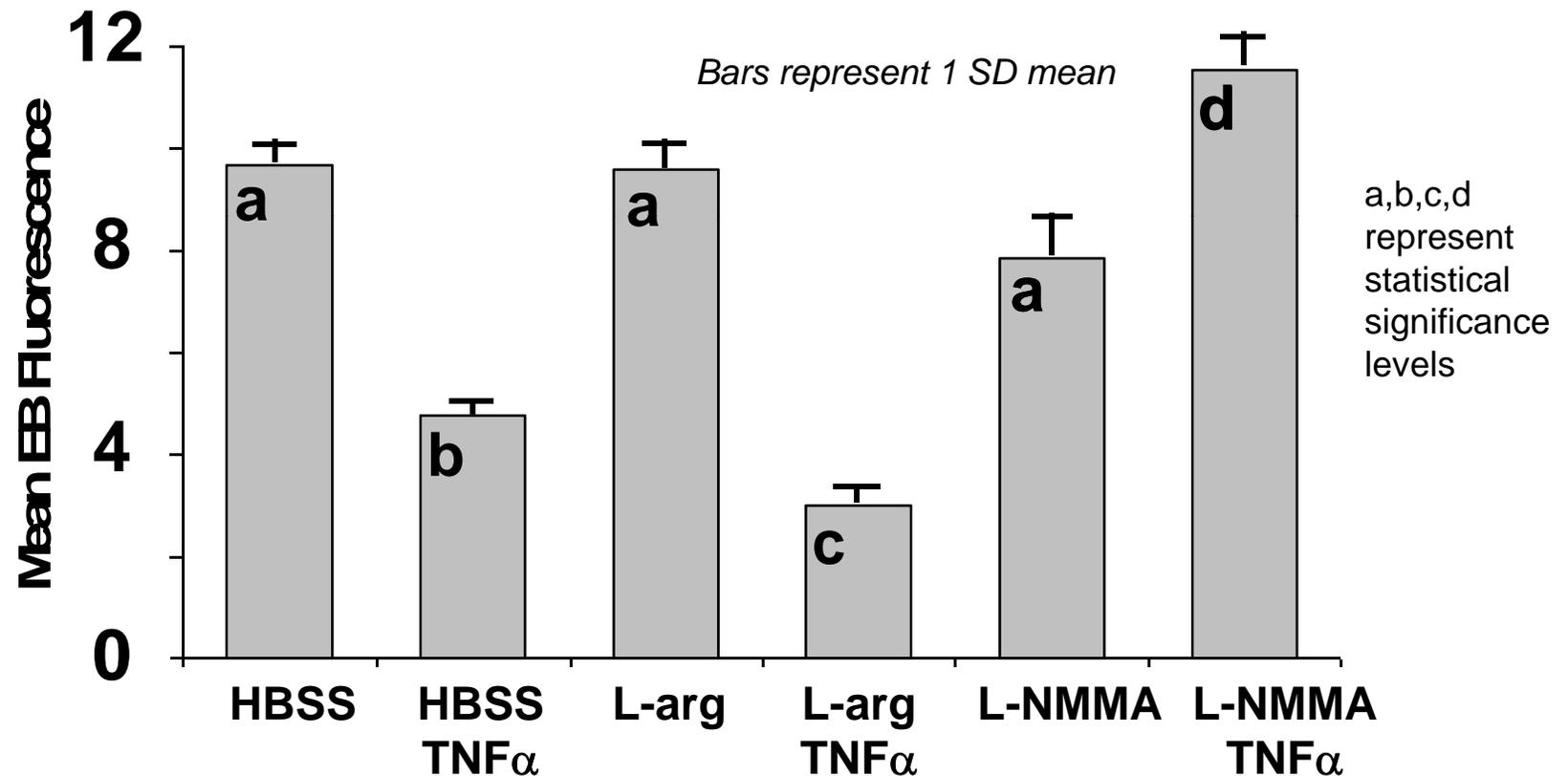
460 nm

405/35 nm



So: This is simple – it is very straightforward – explanation is easy.

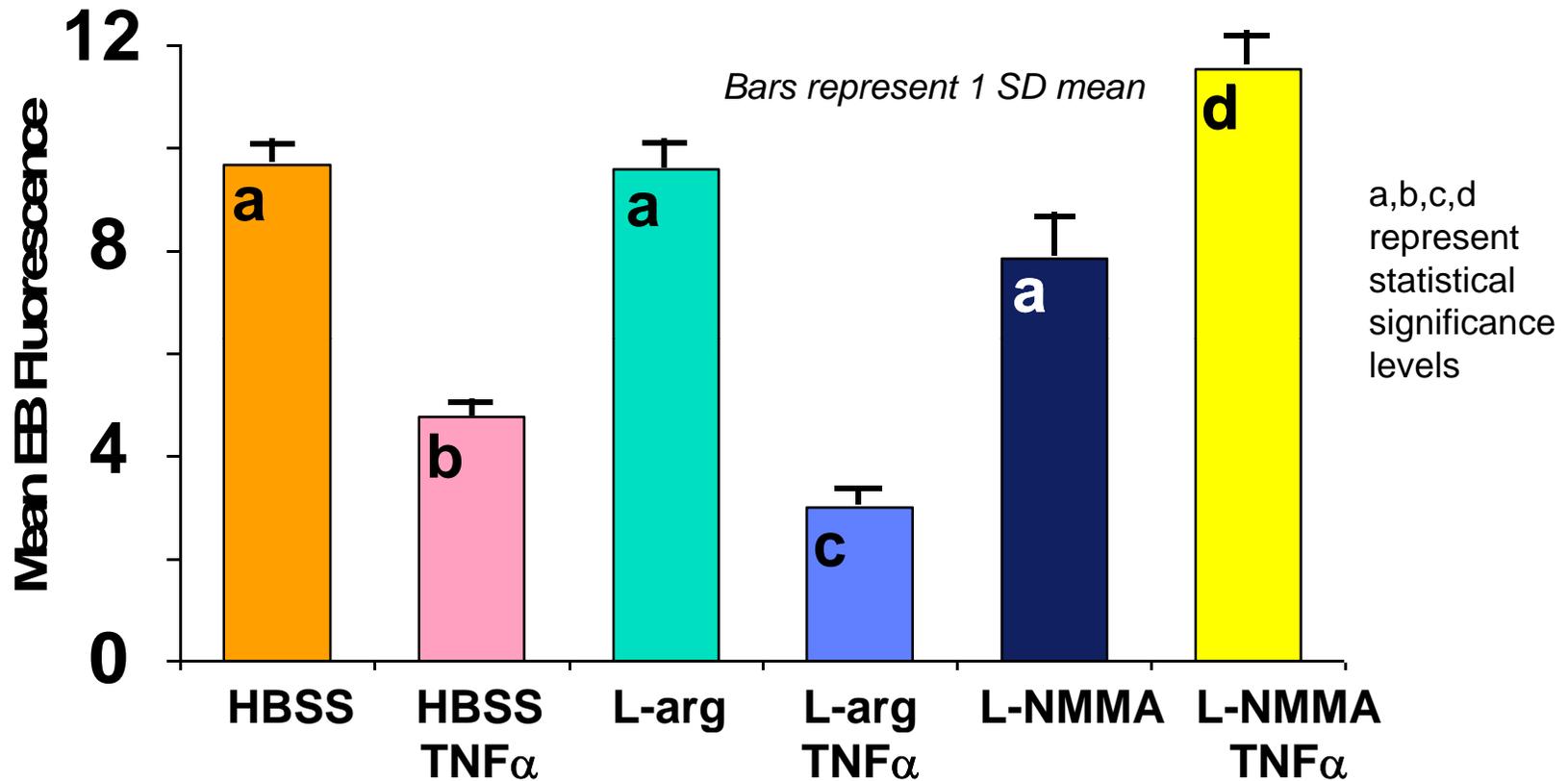
Rat neutrophil oxidative burst with nitric oxide modulators



NO modulators increase superoxide, TNK reduces O₂⁻

So: Basic data, quite simple

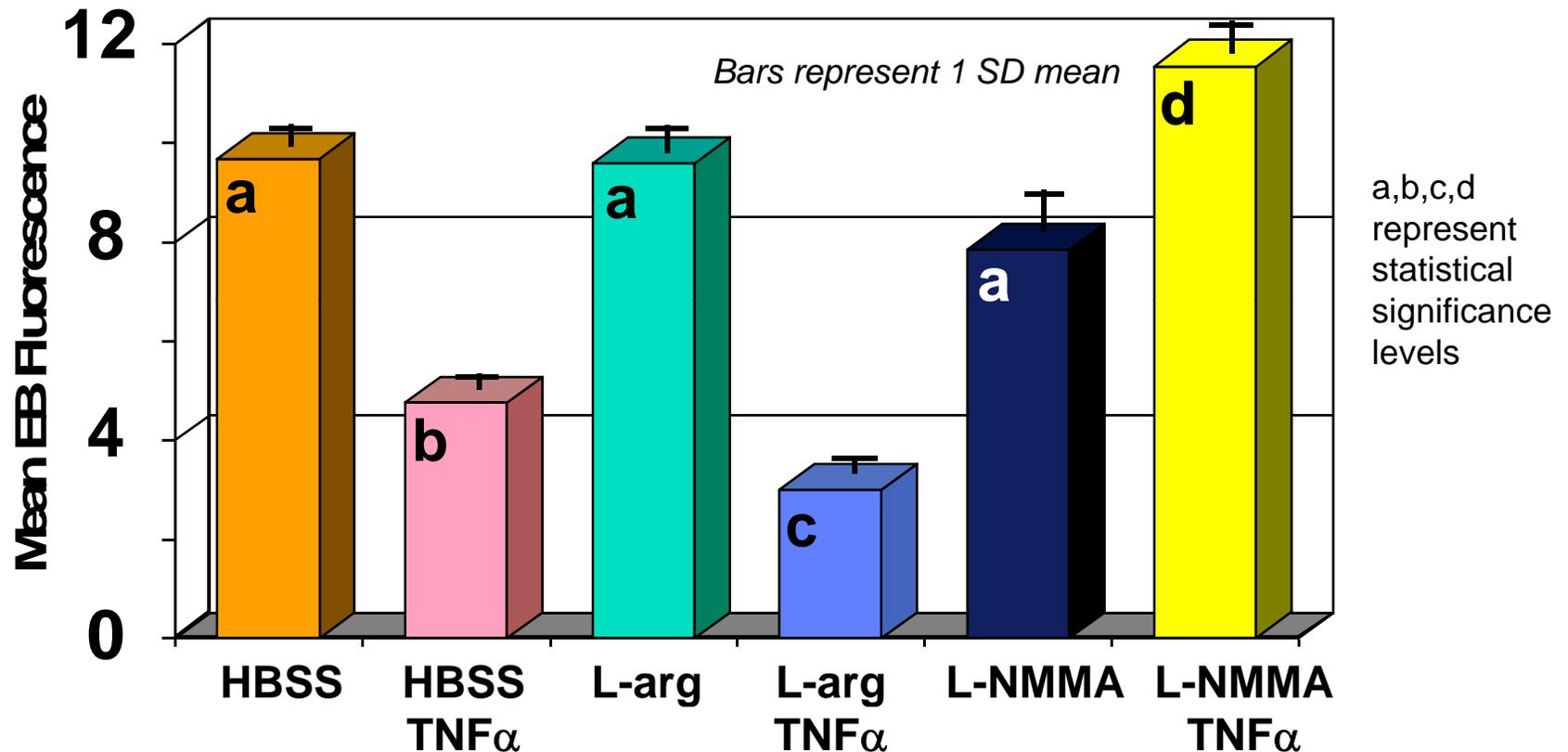
Rat neutrophil oxidative burst with nitric oxide modulators



NO modulators increase superoxide, TNK reduces O₂⁻

So: Basic data, but color enhanced...careful tho' not to confuse what you are trying to explain. Do the colors add value to the data?

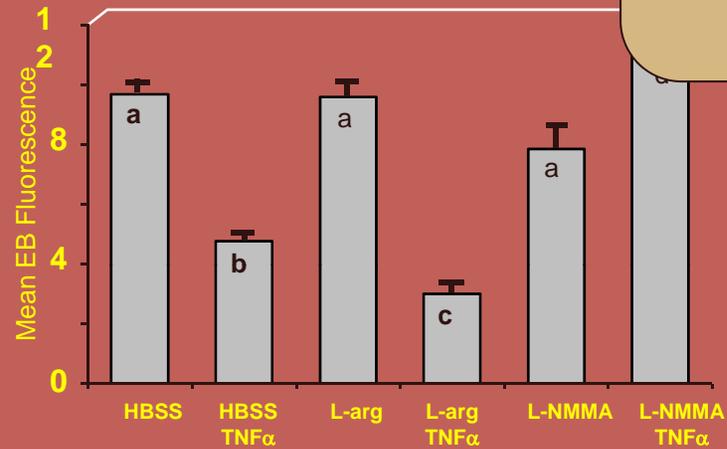
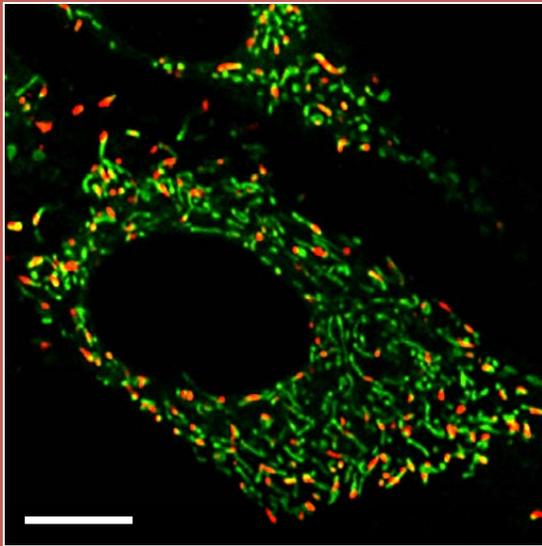
Rat neutrophil oxidative burst with nitric oxide modulators



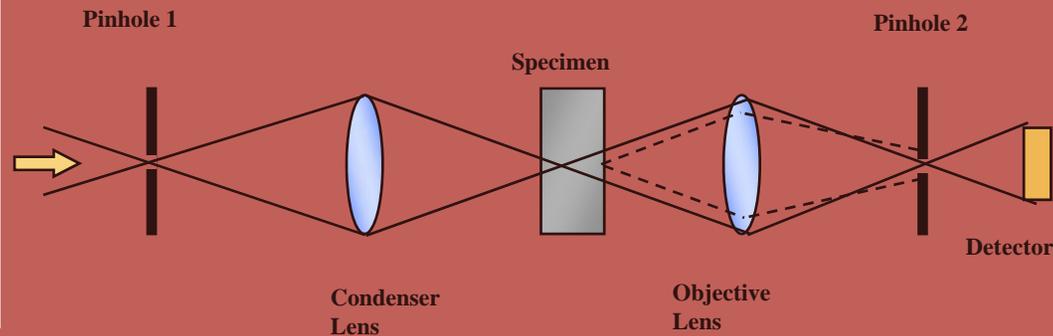
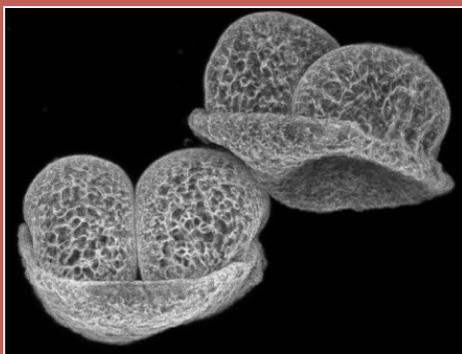
NO modulators increase superoxide, TNK reduces O_2^-

So: Be careful when you use enhancement features. This is OK, but much more would become very distracting.

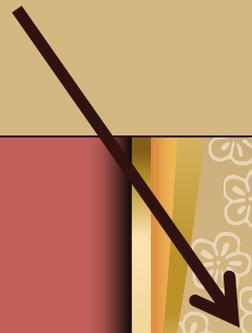
Rat neutrophil oxidative burst with nitric oxide modulators



NO modulators increase superoxide, TNK reduces O₂⁻



This is a useless and distracting piece of this slide



So: This is overboard – background is horribly distracting, and it's just a bad slide. The audience is wincing.....it's not acceptable!!

```
GATTTAGCACAGAGAAGGAATGGATATTTAACCTTGGCTCCTAATTTCCGGTGATATTTTCGA
AAAAAGGAAAGAGAGGAAGGTGGTTTTTGTAACTATTTGCAGACATCCATCTATCTGGTTAA
CTAATATCCAATCTGGTATAATAAAAAAGATCAGAAGGGTTTACTATTAACATCCCAACC
ACAATTTGCACATCTTTTTAATGCTGATTTTGATGGAGATGAGATGACAATATATTCTTT
CAAATCCCCATGTGCCAATCTCGAACAAACCTTTGATTATGAACTCACGAAATCTCTTCA
AAAATTCTATAACAAGCAATCCAATGTTCCGGCTTGGTCCAAGATCAAATACCAGCCTTG
.....
```



Here is something important.....

AATGCTGATTTTGATGGAGATGAG

So: No – bad idea – if you have to tell the audience “..I know you can’t read this....but....” - don’t show it. The previous slide is a totally unacceptable slide – modify it as shown!! NOTE: For PDF versions you will not see that the entire slide has a huge sequence all over it - you can’t read anything!!



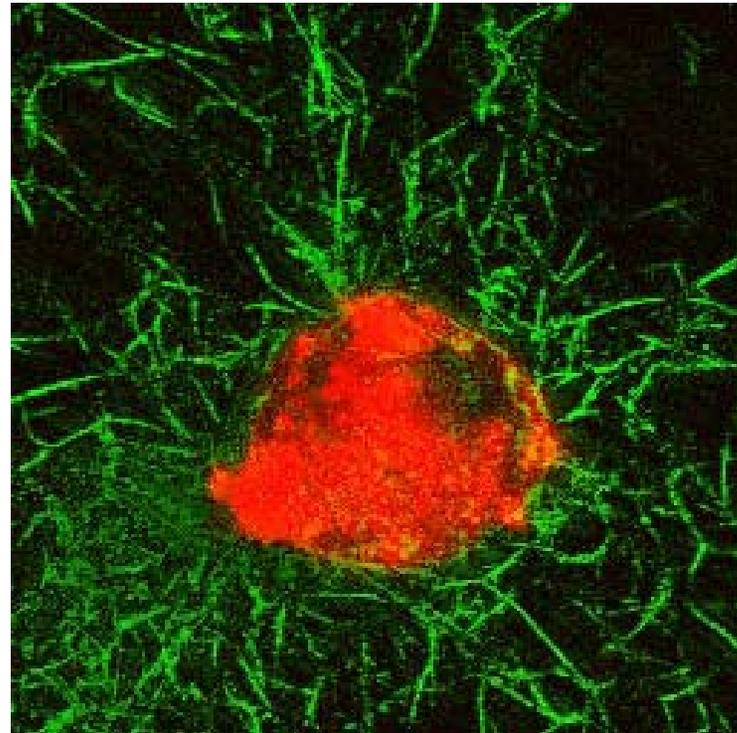
Some things you should know about projectors and computers

- All projectors should be considered the “enemy”
- All projectors are different
- There are often several modes for your computer
 - Laptop, only Laptop and external monitor & External monitor (projector) only
- Be careful to test your system prior to your presentation
- Be careful about using the “official” computer as it may have an older or newer version of your operating system or software

So: Bottom line is check out the projector with ALL your slides before you give the presentation....make sure your movies work! How many times have I seen presentations where movies don't work? HUNDREDS!!

Playing slides with movies

- Everyone plays movies these days.
- So check out the system before you present
- Use the package for CD option if you have to transfer your talk to another system
- Identify the operating system
- If it does not work, insist on using your laptop



So: It's a great movie, but when it does not work and you say "...well if you were able to see this movie, you would see..."....it's not good!

How Many Slides?

- Rule of thumb: Use 1 slide per minute of your allotted time including your opening and closing slides.
- You will spend much longer on some slides than you think.
- For a 20-minute talk, I suggest only 20-25 slides. If you fill up your 20 minutes, there is no time for questions.
- Imaging you are always the last speaker in a session where everyone has gone 5 minutes over and your 30-minute talk now has 15 minutes left? Don't do that to other speakers!!
- This presentation was designed for a 45-50 minute talk with 10-15 minutes for discussion. There are 44 slides in the actual presentation (with a couple of extras at the end).

The last 2 slides are explanations as to how the slides were made – an example of adding extra slides in case a question is asked about a topic. Slide #2 was added to give some “online” explanation. This is not shown in the seminar.

So: 90 slides for a 45 minute presentation says “I am going to blow you away with data, but I don't care if you really understand what I am saying. My huge number of slides says ‘I can't organize myself!’”

Answering Questions

1. Listen carefully to the question
2. Do not interrupt or finish the question for the questioner
3. Repeat the question for the audience in shortened form
4. If you do not know the answer or how to approach, ask for more guidance
e.g. *“I am not sure I understand the question, could you elaborate.”*
5. If you then do not know the answer, don’t ramble, try this:
 - a. *“I am not sure of the answer, but one possible reason might be...”*
 - b. *“I’d be happy to get back to you with the answer to your question after I do some research on the issue”*
6. You can also shift the responsibility to your supervisor/boss or a colleague if you are not sure what to do
e.g. *“Perhaps Professor X can answer that better than I”*
7. NEVER argue with questioners...if they become really “pushy” and are being difficult just say
“Perhaps we can talk about this after the seminar”...and move on
You always have the option of simply saying
“I don’t know the answer to your question at this stage!”

Summary

- A good presentation requires much preparation
- Make a proper introduction and use a slide that shows the structure of your talk
- Have slides that are clean, clear, and readable
- Use approximately 1 slide per minute
- Show a summary slide at the end
- Make the final slide an acknowledgement slide
- Add a few extra slides AFTER your last slide to use in case questions arise in those areas
- Conclude by saying : “*Thank you very much for your attention.*” Stop and let the audience clap!!!
- Do NOT ask for questions unless there is no chairperson!!!!!!!!!!

So: Do NOT ask for questions!!

Acknowledgements

Identify
colleagues

- **Tissue Engineering Studies**

- Sherry Harbin
- Blayne Roeder
- Alaina Pizzo
- Klod Kokini
- Jennie Sturgis
- Bartek Rajwa
- Bev Waisner

Identify funding sources

Funding Sources

National Institutes for Health
National Science Foundation
Howard Hughes Medical Institute

- **Microbiology/Biofilms**

- Stephanie Sincock
- John Thomas
- Gerald Gregori
- Kathy Ragheb

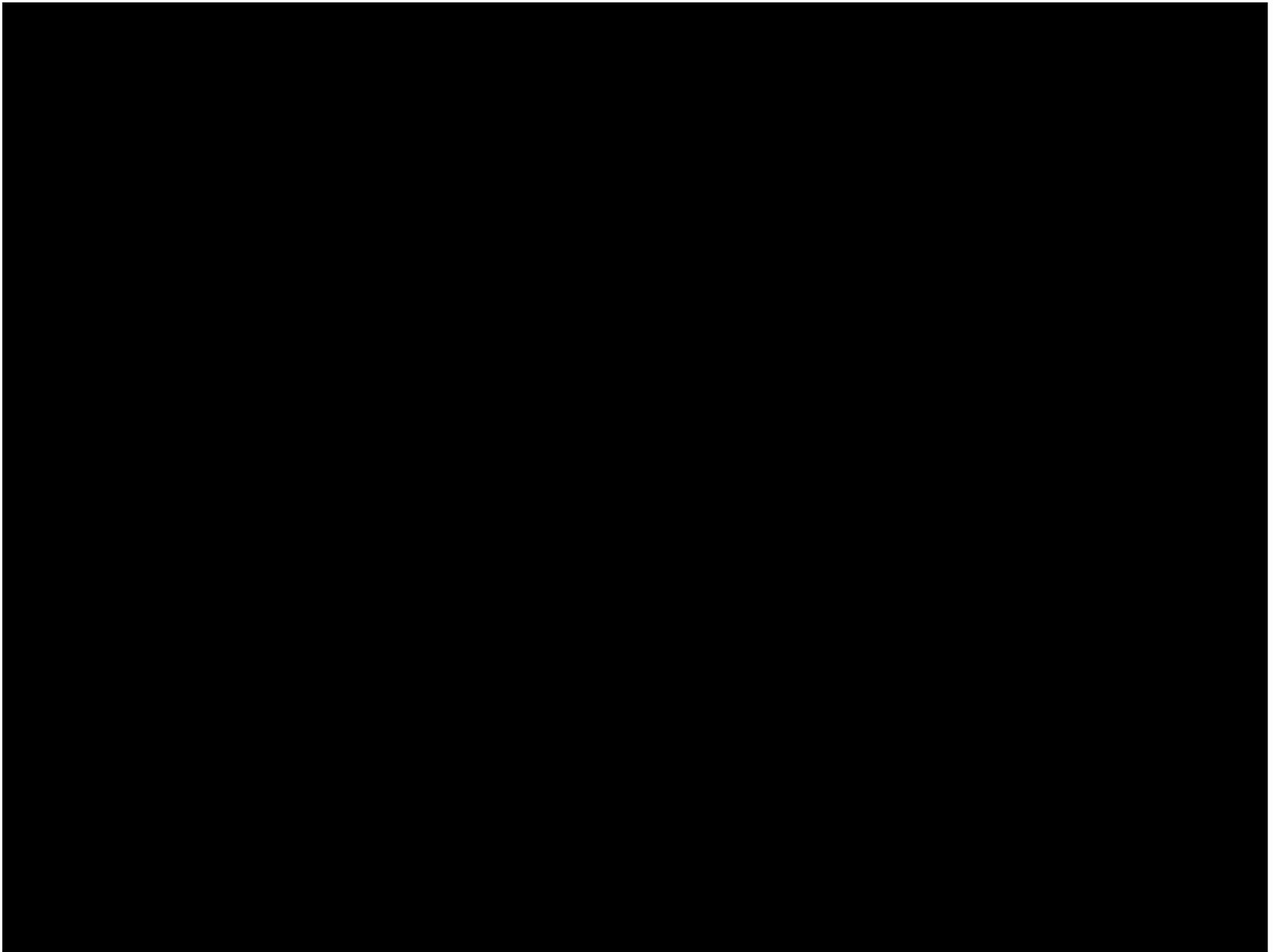
Identify
Corporate
support

Any company you received funds, Inc

- **Oxidative Metabolism Studies**

- Carl-Fredrick Bassoe
- Nianyu Li
- Kathy Ragheb
- Gretchen Lawler

So: List names of those who contributed to the work. Also list your funding sources, and acknowledge any companies that contributed. People must know if your work has been funded by a corporate sponsor. It's the law to identify them if your work is federally funded in any way!



How were the Printouts Prepared?

- Slides were made in PowerPoint™
- They were “printed” to Adobe Acrobat™ to create a PDF file
- The PDF was printed 6 per page, framed in Acrobat, which allows you to fill the page
- This gives a larger slide than printing directly to the printer from PowerPoint

Features added

- You can place these features using
- “[Slide Master](#)” – but note that PPT differentiates between different “masters” so you can actually have many different styles that complicate these features

A copyright statement is added using [Header & Footer](#)

Slide number is added using [Header & Footer](#)

A clock can be added that shows real time by using [Header & Footer](#) and activating update in real time

About this Presentation

- The original presentation was designed to assist graduate students to create quality presentations
- This version is a more general guide to all speakers
- You may copy this and use it for any purpose, it may not be commercialized
- If you do use it, please acknowledge the source as:

J. Paul Robinson, Ph.D.

Professor, Purdue University

Email: jpr@flowcyt.cyto.purdue.edu

Web: www.cyto.purdue.edu

The actual presentation is at <http://www.cyto.purdue.edu/Education/index.htm>

This talk has been presented many times since the original version in 2000.

This current version 04/02/10