

Instructions and tips for creating a research poster

By Ashley Kilgour, Canadian Network for the Detection of Atmospheric Change (CANDAC) April 10, 2012

Posters provide researchers with an excellent opportunity to share their work with peers, professors, and at times, the general public. They are also a great way to obtain feedback and have a dialogue with others about your project. Posters are different from scientific papers in that they are much more visual and graphic in nature to allow the viewer to quickly discern your take-home message.

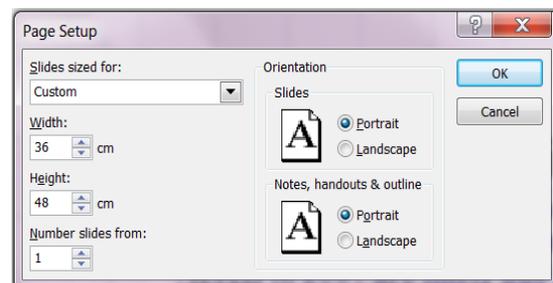
Some key points to remember when making your poster:

1. 80% of your audience has < 10 minutes to view your poster
2. 20% of your audience has specialized knowledge
3. 1 or 2 take-home messages should be emphasized and repeated throughout your poster and during your presentations

Posters are typically created in PowerPoint; however, you can also use Adobe Illustrator, Photoshop, PageMaker, Freelance, Corel Presentations, FreeHand, and Publisher. Only instructions for PowerPoint are outlined here.

Setting up your poster in PowerPoint 2007

1. Open PowerPoint
2. Create a new file
3. On the toolbar, go to **FILE** or **DESIGN** then **PAGE SETUP**. In the “slides sized for” dropdown box, choose **CUSTOM**. To create a poster that is 3 feet wide and 4 feet tall, **enter a width of 36 inches and a height of 48 inches**. You can also make your poster 4 feet wide and 3 feet tall if you prefer landscape layout.
4. Save your poster.



Tip: To see the whole slide when constructing it, go to **VIEW, ZOOM** then choose **FIT**. If the poster is too small, make it larger by choosing a higher percentage.

Sections to include in your poster

Poster title

The poster title is the first level of communication with the viewer, so it should clearly communicate the essence of your research. It should be readable from ~4 meters away (at least 60 size font, ideally larger!), and should be bold and bright print. You can use the WordArt feature of PowerPoint to make your title; however, it does not allow subscript and superscript (i.e. H₂O) or the italicization of individual words (i.e. *Homo sapiens*). Sample poster titles:

Ozone, NO₂, and OClO measured above PEARL during record ozone depletion in 2011

¹C. Adams, ²K. Strong, ¹X. Zhao, ¹A. Fraser, ¹J. Mendonca, ²F. Goutail, ²A. Pazmino, ³C.A. McLinden, ^{4,5}G. Manney, ⁴W. Daffer

1. Department of Physics, University of Toronto, Toronto, Canada; 2. LATMOS/CNRS, Verrieres le Buisson, France;
3. Environment Canada, Downsview, Canada; 4. Jet Propulsion Laboratory, California Institute of Technology;
5. New Mexico Institute of Mining and Technology, Socorro, New Mexico, USA

Figure courtesy of Adams, C., et al. (2011), Ozone, NO₂, and OClO measured above PEARL during record ozone depletion in 2011, *Poster Session at the CREATE Summer School in Alliston, Canada.*

I Thought You Were Passive But You Keep Emitting Greenhouse Gases!
Measuring Greenhouse Gas (GHG) Exchange Between Inland Waters and the Atmosphere

Christopher Caldwell¹, Thorsten Warneke², Justus Notholt² and David Griffith¹

¹Centre for Atmospheric Chemistry, University of Wollongong, Wollongong, Australia
²Institute of Environmental Physics, University of Bremen, Bremen, Germany

Figure courtesy of Caldwell, C., et al. (2011), I Thought You Were Passive But You Keep Emitting Greenhouse Gases!, *Poster Session at the CREATE Summer School in Alliston, Canada.*

Author list

Your author list will include your name as well as any coauthors (i.e. peers, teachers, supervisors) that helped you with your research or shared their datasets. There are several ways to order your authors and coauthors: order of contributor by alphabetical order, institution, or by significance of their contribution. We suggest that you first list yourself and your peers, followed by other coauthors listed alphabetically by last name. You can use either first and last names or just the first initial of the first name and the last name, simply be consistent with the format you choose. You will also include a superscript number following each name and a corresponding list to indicate the institution or place of employment, city, and country for each author and coauthor. Sample author list:

Z. AStudent¹, Y. BStudent¹, X. CStudent¹, W. DStudent¹, V. EStudent¹, A. Kilgour², F. Kolonjari², L. Lim-Cole¹, Z. Mariani², K.A. Walker², and C. Viatte².

1. Uxbridge Secondary School, Durham District School Board, Uxbridge, Canada
2. Department of Physics, University of Toronto, Toronto, Canada

Introduction section

Describe what you are studying, why it is important, and how your analysis will build on the existing research in the field. You may like to include headings like background, objectives, and/or definitions, or just write your introduction in a single paragraph. Typically 100 - 150 words.

Data and methods section

List when (duration and frequency), where, who, and how the data were collected, and how the data were analyzed (i.e. how you calculated the AOT). Including a sample calculation, a photo of your instrument and/or a diagram of how the instrument works may be useful. Typically 150 - 200 words.

Results section

Present your data using a combination of charts, graphs and summary text, as appropriate.

Conclusion or summary section

Return to what you found and what it tells you about the atmosphere. You may want to include ideas for future research you would like to undertake. Typically 100 - 150 words.

References section

List all sources you referred to in your poster; 3-4 references is plenty. “et al.” is another way of saying “and others;” it is only necessary to list the first author followed by “et al.” Sample reference:

Clough, S. A., et al. (2005), Atmospheric radiative transfer modeling: a summary of the AER codes, *Journal of Quantitative Spectroscopy & Radiative Transfer*, 91, 233-244.

Acknowledgement section

Thank the organizations or funding agencies that made your research possible. You may like to include logos so your audience can quickly recognize your home institution and supporters. Sample acknowledgement:

Instruments were provided by the Canadian Network for the Detection of Atmospheric Change (CANDAC). This work is supported by Uxbridge Secondary School, Durham District School Board, and the Department of Physics at the University of Toronto. Thanks to my peers for sharing their data and my teacher for giving me this opportunity and providing guidance throughout the project.

Other tips

- You should include some sort of introduction, a references and an acknowledgement section, but otherwise you should include sections that make sense for your project. For example, your poster may include the following sections: Introduction, Background, Data analysis, Summary, References, and Acknowledgements.
- Write so your audience can understand why your work is of interest to them, providing them with a clear take-home message that they can grasp in the few minutes they will spend at your poster. Plan your poster around two to three key points that you want your audience to walk away with, then design the title, charts, and text to emphasize those points.
- Balance your poster with words and images.
- Ensure that all sources of information are referenced throughout your poster. Unless a direct quote is necessary to prove a point, use paraphrasing (i.e. putting others’ ideas into your own words). Sample format:
The ability of AERI systems to detect the presence of clouds and analyze cloud properties has been well demonstrated (Collard et al., 1995; DeSlover et al., 1999; Turner 2005, and Shaw et al., 2005).
- You may like to include your email address on the poster to allow those interested to contact you with questions or comments. Sample format:
For further information, please contact: akilgour@atmosp.physics.utoronto.ca

Specifics about designing your poster

Fonts

Play around with the font size - usually 28-32 size font works well for poster text, while 36-48 size font works well for subtitles and headings. Use **bold** and/or underline to make subtitles and headings stand out. Fonts without the serif, for example Arial and Calibri tend to be easier to read than ones with the serif like Garamond and Georgia. Try to avoid using BLOCK CAPITAL LETTERS, as that can be difficult to read. Black text on white or light background is easier to read than **white text on black background**, but the decision is yours.

Choosing a Background

The default background for your PowerPoint slide is plain white. To play around with different background options, go to DESIGN on the toolbar, then choose the background you like. Avoid busy backgrounds and always make sure text is visible over whole background of your poster. In order for the background to print, you must change your defaults to print backgrounds.



Adding Text

To insert text, go to **INSERT** on the toolbar, then **TEXT BOX** and drag your mouse where you want to insert text. To move your text box around, click on the frame and move it around with your mouse or by using your cursors. For finer scale movements of the text box, use the control key while using your arrow cursor keys and the text box moves in smaller increments. Adding borders around each section may make the poster easier for your audience to digest. Bullets are a good way of presenting information, especially in the summary section.

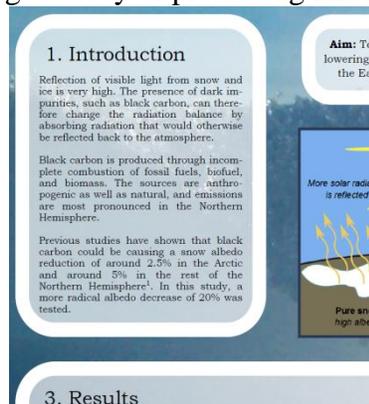


Figure courtesy of Villadsen, H., et al. (2011), Dynamics and historical changes of the Petersen Ice Shelf, Nunavut, Canada, *Poster Session at the CREATE Summer School in Alliston, Canada.*

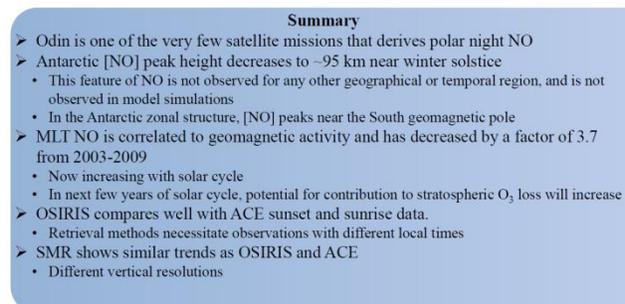


Figure courtesy of Sheese, P., et al. (2011), OSIRIS polar nighttime nitric oxide densities in the mesosphere – lower thermosphere, *Poster Session at the CREATE Summer School in Alliston, Canada.*

Inserting charts

To insert a chart, go to **INSERT** on the toolbar, then choose **CHART**. Choose which type of chart you would like to create and then import your data into the Excel file. Be sure to label axes and include proper units. Also make sure that all text is large enough to read! Provide each chart with a title that explains the topic of that chart. A caption including a summary, the pattern of the main findings, and relevant references should be included under or beside the graph. Sample figures:

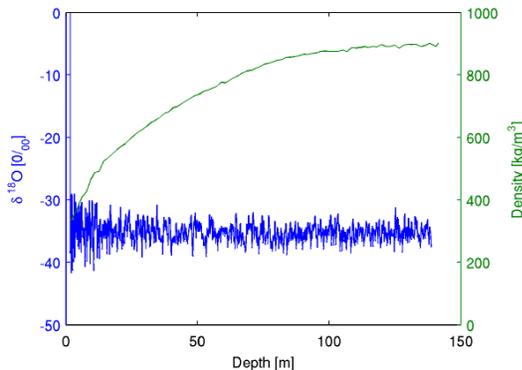


Figure 3: 618O (blue) and density (green) profiles from NGRIP A shallow core drilled in 1997 provided these profiles. The density increases rapidly until pore closure in a depth of approx. 60 meters. From here on the density increases more slowly by compressing of air bubbles until the maximum density for ice is achieved (917 kg/m³). The isotope profile shows many fluctuations, each which corresponds to one season cycle. This means that in a depth of 138 meters the age of the snow is 604 years.

The density profile may be used to find annual layer thicknesses in the firn by providing a model for the amount of air within the firn. This may then be subtracted to determine the annual layer thickness in meters of ice equivalent to compare with the rest of the core. Therefore the strain rate calculations may be expanded to include the firn as well, which have been discarded in figure 2.

Figure courtesy of Sørensen, M.W. (2011), A plan for investigation of recent changes in accumulation rates and temperatures observed at NGRIP, *Poster Session at the CREATE Summer School in Alliston, Canada.*

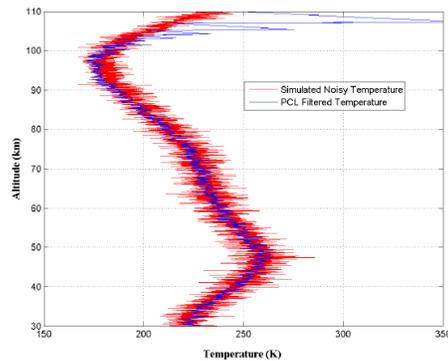


Figure 3 - Comparison of the initial noisy temperature profile (red) from which the simulated data was created and the PCL retrieved temperature profile (blue) filtered with a 7-point 3s and 5s digital filter.

Figure courtesy of Bando, J. (2011), Standardization of Reporting Vertical Resolution for NDACC Lidars, *Poster Session at the CREATE Summer School in Alliston, Canada.*

Inserting diagrams or photos

Diagrams and photos are valuable additions to a scientific poster. A diagram is very effective for conveying issues difficult to capture concisely with text, and to help readers visualize the context. If the diagram or photo is not your original work, reference its source. Always use high resolution photos to prevent them from looking pixelated and/or fuzzy. Below is a general guideline for image size.

Printed image size	Ideal size of file
4" x 6"	1.5 MB
8" x 10"	5 MB
8.5" x 11"	6 MB
12" x 18"	14 MB
24" x 36"	55 MB

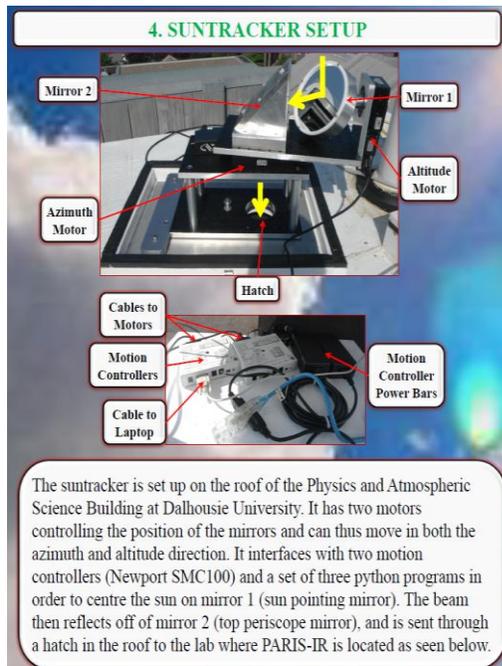


Figure courtesy of Kliever, J., et al. (2011), Setup of the Suntracker for the Portable Atmospheric Interferometric Spectrometer for the Infrared in Preparation for the BORTAS Campaign, *Poster Session at the CREATE Summer School in Alliston, Canada.*

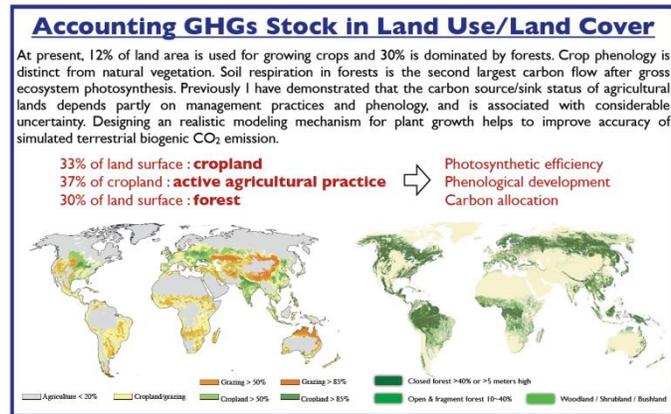


Figure courtesy of Chang, K-H. (2011), Modeling Carbon Dynamics Using the Process-Based Models: Current & Future Work, *Poster Session at the CREATE Summer School in Alliston, Canada.*

Printing Your Poster

Before you print your full-size poster, print and proof-read your poster, and then have a peer, supervisor, or professor proof-read it for you. Select the SCALE TO FIT PAPER option before printing an 8.5" x 11" poster proof. Always examine your proof for correct colouring, margins, symbols, etc. Once you have finished proofing your poster and have made all necessary edits, save it as a PDF document and then email it to all of your coauthors for approval. Once you receive approval from all coauthors, email your poster to a printing shop at least three days before the scheduled poster session.

References

CBS Imaging Center (2012), PowerPoint - Creating Posters, *College of Biological Science, University of Minnesota*. Retrieved April 2, 2012. From http://www.cbs.umn.edu/ic/posters/ICposters_instruc.pdf.

Physics Computing Services (2012), Poster hints, *Graphics Support Centre, University of Toronto*. Retrieved January 9, 2012. From <http://www.physics.utoronto.ca/physics-at-uoft/services/plrs/media-arts-centre-graphics/poster-hints>.