



# Giving a "good" research presentation

Graduate Student Seminar Department of Pathology & Laboratory Medicine, UBC September 22, 2009

# Outline



- Preparation
- Presenter issues
- Presentation format
- Slides
- Practice
- Answering questions
- Do's and don'ts
- Resources

# Preparation

- Setting
  - Lab meeting
  - Conference
  - Course
- Audience
  - Clinicians or scientists?
  - Level of expertise?
- Length of presentation
  - Short and simple

## Presentation



## What is the information you wish to teach?

#### **Clear background**

- Point 1 intro/method... result... interpretation...
- Point 2 intro/method... result... interpretation...
- Point 3 intro/method... result... interpretation...

## 45 minutes

#### 15 min: 1, maybe 2 points

#### **Memorable conclusion**

## **Presenter issues**



- Introduced by Chair/Host?
  - Prepare short bio, thank someone
- Formal or informal?
  - Questions as you go or at the end?
- Handouts?
- Computer screen?
- Pointer needed? if yes use sparingly, consider mouse
- Mac/PC, software version issues, fonts
- Consider a watch, water

**Presentation format-1** 

- Title slide short but targeted, your name, affiliation
- Outline needed?
- Background
  - Put disease/research subject in context
  - Favor visuals instead of text (images, diagrams)
- Hypothesis or Research question
- Method or study design
  - Define study/control population
  - Describe assay

# **Presentation format-2**

## Results

- No need to present all your results (representative)
- Use visuals (graphs, tables)
- Interpretation/summary
- Conclusions 1 to 3 key points
- Next step, future direction?
- Acknowledgement
  - People, grant support, salary support, logos





- Titles
- Aim at one slide per 1-2 minute
- ~7 lines per slide, ~7 words per line

## Secretory carcinoma of the breast

- 1. Rare variant of ductal carcinoma
- 2. Histology
  - Well differentiated glandular appearance; ER+
  - Abundant extracellular and intracellular mucin
  - Low histologic grade
- 3. Clinical features
  - First three decades, but not exclusive to young pts
  - Good prognosis in young pts; similar outcome as for ductal carcinoma in older pts
- 4. Genetics
  - Brown et al, *Cancer Cell*, 2002
    - t(12;15) in 12 of 13 SBC cases (92%)
  - Several additional reports of the t(12;15) in SBC
  - Smith et al, Genes Chromosomes and Cancer, 2004
    - Found the t(12;15) in 1/202 (0.5%) ductal carcinomas by FISH of tissue microarrays; confirmed as an SBC

# **HSFC Press Release**

- According to the Heart and Stroke Foundation of Canada (HSFC), chest compressions alone, or Hands-Only Cardiopulmonary Resuscitation (CPR), can save lives and can be used to help an adult who suddenly collapses.
- Hands-Only CPR is a potentially lifesaving option that can be used by people not trained in conventional CPR, or those who are unsure of their ability to give the combination of chest compressions and mouth-tomouth breathing required.
- Hands-Only CPR should also not be used for infants or children, for adults whose cardiac arrest is from respiratory causes (like drug overdose or near-drowning), or for an unwitnessed cardiac arrest.
- More than 80% of cardiac arrests happen at home or in public places and less than 5% of these victims survive. Research shows that 35% to 55% of out-of-hospital arrests are witnessed by a bystander, often a family member or friend, but very few victims receive CPR.



http://www.heartandstroke.bc.ca/site/apps/nlnet/content2.aspx?c=kp IPKXOyFmG&b=3645001&ct=5155325



#### TABLE 1: MICROARRAY ANALYSIS OF ETV6-NTRK3 VERSUS MSCV VECTOR CONTROL NIH3T3 CELLS Genes up-regulated in ETV6-NTRK3 versus MSCV vector alone NIH3T3 cells

GenBank annotation	GenBank accession #	EYV6-NTRK3/MSCV	Ha-Ras
S-phase kinase-associated protein 2 (p45) (Skp2)	NM 013787	79.11421086	
deoxyhypusine synthetase (DHS) homolog	AK005790	68.94743219	
S-adenosylhomocysteine hydrolase (Ahcy)	NM 016661	67.09892698	
*glutahione S-transferase pi class	BC021614	67.09892698	
*flavin-containing monooxygenase	AA213017	41.17411778	
high mobility group protein isoforms I and Y (Hmgiy)	AF285780	32.08731731	+
Cyclin D1	AA111722	17.40906027	+
aquaporin 1 (Agp1)	NM 007472	15.60788666	+
*microsomal glutathione S-transferase 3 (Mgst3)	NM 025569	9.01258022	
neural cell adhesion molecule L1 (NCAML1),	AF133093	8.003802023	
*sulfide guninone reductase	BC011153	6.956809465	
adaptor protein complex AP-1, gamma 1 subunit (Ap1g1)	NM 009677	6.798491268	
equilibrative nucleoside transporter 1	AF218255	6.535149726	
*FAD-linked glycerol-3-phosphate dehyrogenase (Gdm1)	U60987	5.896530998	+
fatty acid synthase	AF127033	5.488265074	
osteopontin	J04806. X14882	5.099884186	+
manic fringe homolog (Mfng)	U94349	4.851588637	
cellular tumor antigen p53	X00884	4.512773746	
RNA polymerase 1-3 (Rpo1-3)	NM 009087	4,495049	+
PCNA (proliferating cell nuclear antigen)	X57800	4.330410424	+
*palmitovl-protein thioesterase 2 (Ppt2).	NM 019441	4.31850139	
alpha actinin 1 (Actn4)/calpain 12	NM 021895	4.23155635	
kinesin family member C1 (Kifc1)	NM_016761	4.228845794	
cell division cvcle protein 2 (cdc2)	U69555	3.919074432	
M23379 GTPase-activating protein-like	AA517387	3.775776436	
tumor necrosis factor.alpha-induced protein 2	NM 009396	3.707221668	+
Iona-chain fatty-acyl elongase (Lce)	NM 130450	3.633024474	
kappa B-RAS homolog	AK010371	3.58831135	
lvsvl oxidase-like/serine protease-Prss25/OMI/HtrA2	NM 019752	3.570218625	+
PDGFR alpha	NM_011058	3.459332115	+
RANBP20	AY029528	3.324454243	
*thioredoxin reductase 1 (Txnrd1)	NM 015762	3.100364321	+
Ras-GTPase-activating protein SH3-domain binding protein	NM 013716	3.034158149	
transforming growth factor, beta1	NM 009369	2.987632224	
interferon activated gene 203 (Ifi203)	NM 008328	2.970464576	
breast cancer susceptibility (Brca2)	U82270	2.947191482	
member RAS oncogene family RAB31-like	BC013063	2.859204028	
*fatty acid Coenzyme A ligase long chain 3	AK012088	2.764457398	
HEP03830 (TPR domain containing protein (homolog)	AK009765	2.720009579	
calpain 5 (Capn5)	NM 007602	2.660858654	+
*metallothionein 1	AK018727	2.594063198	
*squalene epoxidase (Sqle)	NM 009270	2.570903745	
Bcl-associated death promoter	AK008481	2.56704509	
*arsenic resistance ATPase (RrsA)	4F061177, AF061178, AH007418	2.506616248	
inititation factor eIF-4A1-like	BC008132	2.491371539	
HECT-domain (ubiquitin-transferase)	AK019546	2.454098372	
branched chain aminotransferase 1	AK013888	2.374820798	
retinoic acid receptor gamma (RAR-gamma-B)	M34475	2.362696639	
*selenophosphate synthetase 2 (Sps2)	NM_009266	2.259792637	

## Slides



## • Titles

- Aim at one slide per 1-2 minute
- ~7 lines per slide, ~7 words per line
- Easy to read font, good contrast

## Background, Design and Text

Background: White / dark blue Design: **For text slides only** Don't use dramatic designs



# The hematopoietic hierarchy







#### A and B Act Synergistically in a Hepatic Tumour Model

# Background, text



- Simple text font:
  - Arial or helvetica most commonly used
  - Times roman and courrier not great
  - Use at least 24-28 points, otherwise hard to read
  - Make sure people can read it without effort
- Too much contrast (black & white) hard on the eye
- Many people are color blind and do not see a difference between red and green

## Slides



## Titles

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- Easy to read font, good contrast
- Use animation sparingly

# Animation



- Don't really need animation for text
- It can be very disturbing
- And not add anything to the point
- Useful to explain a complex slide

## Slides



## Titles

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- Easy to read font, good contrast
- Use animation sparingly
- If complex, break it down

## The Integrated Circuit of the Cell



#### D.Hanahan & R. Weinberg, Cell 2000

### Ηαχεί ο σερ-εξπρεσσιον πρεσεντσ αχτισατιον οφ χασπ ασε-12 ανδ δοωνστρεαμ αποπτοτιχ πατηωαψσ



Apoptosis / Caspase Signaling Pathway

Υβιθυιτιν λιγασε αχτισιτψ οφ Ηαχε 1 ισ χριτιχαλ φορ συππρεσσιον οφ αποπτοτιχ σιγναλινγ

#### Human Sarcomas with Simple Karyotypes and Specific Genetic Alterations



## Slides



- Use titles
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- Use animation sparingly
- If complex, break it down
- Label graphs and axes, avoid jargon and undefined abbreviations





• Practice, practice, practice



### **GET FEEDBACK**

Supervisor, mentor, colleagues, friends

# Questions



- Keep time for questions
- Prepare for them
- Listen, ask to repeat if needed
- Repeat the question for the audience
- Be honest if you don't know
- Avoid secrecy

## Do's



- Talk to the audience
- Less is more
- Make take-home message persistent
- Be logical (flow: beginning, middle, end)
- Treat floor as a stage
- Practice and time your presentation
- Use visuals sparingly but effectively
- Review audio/video of your presentation
- Provide appropriate acknowledgements

Bourne PE, PLoS Comp Biol, (2007) 3:e77

# Don'ts



- Talk to yourself or your slides
- Say hummm....
- Overuse certain words (like, you know, basically)
- Fidget
- Sight, look like you don't care
- Overuse the pointer or follow each line with it

## **Useful resources**



Bourne PE (2007). Ten simple rules for making good oral presentations. PLoS Comput Biol 3 (4): e77.

Fischer, Beth and Zigmond, Michael. Making Oral Presentations. Survival Skills and Ethics Program. <u>www.survival.pitt.edu</u>

http://www.slideshare.net/thecroaker/death-by-powerpoint

**QUESTIONS?**