

Students – additional information that expands on the slide content has been included in the speaker notes section for your convenience. If speaker notes are available you will see a speech bubble icon in the top left corner. Hover over the icon to see the speaker notes for that slide.

UBC SHARC 2016 Workshop

Creating and delivering
a 1 min 1 slide lightning presentation

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Ada Lo

UBC MD 2019



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Science Communication

Tips for effectively sharing your research

Part 4: Creating & delivering a 1 min 1 slide lightning presentation

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What is the purpose of a 1 minute 1 slide lightning presentation?



Components of a (lightning) talk

1. Information
2. Supporting Visuals
3. Delivery



What should you present?

How should you present it?



What info should you present?

1. Know your audience
2. Distil your research
3. Make it interesting



1. Know your Audience

Who?

When?

What?



Where?



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Examples

Know your audience



Cardiac performance of perfused
cucian carp hearts during anoxia

Linda Ha

University of Brit

Kåre-Olav Stenslo
(Tony) Farrell¹, G
Jonathan

University

How do carp survive without oxygen?



2. Distil your research

- Focus on the important stuff
- Eliminate superfluous detail
- Lead the listener
- 1 take home messages
- Say NO to methods
- Don't introduce confusion



Photo: [Roger Ferrer Ibáñez](#) flickr



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2. Distil your research

- What is the problem?
- Who is affected?
- What solutions do you offer?
- What difference will it make?
- Why should we care?

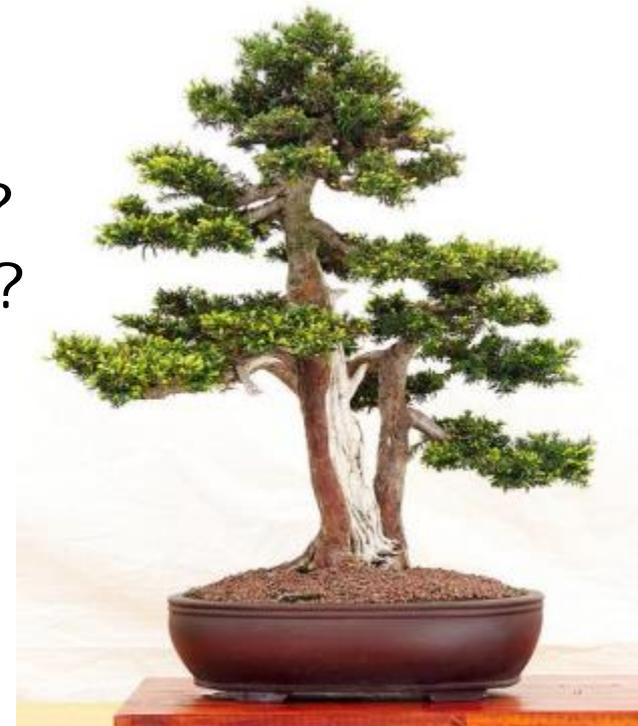


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EXAMPLE

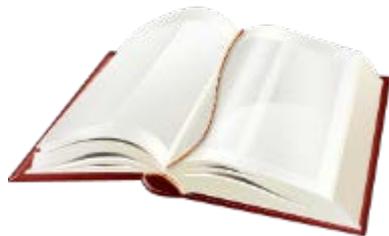
In this study we characterized the properties of two types of adrenergic receptors that regulate cardiac function. We found that receptor A XZ2 is up regulated after acute myocardial infarction when compared with receptor HXQ-DD. Receptor A XZ2 is one of the targets of Long-drug-name which is commonly administered post-infarction to help prevent myocardial damage. We compared the effectiveness of long-name-drug to other-name-drug and discovered that...

We want to find the best way to prevent the heart from being damaged by a heart attack.

3. Make it interesting

Engaging title

but^appropriate



Tell a story



Get excited



Limited time

Be yourself



Examples

Personalize your talk



Cardiac performance of perfused
cucian carp hearts during anoxia



Linda Hanson
University of British Columbia

**Kåre-Olav Stensløyken², Anthony
(Tony) Farrell¹, Göran Nilsson² &
Jonathan Stecyk²**
University of Oslo



The cucian carp, the true
champion of anoxia



Linda Hanson¹
University of British Columbia¹

**Kåre-Olav Stensløyken², Anthony
(Tony) Farrell¹, Göran Nilsson² &
Jonathan Stecyk²**
University of Oslo²

How do you present your work?

1. Supporting visuals – single slide
2. Delivery of information





Think visually – your slide

Do you think that anyone can actually read the this tiny, tiny font...
...or that they want to spend 20 minutes reading one poster?

Font choice



Summarize



Images



White space

No distractions

Readability



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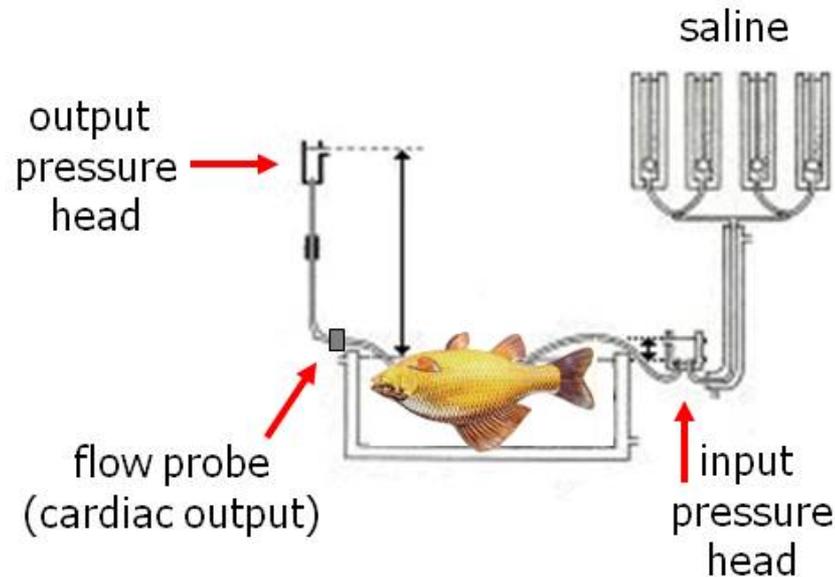
EXAMPLE

The *in situ* perfused heart

- This is a slide where we explain the methodology with a huge block of text
- It is really time consuming to read and the audience is likely to either stop listening to you while they read it or their attention is liable to start wandering
- Are you even still reading the text at this point?
- Do you have any idea what the speaker is saying at this point?

EXAMPLE

The *in situ* perfused heart



Cardiac power output = flow x pressure generated
(i.e. ATP demand) **($P_{in} - P_{out}$)**

Examples

Can you read this itty bitty text? You should avoid using fonts sizes <24 point. Seriously, even for axis labels.

What about this red text on a blue background? Do you have a headache yet?

If that doesn't do it maybe this one will!

Red and **green** are indistinguishable for some people. How legible are your slides if you use red and green to distinguish your treatment groups on your graphs?

Examples

Rescue of cardiac performance with adrenergic stimulation during hypoxia, acidosis and hyperkalemia in rainbow trout (*Onchorhynchus mykiss*)

Linda M. Hanson¹, Janet Mouniargi², Shannon Obradovich³, and Anthony P. Farrell⁴

¹Department of Zoology, University of British Columbia, Vancouver, British Columbia, Canada; ²Zoophysiology, Gothenburg University, Sweden; ³Biological Sciences, Simon Fraser University, Canada; ⁴Faculty of Agricultural Sciences & Dept. of Zoology, University of British Columbia, Canada.

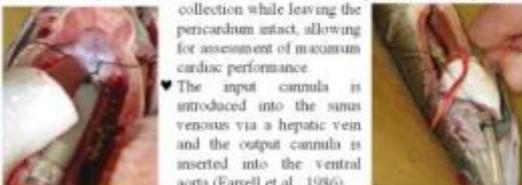
Introduction

- ♥ The rainbow trout heart relies primarily on luminal circulation (venous blood)
- ♥ Luminal circulation becomes hypoxic, acidotic and hyperkalemic during strenuous exercise, factors that are highly detrimental to cardiac performance
- ♥ Nevertheless, the rainbow trout heart must maintain a high cardiac performance under these conditions
- ♥ We hypothesize that Adrenergic stimulation plays a critical role in maintaining maximum cardiac performance under conditions of strenuous exercise (hypoxia, hyperkalemia and acidosis).
- ♥ In addition, we were interested in determining the hypoxic thresholds for cardiac collapse under hypoxia alone, and under strenuous exercise conditions with tonic and maximal adrenergic stimulation

Technique – The Perfused Heart

♥ This *in situ* preparation isolates the heart in terms of perfusate delivery and collection while leaving the pericardium intact, allowing for assessment of maximum cardiac performance

♥ The input cannula is introduced into the sinus venosus via a hepatic vein and the output cannula is inserted into the ventral aorta (Farrell et al., 1986)

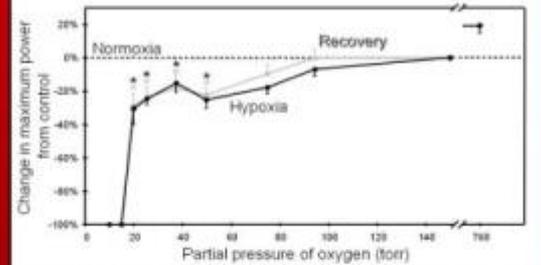


Experimental Procedure

- ♥ Maximum cardiac performance of *in situ* perfused rainbow trout hearts was assessed at 10°C under varying levels of hypoxia (94-10 torr), both alone and in conjunction with hyperkalemic (5 nM), acidotic (pH 7.5) exposure
- ♥ In addition, the hypoxic, hyperkalemic, acidotic exposure was done with both tonic (5 nM) and maximal adrenergic stimulation (500 nM)
- ♥ Sequential 15 min perfusions were done for individual hearts as follows:
 1. normoxic (150 torr O₂, pH 7.9, 5 nM adrenaline)
 2. hypoxic (pH 7.9, 5 nM adrenaline)*
 3. recovery/normoxic (150 torr O₂, pH 7.9, 5 nM adrenaline)
 4. strenuous exercise (hypoxic, 5 mM K⁺, pH 7.5, 5 nM adrenaline)*
 5. strenuous exercise with adrenergic stimulation (hypoxic, 5 mM K⁺, pH 7.5, 500 nM adrenaline)*

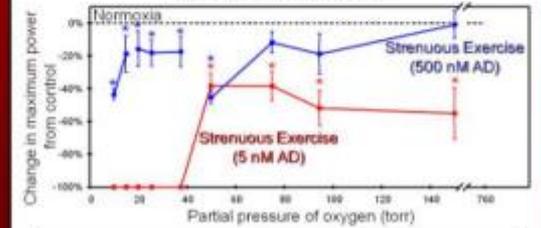
*For experiments conducted below hypoxic thresholds hearts were not exposed to lethal steps

Maximum cardiac performance under hypoxia



Hypoxia & Hypoxic Recovery: Maximum power of perfused rainbow trout hearts was assessed under normoxic conditions (150 torr O₂), specific levels of hypoxia (indicated on the x axis), and then again under normoxic conditions (recovery). Each P_{O₂} value indicates a separate group of hearts (N=4-10). Values plotted are change from control ± SEM. *denotes significant differences from control (repeated measures ANOVA P<0.05)

Maximum cardiac performance under strenuous exercise conditions



Hypoxia, hyperkalemia and acidosis: Following recovery (see above), maximum power of perfused rainbow trout hearts was assessed under specific levels of hypoxia (indicated on the x axis), in conjunction with hyperkalemia (5 mM KCl) and acidosis (pH 7.5) to simulate strenuous exercise conditions, first with tonic adrenergic stimulation (5 nM) and then with maximal stimulation (500 nM). Each P_{O₂} value indicates a separate group of hearts (N=4-10). At P_{O₂} levels ≤ 37 torr hearts were not exposed to the hypoxic, hyperkalemic, acidotic saline with tonic adrenergic stimulation. In addition, at P_{O₂} levels ≤ 15 torr hearts did not receive prior exposure to hypoxia alone. Values are plotted as change from control ± SEM. *denotes significant differences from control (repeated measures ANOVA P<0.05)

Results & Conclusions

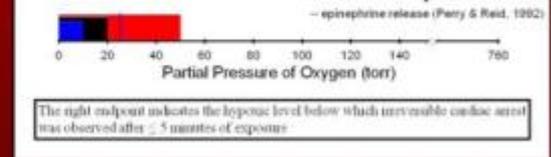
- Hypoxia Alone**
 - ♥ Exposure to hypoxic perfusate ≤ 50 torr resulted in significant reductions in maximum cardiac performance
 - ♥ In addition, full recovery upon return to normoxic conditions was not seen
 - ♥ Exposure to hypoxic perfusate ≤ 20 torr was lethal thus the threshold for cardiac collapse under hypoxia occurred between 15-20 torr

- Hypoxia, Hyperkalemia & Acidosis**
 - ♥ With tonic levels of adrenergic stimulation maximum performance during simulated strenuous exercise conditions was significantly decreased
 - ♥ The threshold for cardiac collapse under the above conditions was between 37-50 torr as exposure to perfusates ≤ 50 torr was lethal

Rescue With Adrenergic Stimulation

- ♥ Maximum adrenergic stimulation restored cardiac performance in hearts previously exposed to strenuous exercise conditions when P_{O₂} ≥ 75 torr
- ♥ Maximal adrenergic stimulation protected cardiac performance during exercise where P_{O₂} ≤ 37 torr, conditions that would otherwise be lethal
- ♥ However, even with adrenergic stimulation maximum performance was significantly decreased from that observed during normoxia

Thresholds for cardiac collapse



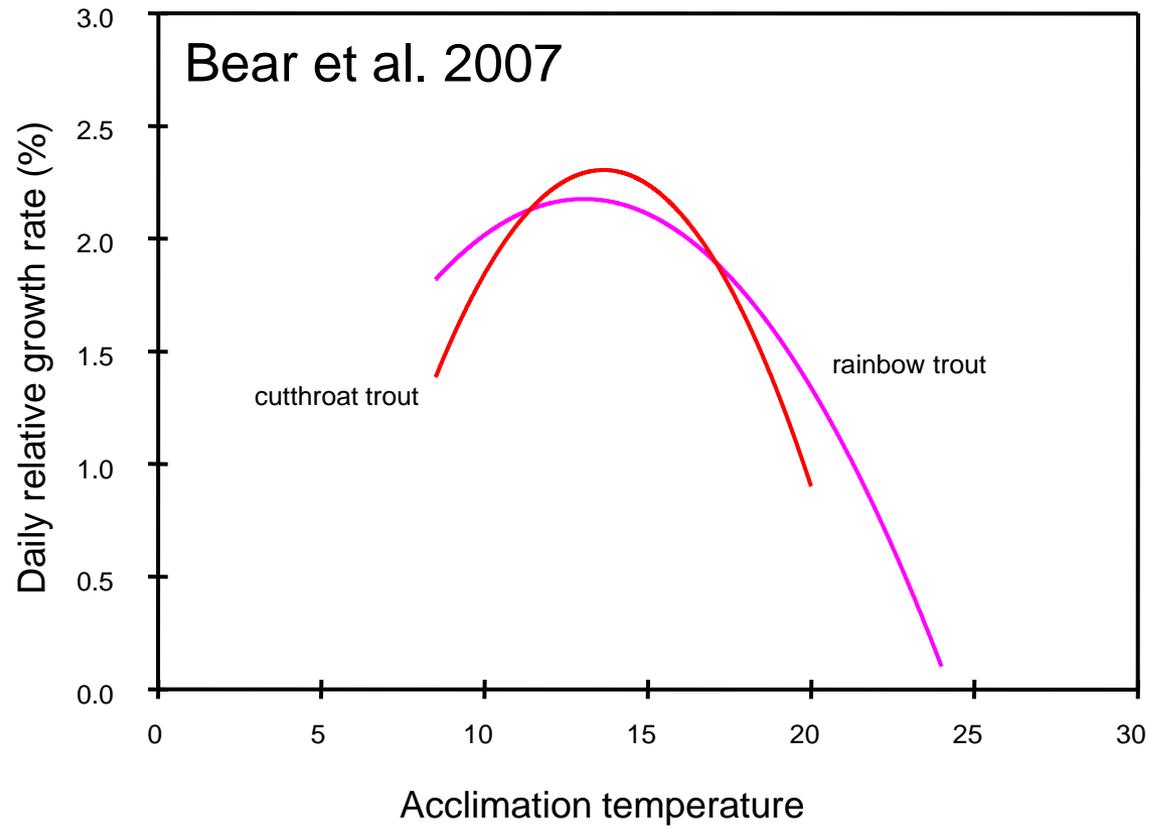
Take Home Message

Under conditions simulating strenuous exercise, adrenergic stimulation plays a critical role in maintaining cardiac performance, raising the threshold for cardiac collapse to hypoxic levels similar to those seen *in vivo*.

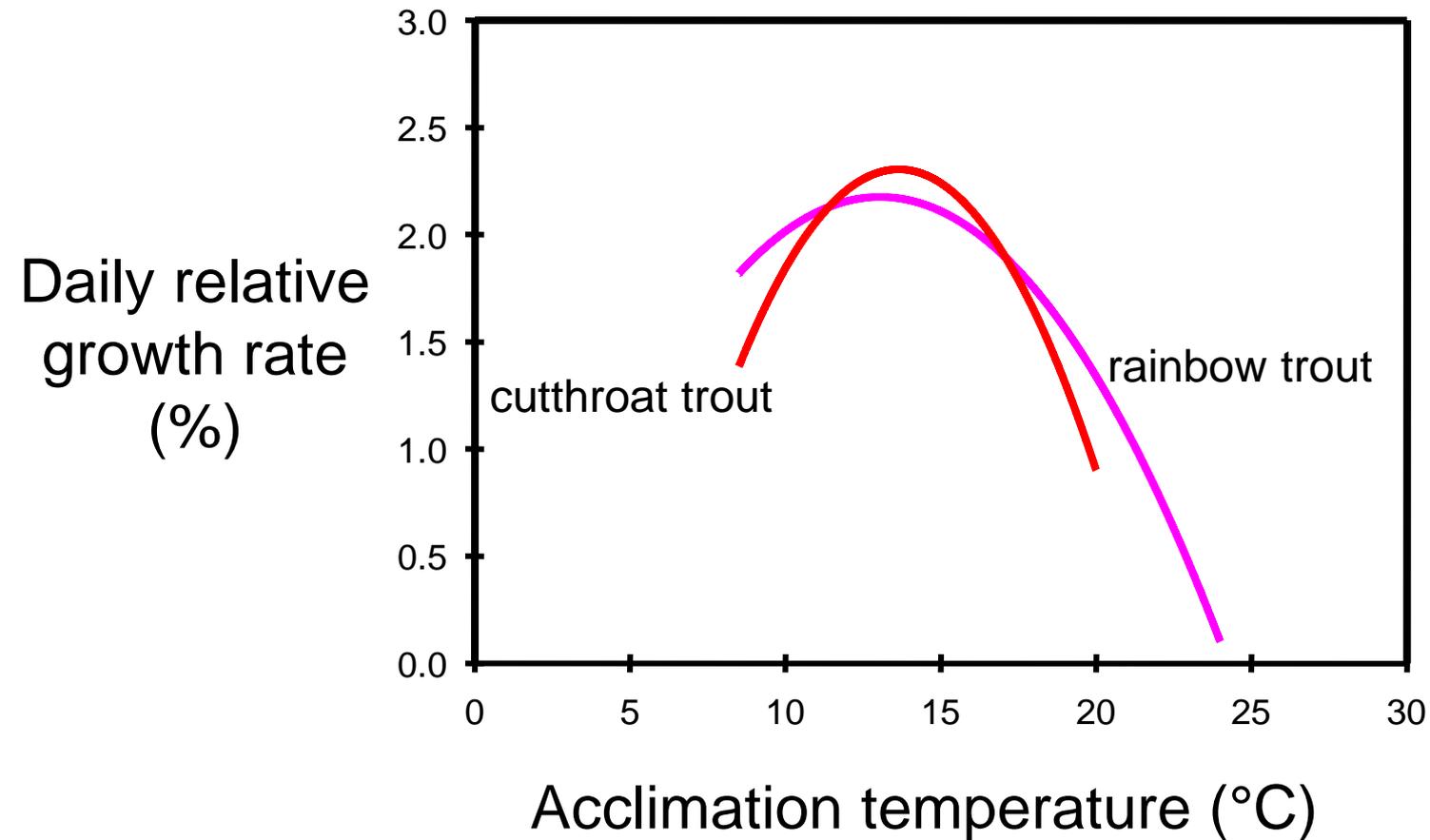
References
 Farrell AP, MacLeod KR, Chanvey D (1980) Intrinsic mechanical properties of the perfused rainbow trout heart and the effects of catecholamines and extracellular calcium under control and acidotic conditions. *J Exp Biol* 125:343-347
 Perry SF & Reid SD (1992) Relationship between blood O₂ content and catecholamine levels during hypoxia in rainbow trout and American eel. *Am J Physiol* 263:R240-249



Bad graph versus better graph



Bad graph versus better graph





Delivering your presentation

- Speaking style: pacing, tone, inflection
- Speak naturally. Be yourself.
- Be enthusiastic
- Consistent language
- Respect the time limit!
- Make eye contact
- Body language
- Rehearse but don't over rehearse!





SHARC Lightning Talk

- All talks in one session (~40)
- Format: 1 minute 1 slide
- Awards: Top Lightning Talk
Honorable Mention
People's Choice
Top Overall (poster + lightning)





SHARC Judging Criteria

- Slide design (organization, appearance)
- Presentation
 - Flow
 - Comprehension
 - Pacing
- Clear message
- Engaging



First name Last name

Your presentation title

Program: (e.g. Northern Medical Program)

Authors: (Author names as submitted on your registration form)



Guidelines

- Do not resize the slide or adjust the page margins
- The blue box below will be replaced by a countdown timer. Any images/text on this area of the slide will be obscured.
- We suggest leaving a 0.25" border of clear space on the slide to avoid the possibility of any images/text being cut off during projection. The grey box outlines this suggested margin but should be removed prior to submission.
- If you wish to use text we recommend a minimum text size of 24 pt and suggest using Arial, Calibri or a similar common font to ensure compatibility when your presentation is uploaded to the computers in the event room.
- No animations, sound or other dynamic content. Static images/text only.

1 min timer
will go here

Resources & Contacts

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