



cihr synapse

pocket guides

a guide to presentations and demonstrations



Canadian Institutes of Health Research
Instituts de recherche en santé du Canada





ON PRESENTING

You've agreed to make a presentation to a science class at your local high school.

Now what?

First of all, thank you. By committing yourself to giving your time and expertise, you are helping to foster young people's interest in health research and providing them with a role model of a "real-life" scientist.

But having made that commitment, there you are, standing in front of a roomful of possibly the toughest critics out there – high school students.

You can continue to stand there, like a deer in the headlights, as they stop paying attention and start texting their friends. Or, you can proceed to keep them intrigued, interested and, above all, attentive.

This guide will help you. We recognize that making presentations is not necessarily something that comes naturally to everyone. So the Canadian Institutes of Health Research has consulted with some of the top presenters in Canada – and even with a few “presentees” – to find out what, exactly, makes a great presenter.

I’m already way too busy –
why should I take this on too?



The research is clear – interacting with effective role models can make a huge difference to young people. Direct, personal contact can inspire young minds to focus their careers on health research. Conveying the excitement of science and what you do helps to awaken young people to the life-changing potential of a career in research.

It’s not all one way, either. Young, curious minds can also be a refreshing change from your lab or office and a reminder of why you found science so exciting in the first place.

As well, it’s in your own interest, particularly if you’re a relatively new investigator. Universities

and research institutions today often look for evidence of community involvement when making hiring or promotion decisions. Some granting agencies now require an outreach component in grant applications. In short, spending time in your neighbourhood classrooms can look good on your CV and further your research career.

So what makes a good presentation?

There are all sorts of elements that make up a good presentation. These are just a few of them:

- **A hands-on experience:** The key to a successful presentation isn't so much what you do – it's what your audience does. Remember, the vast majority of people learn better by doing than by being told what to do. And if, for safety or other reasons, having the students do the activity themselves isn't possible, go for the next-best option – demonstrate.
- **The sound of other voices:** Yes, you're the most knowledgeable person in the room about your subject. But let others have the floor as well. Brainstorm, so others can share what they know. Ask a lot of questions.

Make sure that you're listening – and that your audience sees that you're listening – by restating the question, answer or idea in other words.

- **Relevance:** Obviously, your presentation is going to be relevant to the curriculum – otherwise, you wouldn't have been invited in the first place. But students learn best when they feel the subject is relevant to them as well. Find ways of making connections between the topic you are presenting and the students' lives.
- **Opportunities to succeed:** The “stars” in a class will undoubtedly shine no matter what you do. But, in designing your activities and asking questions, try to include everyone in the group. Help students get it right and give them the confidence that they can do it.
- **Simple language:** You know the language of your field. But to a non-expert, this language can sound like jargon and create barriers to understanding. Avoid using overly technical terms and, when you can't avoid them, make sure you define them in a way that non-specialized minds can grasp.

The most important element – and surprise!
It's not your subject matter



You've presented your material – it's clear, it's logical, you've used simple language and tried to involve the class. But you don't think they "got it" – and you certainly don't think they enjoyed the presentation. Now you're wondering what you did wrong.

It's not what you **did** wrong – it's what you **didn't** do. You didn't account for all the different learning styles that exist among students. It's called the theory of multiple intelligences.

According to this concept, there is more than one kind of intelligence; the most common version of the theory suggests there are eight, ranging from linguistic and logical-mathematical intelligence, to musical or interpersonal intelligence. Research shows that, although we each possess a mix of all eight, most scientists and researchers have a tendency toward logical-mathematical intelligence. You respond well, not surprisingly, to numbers and logic.

The problem is, your audience may include different kinds of learners. Some may learn best from visuals, like graphs, charts and videos; others may need to hear the material, while yet others need to work with their peers to absorb what you're teaching. For you to give a successful presentation, you need to accommodate all these different types of intelligences.

There are many guides on how best to teach to different kinds of intelligences. There isn't the space to go into them all here, but a quick Internet search should put you on the right path. If you're really in a bind, just remember – present your material in a variety of ways.

**"We always have this
Aha! moment
in our Science with
Impact workshops as
participants learn about
multiple intelligences
theory. They've never
thought about how other
people prefer to get
information."**

BONNIE SCHMIDT
President
Let's Talk Science



Tips for success



You've done everything you can to prepare your presentation. Now, you want to make sure it's a success. Here are some tips:

- **Know your audience:** This can be as simple as getting a list of names and a seating plan from the teacher, so you can address students by name. Even better, find out from the teacher before your presentation how students learn best, their likes and dislikes and any particular challenges they present. And make sure your audience knows you – write your name on the blackboard or somewhere equally visible.
- **Show your interest:** Kids are smart – they know when you're interested, both in them and in your subject matter, and when you're just going through the motions. And if they sense you're just going through the motions, they won't even bother doing that much.
- **Stay focused:** You're not going to cover the entire curriculum in one presentation, and it wouldn't be a good idea to even try. Pick one or two key points that you want to make, but approach each of them from a variety

of perspectives to address the different intelligences mentioned above.

- **Tell a story:** Everyone loves a story – so tell one! An anecdote about you can illustrate how you ended up where you are and make you seem more “human” to your audience. And don’t forget the storyteller’s best weapon: props and costumes! Bring some with you – even something as simple as a lab coat can make your presentation more dramatic!
- **Keep an eye on the clock:** The bell will ring whether you are finished or not and your audience will leave for its next class. Be ready to cut something if your presentation ends up taking longer than you planned. Conversely, everything could go so smoothly that you are left with extra time. Have something in your back pocket that you can use to extend their learning – and the time – if it’s needed.
- **Go beyond:** Yes, you’re there to make a presentation on a specific topic. But this is also an opportunity for students to “hear it from the horse’s mouth” – talk to them about being a scientist and focusing your career on research. This could be one of the few, maybe even the only, opportunity many

students will have to hear about careers in this area. Who knows whom you could be influencing!

- **Safety first!:** You've planned your hands-on activity, and you've made sure the resources are there in the classroom for you. But don't forget that safety is always paramount. Check to see if there are any restrictions that affect your presentation. And make sure to review all safety procedures with the class.

What if I can't answer their questions?

Relax – you're not perfect. Admitting you don't know something and discussing how you might go about finding the answer can be an important lesson for students. And if you promise to find the answer and get back to them – make sure you do! There's nothing that can boost a student's self-confidence like having a busy professional take time to respond to his or her question.



GUIDANCE FROM THE OTHER SIDE OF THE DESK

A group of Grade 11 biology students has thought about what they like – and what they don't like – when someone comes to their classroom to make a presentation. Here's what they had to say:

DO use visual aids – it's easier to understand what you're saying when you don't rely on words alone.

DO show your interest. It's obvious when you're not interested in being there. It makes the presentation go really slowly and the students won't want to be there either.

DON'T just deliver a lecture. It's discouraging when yours is the only voice being heard.

DO take lots of questions. It shows that you're interested and provides the students with an opportunity to provide input.

DO speak at a level that most people will understand. But **DON'T** dumb it down so much that it sounds like you're talking to young children.

DO give the students something tangible. High school students love getting "stuff" – and if it has a website address printed on it that they can go to for more information, all the better!

DON'T pretend you're a contemporary of the students – they know you're older than they are and will just think that you're trying too hard.

DO have fun!



“The ones that are most interesting are the ones who run out of time.”

Grade 11 student
Lisgar Collegiate Institute
Ottawa



“I hate when people talk to you like you’re six years old – but don’t treat me like I’m a 40-year old with a PhD either!”

Grade 11 student
Lisgar Collegiate Institute
Ottawa



Help! I need more guidance

You know your stuff cold, no problem with that. But there are two parts to any presentation – the content and the audience. You're the content expert; after all, that's why you've been asked to make the presentation. But the teacher is the audience expert. Teachers know their students, understand their daily routine and have experienced how they learn best. The teacher is your partner – take full advantage of it.

Find out from the teacher what the facilities are – what kind of equipment the classroom has, how much time you'll have for your presentation, even where to park when you arrive at the school. Find out what the teacher hopes to achieve by having you visit, what the classroom rules are, what methods work best with the students in the class. Find out how your presentation fits into the curriculum and if there are specific questions the teacher or students would like to have answered.

This is great – but I still think I need more



You're right – this guide is a good introduction, but there is more help out there. Let's Talk Science, a national organization that is a leader in reaching youth with high-quality science education programs and products, is a good place to start.

Let's Talk Science, with financial support from CIHR, has developed a full training workshop, called **Science with Impact**, that provides scientists and researchers like you with effective strategies and information to support your outreach efforts. The workshop will give you more information about educational theories, help you learn strategies that build on these theories, and give you a step-by-step guide to help you design an appealing and effective presentation.

Watch for a Science with Impact workshop coming to a university or college near you.

I loved it! I want to do more

That's great! Because there is any number of ways you can continue your outreach to high school students. You can go on to judge local science fairs. Or you can welcome particularly interested students into your lab to work on their projects there. You can even offer long-distance mentorship, by phone or e-mail. Whatever you choose to do, there's a CIHR Synapse guide to help you. Check out the first two guides in [this series](#): [A Guide for Researchers Judging a Science Fair](#) and [A Guide for Researchers Acting as Mentors](#).



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