Chapter 5

Oral Reports

5.1 Goals—clear oral presentation

Oral reports are often a form of advertising—either internally, within a company, where people from different departments see projects displayed by their creators, or externally, where a company presents something to people from outside the company in an attempt to sell it. Oral presentations are often an opportunity for people who read your reports—senior engineers, managers, sales staff—to see who you are and how you work. This means they’re as interested in you, and how you handle yourself, as in the material you present. Therefore, present a problem and a solution with just enough technical detail to make your point. What you want to do is let these people know how competent you are, and what sorts of work you do. You will be showing them your thinking style, your working patterns, and your problem-solving ability. With this in mind, try to put on the most professional, persuasive, confident display of your project that you can.

5.2 Meeting the expectations of the audience

Your oral report is a presentation of the material that you know well—in the past, this has generally been related to the final written report, but the growth of the class has made scheduling all the oral reports at the end of the quarter rather difficult. Instead, we will do three 5-minute oral reports at the beginning of (almost) every class. There will be a sign-up sheet for presentation slots.

You will have five minutes to present your report (again, the increase in size of the class has necessitated shrinking the time per presentation). You may use less time, but you may not exceed the limit. In industry, oral reports are often given before consultants, who charge extravagantly for their time; therefore, you must learn to budget the time allotted you and not exceed it. You will know in advance precisely when, day and time, to the minute, you will be expected to give your report. Be ready to go as soon as you stand up—don’t waste time with preparatory goofing around, as the clock starts ticking even if you aren’t ready.

Rehearse your talk ahead of time. Practice turning transparencies, advancing PowerPoint slides, writing on the blackboard, or using whatever visual aids you choose.

5.3 Choosing your topic

In choosing your topic for your oral presentation, pick some technical issue or problem with which you are already to some degree familiar, and would like to learn more about. Picking some topic about which you are largely ignorant will make it impossible for you to do a good job with this assignment. Although your talk can be on the same topic as your final project, it need not be. We would like for the talk to involve some library research, even if your final project is of a type that does not require it.

We will also discuss appropriate topics in class.
5.4 Writing process—finding, organizing, composing

The process of writing this assignment can be broken down into four steps: the library search, organizing the information, preparing the visual aids, and practicing the talk. These steps are similar to those used in preparing any technical presentation: oral, written, web-based, poster, or whatever. You always have to collect your facts, organize them, order them, and present them.

5.4.1 Library search

The library search itself has three steps:

1. **The topic statement.** Write a short, quick topic statement that explains what you want to research, and what you would like to know about it. Be as specific as you can, but don’t labor over punctuation, sentence structure, and paragraph structure. It is meant to get you started, and will be completely re-done later, or perhaps even thrown out. Mostly you are trying to generate the key words you will need for on-line data base searches and for index use. A couple of paragraphs should be sufficient.
   
   Be careful about the breadth of your topic. If you choose too narrow a topic, you’ll have difficulty finding information. If you choose too broad a topic, you’ll never be able to organize the overwhelming material well enough to say anything. You should probably start with a slightly broader topic, and focus on some narrower part once you have found some material.

2. **The library.** Take your topic statement and head for the library, and use your key words (or key terms) in the manner described by the reference librarian in the guest lecture. Be sure to take good notes on this lecture—it is a key part of this assignment.
   
   Don’t be afraid of reference librarians if you get completely lost in the library. They have the jobs they have because they like working with students, and really do want to help you learn how to use the resources the library offers. They have more time available in the morning, however, than they do late in the afternoon, when most students seem to descend on them in desperation, so it’s wiser to get started early in the day.
   
   If you want to use an on-line index, try the Current Contents, INSPEC, or Computer Articles databases on MELVYL. The MELVYL catalog can be reached from almost any machine on the Internet (you can start from the UCSC library at http://cruzcat.ucsc.edu/), but you need to set up an http proxy if you are not coming from the ucsc.edu domain to get access to the specialized databases. See http://library.ucsc.edu/services/sluglink/ for more information about connecting from a non-UCSC computer.

   Try to find three to five articles relevant to your topic—don’t pick the first three you find, however. Find the most relevant and useful ones. Be sure you can read and understand the articles you choose!

3. **Photocopying.** Photocopy the articles you intend to use, or the parts you intend to use, if the article is excessively long.
   
   Whenever you photocopy an article, make sure you have written on the copy a complete citation for the article, so that you can attribute quotes or paraphrases. It is very frustrating to have a perfect quote, and not be able to use it because you have forgotten where you found it. Many journals and conference proceedings make this easier, by providing adequate citation information in the headers and footers of each page. A lot of journals are now available electronically, which allows you to print out clean copies with citation information—better than you can photocopy from the paper journals.

5.4.2 Organizing the information

1. **Deciding what to look for.** First, make some preliminary decisions about different aspects of your topic. You will need to decide what is most important in a talk—there is much less room in a talk than in a paper. Make a short list of these subtopics: five to seven is likely to be too many. You will need to have read through all your articles in order to make these decisions. You may change some of these subtopics later, as you go on. Some of them, at least, will be the same or similar to the key words and terms you used in your library search.
2. Locating the needed information. How you do the next step is pretty much up to you. You need to go through each article and find the information relevant to your subtopics. Here follow some practical suggestions for doing this. Taking notes from each article is the most traditional way, and was the way everyone did library research before the invention and general proliferation of photocopy machines. Copious note taking is still a very good way to proceed if the material is very new to you, since it helps you learn it.

Since you have photocopies, however, you may, rather than taking extensive notes, simply mark up the article to locate all the information you intend to use from it. There are less and more complex ways of doing this, ranging from penciled marginal marks to different-colored highlighting for each subtopic. Work something out for yourself.

3. Ordering your information. When you have located all the information relevant to your subtopics, you are ready for the next steps.

First, note any major contradictory factual or theoretical claims. You will need to address any area like this very carefully, comparing the different claims carefully and faithfully. You don’t have to try to decide who is right; you’re not an expert. What you need to do is get across to your reader what the different prevailing opinions are.

Second, find the clearest explanations for each subtopic, by comparing similar parts for each subtopic from each article.

Third, experiment (on paper) with different arrangements of the information you have found, using keywords or icons to stand for the different ideas. When you have found one that seems sensible to you, you are ready to begin preparing the talk.

5.4.3 Preparing your visual aids

Read Chapter 19 (Oral Presentations) of Huckin and Olsen. They give some good basic advice on planning and presenting an oral report.

Oral reports are not the best nor the easiest way to present technical information, because the information is difficult to assimilate, often full of statistics, numbers, equations, and so forth, which are hard to follow when given verbally. Therefore, using transparencies, charts, tables, graphs, diagrams, and illustrations can help a great deal. Don’t hesitate to use them.

Overhead projector transparencies used to be the commonest way in computer science and computer engineering for giving presentations to audiences with fewer than 100 people. There will be an overhead projector available in the classroom for your use. Nowadays, computer presentation using PowerPoint, Acrobat reader, or some other presentation software is popular, though the failure rate of laptop/projector combinations at conferences is still quite high, so savvy presenters usually carry overheads as a backup. For large audiences, computer projection has become the industry standard, and high-power overhead projectors are no longer commonly found at conference centers and hotels.

Here are some tips on using visual aids and notes:

- When using transparencies, don’t leave a blank screen, don’t flip back and forth between transparencies, and don’t cover up substantial parts of your transparency with opaque objects.

- When using computer projection, don’t waste a lot of time with gratuitous animation—reserve it for places where it will help you make a point more clearly. Learn the idiosyncrasies of your presentation software—I’ve gotten very tired of presenters saying “oops” as they accidentally advance in PowerPoint when they didn’t mean to.

- You can point to important things either on the screen (by standing to one side and pointing with your arm or a long stick), or on the transparency (by standing beside the projector and using a thin opaque object, such as a pencil). In either case, be careful that you do not block the image on the screen.

Some people use laser pointers, which makes for a very lightweight pointing device that greatly magnifies hand tremor if you are nervous. The laser pointers are also dangerous to people’s eyes if you accidentally point one at the audience—if you are going use a laser pointer, practice holding it steady and not waving it around.

When there is no laser pointer, people using computer presentation often try to use the mouse and cursor to point with. This can work well, but seems to be a major cause of accidental advances in PowerPoint.
• You may hand-write your transparencies, photocopy a black-and-white original onto plastic, or do a computer presentation. In any case, you should not have more than 10 lines of text on each slide. You should use 24-point fonts (1/3” high or larger if you are writing by hand) for standard text, and 18-point fonts for “fine-print”. Anything smaller will not be readable in the back of the room. A handy guide is that the unenlarged transparency or laptop screen should be readable from ten feet away. If you are using 35mm slides (an obsolete technology now, but still popular with biologists), the equivalent rule of thumb is that the slide should be readable at arm’s length. Use the most readable fonts you can find, not fancy, decorative fonts.

• Many speakers like to write on their transparencies as they talk, highlighting the points dynamically. If you plan to write on a transparency produced by photocopying, wipe it off with a damp rag first. This wipes off any oily residue from the photocopying process, and eliminates the static that can cause transparencies to be difficult to separate.

• The usual rule of thumb for transparencies is that you should talk about each one for one to two minutes. That means that you should have two to four transparencies for a 5-minute talk, not counting the title-page transparency (if you have one).

• You may use notes to talk from, but don’t stand up, bury your face in your notes, and read them verbatim. Write your notes in outline form, with just the major points you want to cover listed. If you’re afraid of forgetting major topics, have something on your transparencies for each one, and use them as your mnemonic device. Using your transparencies as the notes for your talk reduces your reliance on hand-held notes and increases the eye contact you have with your audience. It looks much more professional to know your material well enough not to need a sheaf of notes.

• It often helps to have a transparency near the beginning that amounts to an outline of your presentation. This will not only help you stay on track, but it will help your audience follow what you are doing and see where you are going.

• This assignment is a speech, not an exercise in reading aloud. You should be somewhat spontaneous in your delivery—the audience will be much more with you if you are. If you’re shy about looking out into the audience, pick one person to look at. It’s important not to speak to the blackboard, or the door, or the ceiling. If you look out into the audience, people will feel as if you are really speaking to them, and they will be much more receptive to what you have to say.

• You aren’t expected to present a lot of data. If someone wants all the data, he or she can read your written report. You are to give an idea, an overview, of what your project is about in your oral presentation. Be prepared to answer questions regarding specific data either with a pre-prepared transparency, or with an offer of a specific time and place when you will provide the data.

• If your report involves interpreting some complex set of data that your audience needs to see, have it ready on a handout that you may distribute, rather than writing it on the board, or expecting your audience to read it from a displayed table. Graphs are much easier to comprehend at a glance than tables, so you can usually present them on transparencies without hardcopy.

5.4.4 Practicing Your Presentation

Practice presenting your report at least once before presenting it in class. Time your talk so you know exactly how much material you can fit in, and how to pace the material. Don’t just read your notes to yourself—stand up and give the talk the way you will to the class. You will find it very difficult to speak clearly at your normal silent reading speed. Nervousness may make you speak faster or slower than in your rehearsal. Be prepared with a little extra material, in case you speak too fast.

You will probably find, if you are like most people, that you have too much material. If possible, practice presenting your report in the room where you are going to present it formally. Learn to fill the room with your voice, as described in lecture. Concentrating on the sound of your voice will also help you not to be nervous when you are presenting the report. I find it annoying at professional conferences when people get up and mumble inaudibly into a microphone in a room small enough that they shouldn’t even need a mic. Learn to speak loudly and clearly—it is a very useful skill that is easily acquired. Here are some tips for speaking loudly:
• Breathe deeply. To be loud it helps to be moving a lot of air. Practice filling your lungs by lowering your diaphragm ("belly breathing").

• Face your audience. Sound does not radiate uniformly from all parts of your head—you are much more audible from directly in front than from the side or back.

• Open you mouth. Although English can be spoken around a clenched jaw (some say English is a pipe-smoker’s language), it can be spoken loudly and clearly that way.

• Relax your vocal cords by dropping your pitch into the lower part of your register. A lot of people, when they get nervous, tighten up their vocal cords, resulting in a quiet, somewhat squeaky voice that is harder to understand. Deliberately drop your pitch into your normal register or slightly lower, to get greater clarity and volume.

• Practice outside. In an open field with no walls around you to bounce the sound off of, you have to speak louder to be heard. Practice with a friend—stand about 50 feet apart in an open area and try to have a conversation or read poetry to each other (not anything private, of course, as everyone around should be able to hear you clearly).

• Practice inside. When you are in a room, listen for the echoes off the back wall. In a room the size of a normal classroom, the echo is too soon to be heard as a separate sound, but is experienced as an extra fullness to your voice. Try adjusting your volume until you can tell whether or not your voice is filling the room—have a friend sit at the back to give you feedback. When you have a large audience, they will be making some sound, so you have to be a little bit louder to be heard.

If English is not your native language, and you find speaking without a prepared text difficult, or if you are overwhelmingly nervous about speaking publicly, it is all right to write your presentation out verbatim and memorize it. However, you must treat memorizing a report in the same way you would treat memorizing a play script. This means that you must memorize it with normal pauses, emphasis, and intonation, and take special care not to speak faster than the normal speech rate. If humanly possible, don’t do your report by memorizing a speech—it is not the best way. Huckin and Olsen have some advice and exercises for helping non-native speakers with pronunciation and intonation [HO91, Chapter 38]. Confidence in your understanding of your material, and taking your time will make up for a lot of awkward English and hyper-nervousness. So will substantial practice presenting your report.

Get enough sleep the night before. I have seen someone present a paper at a professional conference after running on adrenalin for a few days, then pass out and fall off the platform when he was asked a question.

Above all, remember that in an oral presentation, you must make each major point in several ways. The old saying about this is, “First you tell ’em what you’re going to tell ’em, then you tell ’em, and then you tell ’em what you told ’em.” Of course, using exactly the same words each time does not help comprehension—what you are trying to do is to find the explanation that works for each member of the audience, and different people in the audience will understand different explanations.

5.5 Evaluation of the presentation—form and content

5.5.1 Form

You will be evaluated on the basis of what may be generally called “professional behavior”. This means being prepared, being dressed appropriately for your audience, speaking clearly and loudly enough, making eye contact with your audience and maintaining it, handling questions with grace, using equipment and displays skillfully, and generally making your audience comfortable.

Note that being dressed appropriately for a presentation to fellow students or engineers is quite different from being dressed appropriately for a presentation to venture capitalists or the Board of Directors for a large company. You may choose what style of presentation you wish to give in class, but let us know, so that we may judge it by the appropriate standards.
5.5.2 Content

Content means having a well-organized presentation, presenting enough information to make your point but not overwhelming your audience with irrelevant detail, and being accurate about what you say. Many speakers, in their rush to get as much information as possible into their talk, lose their audiences almost immediately, and end up conveying no useful information. Pace your material to the rate at which your audience can understand it.

Some people have been taught that it helps to “soften up” your audience with a joke. Humor is valuable when it is relevant, that is, if the point you are trying to make can be illustrated with a short joke, go ahead and use it. Be careful not to waste any time on irrelevant jokes—you’re not auditioning for a job as a stand-up comic, you are trying to convey as much information as possible in a short time. Jokes that may offend part of your audience are strictly forbidden—you can’t convey useful information to people who are angry at you for being an insensitive clod.

5.6 Scheduling the talks

Because class periods are only 70 minutes long, the first person will have to start on time, and we’ll have to keep a strict schedule. There will be no room for running overtime, and no time for setting up between talks.

Please come every day, even when you are not speaking—on those days you are the audience! Don’t let your classmates down. We will be especially attentive about attendance during oral presentations.

The best thing is to do your presentation as early as possible, rather than as late as possible—being human, we tend to judge the presentations against the ones we have heard previously, so we are going to expect more of the later presentations.

5.7 Note on oral presentations at SIGGRAPH

The following article is a column by Jim Blinn from *IEEE Computer Graphics and Applications* containing suggestions about presenting technical material to a large audience [Bli88], reprinted with the permission of the publisher.

**Things I Hope Not to See or Hear at SIGGRAPH**

No, I’m not going to talk about flying logos or glass balls. I am going to talk about that special form of performance art known as Giving a Technical Presentation. These ideas apply to speakers in panels and tutorials as well. I realize that the direct audience for this subject is somewhat small, but others of you might be able to use this information in your own talks elsewhere. Also, you should expect this from presentations you hear at SIGGRAPH. SIGGRAPH sends out a lot of stuff about how to prepare visuals, etc. There is no good excuse for not reading it, although from what I see, not many do. The following ideas are just my own personal biases. I will phrase many of them as things not to say or do, because let’s face it, it’s a lot easier to complain.

**Talks read verbatim**

A technical talk is just one facet of a multimedia event built on your work. An adventure story appears different in the film version and the book version. Likewise, different things are more appropriate for the spoken version of your paper than for the printed version. A much more conversational style is best for the talk. Tell a story about what got you interested in the problem in the first place. Briefly relate some routes that you tried that turned out to be dead ends. But please don’t read your paper verbatim. We are people out here in the audience; we’re all your friends; just talk to us. The only exception to this rule is if you are not a native English speaker. If you are not fluent in English, it is probably best to have your words already prepared.
Illegible slides

The most important part of your talk is the visuals; this is SIGGRAPH after all. I am sometimes amazed at how many illegible slides are shown, most especially by representatives of organizations (who shall remain nameless) that sermonize about high-quality imaging. Here are some things that have disturbed me most about slides I have seen.

Microtext

Many of you are involved in the microcircuit revolution and tend to think this also applies to the text on your slides. It doesn’t. My personal rule is to put no more than six lines of text on any one slide. And while you’re at it, use the biggest font you can that will fit on the slide. Six lines of teeny-weeny text with gigantic borders is still not readable. But, you may ask, what if I have more than six lines? Well, just use more than one slide. See? Simple. A good check for readability of slides is to hold them at arm’s length and see if they are still readable. (That is what I do, and my arms are probably longer than yours.) Believe me, that is how small they look from the back of the room. In fact, I make all my slides on my animation system, which has only video resolution. This may seem to be a disadvantage, but it’s not. It forces me to keep the slides simple enough to be legible from a long distance. One effect of this restriction concerns equations. You simply can’t have a complex equation on a slide. Even if you shrink its many terms down so they will fit, it will look like grey noise from the back of the room. Recast your equations into simpler chunks and give each chunk its own name. Make one master slide with the basic equation in terms of these names. Then make a separate slide to define each chunk. Don’t put more than one equation on a slide unless it is fantastically necessary. Use separate slides for each equation to focus attention while you are talking and give you more room for each one.

Yellow lines on a white background

Another design issue concerns colors and contrast. Your best bet is to use some dark background (like a dark blue) with very light color text (like white or yellow) on it. In any event the main idea is to keep high contrast between the text and the background. Even then, I have seen some terrible slides that use black letters on a white background. Even though the letters were big, the slides were illegible because the lines were too thin. Light areas seem to expand visually, so dark lines tend to get eaten up by a white background. If you must use light backgrounds, use a much thicker line width for the dark lines to compensate for this phenomenon. If you want to emphasize some items on the slide, make them in a lighter color than the rest (not just in a different color).

The entire text of the talk echoed on slides

The audience is not going to want to read a lot of text while simultaneously trying to pay attention to what you are saying. Text on slides should consist of just section headings. If you have a section of your talk that you don’t have any obvious graphics for, don’t feel compelled to put the text you are reading on a slide just to have something there. The days of silent movies are over. If you must have something, try showing a picture of a pretty waterfall. And remember, folks, no overhead transparencies allowed. There is a reason for this: They look terrible no matter what you do.

“I’m sorry these slides are so dark.”

I don’t think I have ever seen a slide at SIGGRAPH that was overexposed When you film your efforts, make several exposures and pick the brightest one. In general err on the side of overexposure; make the exposures longer than you think will be necessary. But for heaven’s sake if, despite my sage advice, your slides don’t

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1This suggestion is for 35mm slides not $8\frac{1}{2}” \times 11”$ transparencies—stand back 8–10 feet from transparencies to check readability.
come out bright enough, don’t make a big production out of apologizing for them. It doesn’t make them any
more readable, and may just call attention to problems that might not be as noticeable as you thought. Just
show them and get on with the talk. Remember that your view of the slides from where you speak is not
the best one. The slides will look a lot brighter to the audience than they do to you. Likewise, don’t spend
a lot of time fiddling with the focus (which requires shouting at the AV people in the back of the room). In
the first place, your slides should be big and bold enough that a little bit of out-of-focus shouldn’t bother
them. Remember, from the back of the room the screen looks like a postage stamp. Problems with focus that
appear bad to you, with your nose three feet from the screen, won’t show up to the audience. Talking about
and taking time with these issues detracts from your presentation.

The tops of the speakers’ heads

No, I’m not saying this because I’m tall. I mean that speakers should look straight out at the audience instead
of burying their noses in their notes. I know it looks like a black hole out there, what with the dim house
lights and the spotlight on you. You can’t really see the audience, but there are people there. If you look
down all the time, all that people will see is the top of your head. This is so important that I’ll say it again.
Look up at the audience; it looks a lot better for the TV cameras. Furthermore, don’t turn around to admire
your face on the big TV screen. It just won’t work. All people will see is the back of your head. Likewise,
don’t turn around and look at your slides all the time (except maybe for a brief glance to make sure you are
on the one you expect). People really are traditionally more used to seeing the front of people’s heads than
any other side.

“I’m almost out of time so I’ll just run through the rest of the slides real fast.”

You are hereby warned: You have only about 15 minutes to do your brain dump (for a talk in the technical
session). The time you have is well known to you in advance. You must use it wisely. About all you can
expect to do in this amount of time is give an overview of your paper and inspire those in the audience to
read the paper itself for details. Plan to spend most of your time talking about your new ideas. I have seen
talks where the speaker spends 13 minutes giving a review of the field and a justification for why the specific
problem is interesting. Then—what do you know—there’s no time left for the meat of the talk. I think you
can safely assume that most everyone in the audience thinks computer graphics is a good idea and that, in
fact, the specific problem you are addressing is worth solving. You can probably do fine with about two
minutes introduction before getting to the good stuff. Don’t go into enormous detail in derivations of the
math; just give the basic assumptions and the results. This simplification process goes hand in hand with
the simplification of your equation slides. The gist of the math should be describable without going into a
lot of fine details that people will best get out of the paper. If you have a videotape, time it and make sure
it doesn’t eat up the whole time for the talk. Speaking from experience, I know it is very embarrassing for a
session chairman (whose main duty is time police) to have to interrupt a nifty tape because there’s no time
left.

“Uh, I guess that’s all I have to say.”

Probably the most important parts of your talk are the first and last sentences. Have these all figured out
before you go up to the podium. Try to have something snappy to end with rather than just drizzling off.
You also must give the audience a signal for when to applaud. Usually a simple “Thank you” will suffice.

Remember

Look up, bright slides, big letters. Uh, I guess that’s all I have to say. Thank you.