

How to Give a Scientific Elevator Pitch

About

The ability for scientists to effectively communicate their findings to the lay public is extremely important, now more than ever. Scientific elevator pitches are brief (~90 sec) monologues that aim to describe yourself and your credentials, the scientific problem you are attempting to solve, your methods, and importantly the significance. The practice of preparing an elevator pitch from start to finish can help aid in manuscript preparation, full scientific presentations, interviews, and knowing the elements can help during ad hoc question and answer periods.

Various components of Elevator Pitches

Part 1: Who are you, and why should I care about what you have to say?

1. Name (Ex. Mary Sanders)
2. Type of job (Ex. Postdoctoral fellow)
3. Place of work (Ex. The University of Toledo)
4. Project or subject area of work (Ex. Breast cancer research)

Note: Effectively providing buy-in to who YOU are and your credibility is just as important as your explanation of your research. Would you buy a used car from someone who appeared to know nothing about cars? No.

Part 2: What are you doing and why are you doing it?

5. **Background:** What is the current state of knowledge in your field? 1-2 sentences
 - *Note: Start your background at the most specific place possible given your audience's level of knowledge. Do not elaborate for more than 3 sentences.*
6. **Gap in Knowledge:** What is not known or still a problem in this area? 1-2 sentences
7. **Purpose and Hypothesis:** What are you trying to accomplish with your work? 1 sentence
 - *Note: Your purpose should squarely address your gap in knowledge. Your hypothesis is what you expect to find. If you don't have a specific hypothesis, you can say "I expect that my screen/analysis/etc. will provide insight into XYZ"*
8. **Approach or Methods:** How are you trying (or will you try) to accomplish your purpose and test your hypothesis? (1-3 sentences)
 - *Note: Be careful to replace scientific terminology (i.e. jargon) with layman's terms. Do not dive too deeply into details here.*
9. **Recent or expected findings or conclusions:** What's happened so far? 3-4 sentences

- **Note:** *The findings should be a result of the methods that you performed and described above, which directly test the hypothesis that you stated in order to fill the gap you originally described. If you have enough findings to justify a conclusion, then that can also be stated. If not, then simply explain your findings and what they may suggest.*

Part 3: Why should we care, and what does it all mean?

10. **Significance and implications:** What will be better for people or science if you accomplish this? 1 or 2 sentences

- **Note:** *Recheck your gap and purpose to make sure your statement of significance is in sync with them. Your speech should all be tied together in a 'significance sandwich'.*
- **It's important to understand that Significance, Purpose, and Implications are not synonymous.**
- *Significance = overall importance of the study for the broad research area or field. This leads you to your research.*
- *Purpose = what your investigations themselves will accomplish, such as understanding a pathway or mechanism*
- *Implications = what you can expect to come from the information that you generated to improve people's lives or advance science, such as moving closer to personalized cancer care, i.e. what does it all mean?*

11. **Future Directions:** 1 or 2 sentences

- **Note:** *What is the next step in the research process? If you did in vitro work, will you move it in vivo? Will you test another drug? This is specifically tied to the research question, you're your career progression or publication plans. This should show a progression in achieving your goals; should be related to everything you've just said.*

Helpful Strategies

- **The importance of being clear.** The purpose of this is not to impress upon the listener how much work you've done or how smart you are by confusing them. If anything, intelligence is most often conveyed by your ability to effectively communicate your point to the listener, which generates buy in, trust, and intrigue.
- **Get to the point quickly:** Do not ramble on about background information because you think that the listener is not familiar with your field. Instead, share only the information that is absolutely critical for them to understand. Don't spend too much time on any one particular element of the speech. Cut out fluff words that do not add meaning, significance, or understanding. Analogies are a great way to relate an esoteric field to the lay public.
- **Make sure the components connect to one another.** Your 'story' should lead the listener down a path where they can almost anticipate what you'll say next. All components must

connect to one another. The methods should address gap, significance and conclusions should be drawn from the experiments you did and the resulting findings.

- **What are YOU doing:** This speech is unapologetically about what YOU are doing in the context of the greater laboratory. Avoid “We”. Get comfortable with saying “I”.
- **Order:** The elements of the pitch do not have to be in a particular order. Do what makes the most sense for you and what comes the most natural.
- **Preparation:** DO memorize your pitch, and the various elements of it. DO always bring a notecard with your pitch written out to have in your back pocket, just in case you need it. DO rehearse your pitch several times and strategically use hand gestures, voice inflection, and tone changes as appropriate.
- **Virtual competitions:** Standing is always better, where half of your body can be seen in order to visually capture all of your hand gestures. Rehearse your speech in front of a friend via zoom to test how your microphone sounds to ensure that you aren’t too far away from the mic.

Sample Elevator Pitch

[Hook] Imagine you're a cancer patient. You have finally won your battle and are in remission, when seemingly out of nowhere your arm starts to swell up so badly that you can't move it anymore, and it's getting worse every day. Now, what if this could all have been prevented with a simple blood test? **[Who]** My name is NP, and I'm an undergrad intern working to find a better way to address problems caused by lymphedema. **[Background]** Lymphedema is a condition that affects around 1 in 1000 Americans. It disproportionately affects people suffering from cancer who receive treatments that impact the lymphatic system, such as breast and head & neck cancer. **[Significance]** Early detection of lymphedema provides the potential to treat and therefore prevent worsening symptoms, alleviating discomfort, potential incapacitation, and saves millions of dollars in treatment costs each year. **[Gap]** Unfortunately lymphedema can't be detected until your limbs are already swollen, sometimes to the point of incapacitation and pain, thus making it more difficult and costly to treat. **[Purpose]** I believe that there's a better way to detect lymphedema—even before it develops by looking for clues within the patient's bloodstream. **[Methods]** To that end, I obtained blood samples from patients and analyzed the levels of particular proteins within their blood to see if any proteins associated with inflammation were elevated. **[Findings]** In fact, I've identified several inflammatory molecules that are elevated in patients before they developed lymphedema. **[Implications]** This means that a simple, inexpensive blood test could be the only procedure required to predict whether a cancer patient may develop lymphedema. **[Future work]** Going forward I will analyze more patient blood samples to see if elevation of these particular inflammatory molecules holds true in a larger population. If it does, a revolution in quality of life for cancer patients could be on the horizon.

Worksheet for Elevator Pitch

Part One: Who are you?

Part Two: What are you doing and why are you doing it?

BACKGROUND:

GAP IN KNOWLEDGE:

PURPOSE:

HYPOTHESIS:

METHODS:

FINDINGS:

Part Three: What will be the outcome of what you're doing?

CONCLUSIONS (if applicable):

SIGNIFICANCE:

IMPLICATIONS:

FUTURE DIRECTIONS:

Additional Resources

- [Orai](https://www.oraapp.com/) rehearsal application. "Orai will coach you to reduce filler words, speak clearly, and at a good pace." <https://www.oraapp.com/>
- "10 Ways to interact with audience members while you present." <https://www.duarte.com/presentation-skills-resources/how-to-interact-with-audience-members-while-you-present/>
- "Public speaking lessons from the world's greatest TED talks." <https://www.forbes.com/sites/carminegallos/2014/03/04/9-public-speaking-lessons-from-the-worlds-greatest-ted-talks/#154455484a9d>
- "The surprising secret to speaking with self-confidence." Caroline Goyder's TED-x talk on stage presence. <https://www.youtube.com/watch?v=a2MR5XbJtXU>