Let’s face it; reviewing, evaluating, or even sitting through faculty and student talks, poster presentations, papers, theses, and dissertations can be an excruciating experience. Whether you are an undergraduate or graduate student or teaching ecology, or you are a full-time researcher or practitioner, the following article provides solid advice and tips for all of us. Thanks to Jamie Smith (deceased), Judith Myers (University of British Columbia, Department of Zoology, Vancouver, BC, Canada) and Isla Myers-Smith, University of Alberta, Department of Biological Sciences, Edmonton, Alberta, Canada), we can all benefit from the following article on effective communication.

If you have created handbooks or guidelines for written and/or oral communications, please feel free to submit them to me for publication in this column.

Tips for Effective Communication in Ecology

Jamie Smith, who passed away in 2005, was a population ecologist and a dedicated teacher and communicator. He put together advice for writing a graduate thesis and giving a talk. We have recently added guidelines for presenting a poster. In his honor we have compiled these notes to spread his sage words of advice to the next generation of ecologists.

Part 1. Giving a Research Talk

Giving a good research talk is a useful skill for both undergraduate and graduate students and a necessary skill for those with graduate school or professional aspirations. The following advice applies to the presentation of your ideas at committee meetings, seminars, or at scientific meetings.

Organization

Plan your talk as a series of sections, each with a distinct purpose and with clear links between sections. You can start your talk with a “menu,” and notify the audience when you move from section to section. If you get into time trouble, consider dropping an entire section. Most talks contain the following sections:
Introduction

This is a statement of the research “problem,” your talk objectives, and a background of the work of others. Many speakers err by making this too short, or even by omitting it. For a general audience, this section may approach half of the talk; a good rule of thumb is to make it 25%.

Materials and Methods

In this section, you have to walk a fine line between boring the audience with details, and skipping over essential information. It’s better to be too brief than too detailed (people can ask you for more details in the discussion period).

Results

Talk only about the results that contribute to your story. Talk about preliminary findings, if you think they are of interest. This can stimulate discussion.

Take-home message

This should follow naturally from the statement of the problem in the introduction. If it doesn’t, the problem wasn’t stated clearly. Include speculations and suggestions for future work here. Don’t be afraid to leave loose ends; these can promote a dialogue with your audience.

Some talks fall naturally into two or more major parts, each of which has most of the above sections. If a talk gets too complex, however, it becomes hard to maintain a strong story line.

Visual aids

No matter how inexperienced or nervous you are as a speaker, good visual aids will anchor your presentation. Computer-generated graphics created with programs like Microsoft PowerPoint are also standard. The following basic rules apply:

1) Choose your template carefully. A plain white or other pale slide has several advantages (e.g., more space is available, lettering is easier to read). Patterns or photographs as backgrounds should be avoided (see Fig. 1).

2) Choose an easy-to-read, block font such as Arial, rather than a serif font such as Times New Roman. Use LARGE lettering (>28 point). Check to see that your smallest text can be read easily from the back of the room in which you will give your presentation.

3) Choose the color of your text and background carefully. Black/dark blue text on a white or light background optimizes contrast and is easier to read than the old PowerPoint default of yellow text on a blue background. Dark backgrounds in dark rooms can put your audience to sleep. Combinations of either pastel (e.g., yellow on pale blue) or dark colors (e.g., red on blue) may look good on your computer screen, but are disastrous when projected. Don’t forget that some people are red/green color blind.

4) Keep each visual aid simple. A good rule of thumb is to make ONE point per aid. Only write as much as you need to make that point; complete sentences are not required. In the final check of your talk eliminate all unnecessary words.
5) Use colors, arrows, cartoons, and bullets to highlight points.

6) Use graphs rather than tables. Label axes clearly in large letters. Convert your figures to image files or change your presentation to a pdf to prevent formatting problems and compatibility issues. Small tables are OK, but avoid tables with more than 3 rows and 3 columns. Do not cut and paste complicated tables from papers. Instead rewrite and simplify tables, highlighting the most important pieces of data.

7) Avoid bells and whistles like moving objects or bulleted statements that appear only when you click them. Use informative video/audio clips only when they will run on the technology that you will have available for your presentation. It can be effective to use multipanel graphics, adding one panel at a time, but make sure figure labels are legible.

8) When “borrowing” photographs from the internet, credit the photographer/source.

Fig. 1. The difference between a difficult and easy-to-read slide is really striking. It is worth the time to fine-tune the visuals, to allow you to focus on the rest of your talk (photo credit: Evan Kane).

Speaking skills

Listeners will expect novice speakers to be nervous, and will make allowance for this. Speak slowly, clearly, and simply, in the main, but more flowery language can provide occasional drama. Make your vocal delivery
interesting by varying your tone of voice. Express ENTHUSIASM for your topic. Address your remarks towards the back of the room and make eye contact with members of the audience. Speak louder than in normal conversation, and check that you can be heard. In your first talks, it may help you to write out complete notes, or a list of prompts, but don’t refer to such notes more than necessary. If you read your talk, your voice will be a monotone and the pace too fast. People will lose interest in what you are saying. Instead, use your visual aids to prompt you on what to say next. Don’t read word-for-word from the screen. Remember that your audience can read faster than you can speak.

Don’t pace about the lecture room or play with objects such as pens or loose change in your pocket. If you choose to use a laser pointer, use it sparingly and hold your hand steady. A wooden stick, your hand, or a description of the slide is just as effective. Ask your colleagues to listen to a practice of your talk and offer suggestions for improvements. Time a practice talk, especially if it is for a meeting or exam. It is fine to talk for less than your allotted time (releases more time for questions), but it always offends if you talk for too long. Keep the pace even; a common fault is to start slowly and rush towards the end. Humor can improve a talk, but beware of offensive comments and jokes.

Technology issues

Projectors vary in image brightness and color quality. Visuals that look fine on a good-quality projector may not project well on a poor-quality one. Beware of Mac/PC and software incompatibility problems, although these are getting to be a thing of the past. The best way to be sure your presentation is going to work as you plan is to do a test run in the same room and using the same equipment as you will have on the day of your presentation.

Part 2. Presenting a Poster

Posters are for communicating visually, and are not short papers. They should be designed for rapid communication to tired meeting attendees. Make your poster a standout and people will remember it (Fig. 2). If you wish to include more details, you can make an accompanying handout for viewers to take away.

Criteria for good posters:

1) Keep it simple. Don’t use too much text. Use a large block font and bold headings, your poster should be easy to read from 2 m away.

2) Plan carefully and decide what message you want to get across and which pieces of data will best support this message.

3) Use simple, clear graphs, pretty pictures, and remember that “a picture or figure is worth a thousand words.”

4) Make clear the flow among sections of the poster. Use headings, numbered sections, boxes, and arrows to draw your reader through your story.

Organization

You can organize your poster as you would a paper with an Introduction, Methods, Results, and Conclusion sections; however, you don’t need to stick to this format to get all the necessary information across.