Three-Minute Research Story
Trainee Materials

Learning Objectives
Trainees will:

- Practice communicating science to a general audience in three minutes or less.

The purpose of this assignment is to practice oral science communication skills by crafting and delivering an elevator pitch that communicates some sort of scientific research in a short, concise, but engaging manner to a specific audience.

The intent of an elevator pitch is to get someone interested in what you have to say and to engage in further discussions, not to tell them everything there is to know.

The assignment: Prepare to communicate a piece of scientific research (most likely your own) to a specific audience in three minutes or less.

At the start of your talk, please state your name, intended audience and brief intent of the message (eg. informative or persuasive).

Strategies you may use to craft your elevator pitch:

1. Outline four key topics: the problem, why it matters, potential solutions and the benefits of fixing it. List all the points that you might want to make under these topics, and then winnow them down to the most important ones.

2. Follow the basic structure of a story (eg. set-up, complicating action, development, and climax): set up your subject, give it a source of tension, reveal a possible solution, and combine all of the content to release the tension.

Additional Resources to Help You Get Started:
http://www.nature.com/naturejobs/science/articles/10.1038/nj7435-137a
http://www.the-scientist.com/?articles.view/articleNo/40702/title/Scientific-Elevator-Pitches/

Elevator Pitches for Scientists: What, When, Where and How
http://thepostdocway.com/content/elevator-pitches-scientists-what-when-where-and-how
Contributed by Uyen | August 2013

Keep in mind that most elevator rides are less than one minute. Therefore, the pitches should be between 30-60 seconds. You may think that scientific research is too abstract to explain in one minute and you would be absolutely correct! It is important to remember the purpose of an elevator pitch is to get your listeners interested in learning more about your work by agreeing to schedule a second meeting with you.

Here are my suggestions for preparing an elevator pitch for scientists. For biologists, it is best to express the relevance of your scientific research in the context of disease states. If you are studying the function of a protein that has a connection to a health condition – deliberately state this in your elevator pitch. Start by asking your listeners a simple question, "have you heard of disease X?" The answer will allow you to gauge the listener's level of understanding of your research area. This is critical to delivering a message your audience will remember. How to proceed with your elevator pitch depends on the response you receive. If the answer is "YES" then follow by explaining your research. However, if the response is a "NO" it is an opportunity for you to concisely describe the disease state, the statistics on people affected by the condition, and whether a cause or cure is known. Proceed by describing how your research will bring us closer to an understanding of either the cause or cure for the disease.

I will use my own research as an example. Below is a modified abstract for a research paper I submitted for peer-review.

"Statins are potent inhibitors of cholesterol biosynthesis and are clinically beneficial in preventing cardiovascular diseases. Independent of their lipid-lowering effects, these compounds have been shown to improve endothelial function and inhibit the thrombogenic response. Accumulating evidence suggests an important role of the mitogen-activated protein kinase ERK5 in eliciting the beneficial effects of statins in the endothelium. However, despite the therapeutic values of these drugs, muscle-related toxicity limits their use in some patients. Here, we explored the mechanism of statin-mediated transactivation of ERK5 in the human endothelium with the goal of identifying compounds that activate the ERK5 pathway but are non-toxic to C2C12 skeletal myofibers, a cellular surrogate model to study muscle myopathy. We demonstrate that statin activation of ERK5 is dependent on the cellular reduction of geranylgeranyl pyrophosphates which are isoprenoid precursors critical for the post-translational modifications and trafficking of GTPases. Furthermore, we found that the combination of drug A and drug B mimicked the statin-mediated transactivation of ERK5. Drug A and B together recapitulated the beneficial effects of statins by transcriptionally upregulating anti-inflammatory mediators such as genes X, Y, and Z. Finally, C2C12 skeletal myotubes treated with both Drug A and B failed to cause the morphological and cellular changes that have been recognized as biomarkers of statin-associated myopathy. Hence, the combinatorial Drug A and B drug regimen provides a promising alternative avenue for activating the ERK5 pathway for the enhancement of endothelial function."

I follow three simple steps to prepare my elevator pitch: **(1) eliminate jargon terminology; (2) draft the elevator pitch on paper; (3) practice the elevator pitch out loud with friends and family members.**

Below is a version of a one minute elevator pitch I used in the past for a technical audience (other scientists).

Do you know that 32 million Americans are taking statins for their high cholesterol? While statins have been shown to improve the heart function by reducing blood cholesterol levels, one of the major side effects associated with long-term use of statin is the development of muscle pain. My research focuses separating the cellular pathways leading to the beneficial effects and muscle toxicity mediated by statins in order to identify new drug molecule(s) that only activate the pathway good for the heart. Using various cell-based assays, we have identified a drug combination that mimics the good effects of statins but are devoid of the muscle toxicity associated with their used.

Although it is simple, this short pitch actually took me three hours to prepare. Initially it will sound scripted, but with practice your elevator pitch will naturally slide off your tongue. I recommend having multiple versions of your pitch. Start by creating a one minute version for a technical audience. Then, modify it for the lay audience and trim it down to get a 15 second introduction.