Preparing an oral presentation for a scientific meeting

Maximising your chances to get your message across

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Professor in Plant Biology since 1985
Attended/organised many scientific meetings
Presented many guest lectures and seminars
in many countries
The seminars included several at Huazhong Agricultural University, Wuhan, PR China.
The structure of a presentation for a scientific meeting

- Title, author(s), addresses
- Background
- Aims
- Materials and methods
- Results
- Discussion
- Acknowledgments
- References may be added when using figures or tables from published papers
Before you start, choose a “font”

- Arial
- Times New Roman
- Comic Sans MS
- Book Antiqua
- AvantGarde
- Bookman
- Garamond
- Palatino

Choose a simple and clear font, e.g., Arial or Comic Sans MS
Choose an appropriate “font size”

- Arial 40 is too large - only ok for very important text
- Arial 36 is still a bit too large
- Arial 28 is my standard
- Arial 24 is still readable
  - Arial 16 is too small to read for main text – ok for additional information
  - Arial 12 is much too small to read, even in the front row
  - Arial 8 is what you use if you want to make sure your audience falls asleep

I like Arial 32 for my titles, Arial 28 for the main text, and Arial 16 for references
The title

- It should cover the main aims and/or message
- It should appeal to your audience
- It should not be too long
- It is preferably be the same as the one you gave to the organisers of the meeting, several weeks before
Different ways to present some background information

• Avoid too much text
• Use dot points when using text
• “One picture is worth more than a thousand words”
• Use diagrams as well as real photographs
Cluster roots are either simple or compound. In simple cluster roots, the rootlets occur on branch roots, they have a determinate growth, and are common in most Proteaceae, e.g., Hakea, as well as in non-Proteaceae, e.g., Lupinus albus and Myrica gale. In compound cluster roots, some rootlets are branched; they also have a determinate growth; they are common in mat-forming members of the Proteaceae, e.g., Banksia, Dryandra (Australia), Leucadendron (South Africa).
<table>
<thead>
<tr>
<th><strong>Simple cluster roots</strong></th>
<th><strong>Compound cluster roots</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rootlets on branch root</td>
<td>• Some rootlets are branched</td>
</tr>
<tr>
<td>• Determinate growth</td>
<td>• Determinate growth</td>
</tr>
<tr>
<td>• Common in most Proteaceae, <em>e.g.</em>, <em>Hakea</em></td>
<td>• Common in mat-forming members of the Proteaceae: <em>Banksia</em>, <em>Dryandra</em> (Australia), <em>Leucadendron</em> (South Africa)</td>
</tr>
<tr>
<td>• Also common in non-Proteaceae, <em>e.g.</em>, <em>Lupinus albus</em>, <em>Myrica gale</em></td>
<td></td>
</tr>
</tbody>
</table>

Presented like this, the information is easier to take in...
However, we can do a lot better than this.

A diagram always helps, especially for those that learn more from pictures than from words.
Simple cluster roots

- Rootlets on branch root
- Determinate growth
- Common in most Proteaceae, e.g., *Hakea*
- Also common in non-Proteaceae, e.g., *Lupinus albus, Myrica gale*


Give the “source” of your diagram, if it is not your own
Simple cluster roots of *Hakea*

“One picture is worth more than a thousand words”
It complements a diagram

*Hakea prostrata*

*Hakea trifurcata*

*Hakea prostrata*
Compound cluster roots

- Some rootlets are branched
- Determinate growth
- Common in mat-forming members of the Proteaceae: *Banksia*, *Dryandra* (Australia), *Leucadendron* (South Africa)

Compound cluster roots of *Banksia* species
The choice between a Figure or a Table

<table>
<thead>
<tr>
<th>Age</th>
<th>malic</th>
<th>malonic</th>
<th>lactic</th>
<th>acetic</th>
<th>maleic</th>
<th>citric</th>
<th>cis-aco</th>
<th>succinic</th>
<th>fumaric</th>
<th>trans-ac</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
<td>371</td>
<td>0</td>
<td>0</td>
<td>119</td>
<td>109</td>
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<td>484</td>
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</tr>
<tr>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>66</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>14</td>
<td>86</td>
</tr>
<tr>
<td>2.5</td>
<td>17</td>
<td>0</td>
<td>41</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>68</td>
</tr>
<tr>
<td>5.5</td>
<td>21</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>8.5</td>
<td>929</td>
<td>0</td>
<td>57</td>
<td>0</td>
<td>0</td>
<td>824</td>
<td>6</td>
<td>209</td>
<td>22</td>
<td>19</td>
<td>2066</td>
</tr>
<tr>
<td>13.5</td>
<td>3217</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3020</td>
<td>14</td>
<td>160</td>
<td>7</td>
<td>54</td>
<td>6471</td>
</tr>
<tr>
<td>25</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
</tbody>
</table>

**Graph:**

- **OA (nmol g⁻¹ FW s⁻¹)**
  - malic
  - malonic
  - lactic
  - acetic
  - maleic
  - citric

**X-axis:** Time (days)

**Y-axis:** OA (nmol g⁻¹ FW s⁻¹)
The columns of a table must be labelled appropriately, and the **units** must be included too.

<table>
<thead>
<tr>
<th>Farmer</th>
<th>Yield (ton ha(^{-1}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xu</td>
<td>1.1</td>
</tr>
<tr>
<td>Huang</td>
<td>1.2</td>
</tr>
<tr>
<td>Wang</td>
<td>2.8</td>
</tr>
<tr>
<td>Tan</td>
<td>3.2</td>
</tr>
<tr>
<td>Zhao</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Use acceptable units, not ones that are “out-of-date”

• Recommended/preferred units are often included in *Instructions for Authors*

• **Double prefixes** are best avoided, *e.g.*, use $\mu g \, g^{-1}$, rather than $mg \, kg^{-1}$ (simpler)

Acknowledgements

• Thank the input of people and agencies who allowed you to present your paper
• Your supervisor (if not a co-author)
• Your technician (if not a co-author)
• Your colleague, who gave you some bright suggestions
• Granting agencies
• Others
Abbreviations

- All abbreviations must be explained
- Try to avoid abbreviations
- If you must use abbreviations, they should be explained, preferably in each slide in which you use them
Frequently made mistakes

- Too much information on a slide
- Poor timing of your presentation
- Too many animations
- Inappropriate colour combination
- ...

<table>
<thead>
<tr>
<th></th>
<th>SI or recommended/preferred units</th>
<th>Non-SI or discouraged / unacceptable units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td><strong>nm, µm, mm, m, km (i.e. m, and up and down by factors of thousand)</strong></td>
<td><strong>cm, dm, dam, hm; inch, foot, yard, mile</strong></td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td><strong>nm², µm², mm², m², km² (i.e. m, and up and down like for length)</strong></td>
<td><strong>cm², ha / acre</strong></td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td><strong>m³ (and up and down like for length); also acceptable L (and up and down by factors of thousand)</strong></td>
<td><strong>cm³, gallon, cubic feet</strong></td>
</tr>
<tr>
<td><strong>Mass</strong></td>
<td><strong>g (and up and down by factors of thousand)</strong></td>
<td><strong>bushel, tonne</strong></td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td><strong>s; also acceptable: h, day, year</strong></td>
<td><strong>min</strong></td>
</tr>
<tr>
<td><strong>Concentrations</strong></td>
<td><strong>mol m⁻³ (and up and down by factors of thousand); also acceptable: M (and up and down by factors of thousand); mol kg⁻¹</strong></td>
<td><strong>cmol kg⁻¹</strong></td>
</tr>
<tr>
<td></td>
<td><strong>g kg⁻¹</strong></td>
<td><strong>%</strong></td>
</tr>
<tr>
<td></td>
<td><strong>µg g⁻¹, µmol mol⁻¹</strong></td>
<td><strong>ppm, ppb</strong></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td><strong>Kelvin, K; Celcius, °C</strong></td>
<td><strong>Fahrenheit</strong></td>
</tr>
<tr>
<td><strong>Transpiration, photosynthesis, respiration</strong></td>
<td><strong>mol m⁻² s⁻¹, nmol g⁻¹ s⁻¹ (and up and down by factors of thousand)</strong></td>
<td><strong>mol cm⁻² h⁻¹, mol dm² min⁻¹</strong></td>
</tr>
<tr>
<td><strong>Electrical conductivity, electricity and magnetism</strong></td>
<td><strong>Siemens per meter, S m⁻¹ (and up and down by factors of thousand)</strong></td>
<td><strong>millimho per centimeter, minho cm⁻¹</strong></td>
</tr>
<tr>
<td><strong>Irradiance</strong></td>
<td><strong>µmol m⁻² s⁻¹; W m⁻², MJ m⁻² day⁻¹</strong></td>
<td><strong>lux</strong></td>
</tr>
<tr>
<td><strong>Pressure, water potential</strong></td>
<td><strong>Pa, kPa, MPa</strong></td>
<td><strong>hPa, atmosphere</strong></td>
</tr>
<tr>
<td>Category</td>
<td>SI or recommended/preferred units</td>
<td>Non-SI or discouraged / unacceptable units</td>
</tr>
<tr>
<td>----------------------------------</td>
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<tr>
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<td>min</td>
</tr>
<tr>
<td><strong>Concentrations</strong></td>
<td>mol m⁻³ (and up and down by factors of thousand); also acceptable: M (and up and down by factors of thousand); mol_c kg⁻¹</td>
<td>cmol kg⁻¹</td>
</tr>
<tr>
<td></td>
<td>g kg⁻¹</td>
<td>%</td>
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<tr>
<td></td>
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</tr>
<tr>
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<td>lux</td>
</tr>
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<td>hPa, atmosphere</td>
</tr>
</tbody>
</table>
Recommended/preferred SI units and non-SI units that are either discouraged or not acceptable for *Plant and Soil*.

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</tr>
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<td>mol cm$^{-2}$ h$^{-1}$, mol dm$^{-2}$ min$^{-1}$</td>
</tr>
</tbody>
</table>
Timing

• Make sure you finish your presentation within the time available

• For a 15-minutes presentation, you only have 11 minutes to speak
  – 1 min is “lost” in between presentations
  – 3 min must be reserved for questions

• Practice your talk to make sure the timing is right
  – Alone
  – In front of a “friendly” audience for feedback
Animations can help to emphasise points
Nutrient availability as dependent on soil pH - note low availability of phosphate, iron and manganese at alkaline pH.
Too many (different) animations can be very distracting – sometimes even irritating
Nutrient availability as dependent on soil pH - note low availability of phosphate, iron and manganese at **alkaline** pH

<table>
<thead>
<tr>
<th></th>
<th>Strongly acid</th>
<th>Medium acid</th>
<th>Slightly acid</th>
<th>Very slightly acid</th>
<th>Very slightly alkaline</th>
<th>Slightly alkaline</th>
<th>Medium alkaline</th>
<th>Strongly alkaline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Phosphorus</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Potassium</td>
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<td></td>
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<tr>
<td>Calcium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper and Zinc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Molybdenum</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Slide colour scheme

• Choose a colour scheme to use for all your slides
• Do not change colour scheme (too often)
• A dark background is considered “restful”
• Use light text on a dark background
• If you use a light background, then you must use dark text
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- Choose appropriate colours, if you wish to use a background picture
- Only use a background picture if it helps to illustrate a point you want to make
- It is often nice for the slide with your title or acknowledgements
- Shading your font may make the text clearer
- This is shaded
- This is the same colour and font, but not shaded
- You can clearly see the difference
Finally, a few comments on language and reading from a written text during your presentation.
A few hints

• Avoid complicated sentences
• Avoid words that you think you understand, but have not really checked carefully
  – Easy to do when using your computer program, without checking in a dictionary
  – For example, instead of the simple aim, you can use the more complicated objective (but do not use objection, which means something totally different)
• Use a spelling checker (use UK English, or US English, but not a mixture of both)
A spelling check picks up lots of mistakes, but does not always correct them in the right way.

Dear Guest:

Our globe have suffeted growing serious pollution by the willfully use of cleaner.

In order to protect environment, you’ll be Continued your spraying/straying/staying for several days and needn’t change your bed clothes, please wipe card on the pillow, at the same time, put the dirty towel on the bathtub.

Thank you for your concern.

Hope you’ll have a pleasant stay with us.
Spelling checkers can only pick up spelling mistakes.

- surmount: climb on
- everywhere: anywhere
- for open to: open to the

Spelling checkers are helpful, but do not replace English classes!
Your spoken text

• If English is not your native language, using extra text on your slides is a good idea.
• It helps people who may have difficulty getting used to your accent.
• If you are not an experienced speaker, then you may prefer to read your text.
• Read your text from your own notes.
• Do not put all your text on the screen – your presentation will become boring.
Remember:

- Even the most experienced speakers get a bit nervous when standing in front of a large audience.
- That little bit of extra adrenaline helps you to give a more exciting talk.
- Once you have started, the nervousness disappears.
- That’s when you begin to enjoy presenting your exciting results.
Acknowledgement

Professor ZHENG Shao Jian, Zhejiang University, Hangzhou, for inviting me to his University, following my visits to Wuhan and Beijing.