It would be nice to show a movie of crayfish tail flip and of neural activity But might take too much time for this talk. Maybe good for longer talks to have some movies.

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It is not a gel but Sylgard to stick pins in to hold crayfish.

Maybe in future have talking head in front end and then full screen of PPT slides then close with talking head as some of the text is covered in ppt.

But I realize this is just for practice for current meeting.... But if making YOUTUBE educational content don't have talking head the whole time.

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Presentation is terrific! Good pace, logical flow, slides are tidy.

I want to comment on the conclusions and give some suggestions for the habituation graphs.

Conclusions-

Here is the most important thing: the conclusions are written like results and they don't come back to the environmental problem of nicotine in the streams.

A few cigarette butts in a stream would probably not raise the concentration of nicotine to several mg/L. So I think that what your data show is that low concentrations of nicotine may not kill the crayfish directly, but it affects their behavior, heart, and respiration by modulating nervous system function. This could indirectly affect them. The fact that crayfish exhibit physiological responses to nicotine is also noteworthy because crayfish are a powerful model organism for understanding how neural circuits work. If nicotine also affects identified neurons in the lateral giant circuit then we can determine how it affects the physiology of single cells.

>Question

You show heart rate changes in response to sensory stimulus, how do you think this happens? Why do you think this happens, i.e., is this adaptive or maladaptive? Your data show that nicotine decreases this response, how do you think that happens?

Habituation-

> Introduction

Give a little more description about habituation when you begin discussing this part of the project. For example- habituation is mechanism of cellular learning that allows the animal to ignore repetitive irrelevant stimuli in favor of novel important stimuli. I wanted to determine if sensory-induced heart rate pauses exhibit habituation.

> Results

In the tail flip figure and in the heart rate figure it would be good to have stimulus number on the x-axes instead of time.

How many animals were tested for the heart experiments? If one, the data are fine, if more than one, you can normalize the data to the length of the first response in each animal and plot the average normalized response for each stimulus.

Lastly, even if E-cigs aren't safer (jury is still out, appears that they affect gene expression in a similar way as normal cigarettes- http://www.nature.com/news/e-cigarettes-affect-cells-1.15015?WT.ec_id=NATURE-20140410), at least they don't generate cigarette butts!