

# Guide to Creating and Presenting a Scientific Poster for a Congress

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## Tips for a Successful Presentation

- **Design with Clarity and Simplicity:** Your poster should be visually appealing and easy to navigate. Use concise text, clear visuals, and ensure all elements are well-aligned and formatted to the congress's specifications.
- **Engage and Communicate Effectively:** Be well-prepared to discuss your poster confidently. Engage with your audience by tailoring your explanation to their level of expertise and inviting interaction.
- **Be Prepared and Professional:** Wear a comfortable outfit, bring hydration, and have business cards or a QR code on your poster for easy follow-up. These small details enhance your presentation and leave a positive, lasting impression.

## Creating the Poster

### Understand the Requirements

- **Size and Dimensions:** Ensure you know the exact size (usually A0 or A1) and orientation (portrait or landscape) required by the congress.
- **Content Guidelines:** Follow any specific guidelines provided regarding sections, fonts, and logos.
- **Submission Deadline:** Be aware of submission deadlines if you need to submit a digital copy before the event.

### Generating Your Poster

- **Presentation Programs:** Use programs like Microsoft PowerPoint, which allows for easy layout and text formatting. Ensure that the slide size and format are adjusted according to the congress's requirements.
- **Graphics Programs:** For more advanced design, use graphics programs like Adobe Acrobat or BioRender. These tools provide greater flexibility for creating high-quality visuals. Again, adjust the page size and format to meet the specific requirements of the congress.
- **Exporting:** Always export your final poster in a high-resolution format (e.g., PDF) to ensure clarity when printed or displayed digitally.

### Define the Structure

- **Title:** Clear and concise. It should capture the essence of your research.
- **Authors and Affiliations:** List all contributors and their respective institutions. Ensure the presenting author is indicated.
- **Introduction:** Provide background information and state the research question or hypothesis.
- **Objectives:** Clearly outline the aims of the research.
- **Methods:** Summarize the methodology, including key techniques, experimental design, and statistical analysis.
- **Results:** Present your key findings using graphs, tables, and images. Ensure they are clear and easy to interpret.
- **Discussion/Conclusion:** Interpret the results, discuss their implications, and suggest future research.
- **References:** Include only essential references, formatted according to the congress guidelines.
- **Acknowledgments and Funding:** Acknowledge contributors and funding sources.

### Design the Layout

- **Flow and Navigation:** Arrange sections logically. Viewers should be able to follow the flow from introduction to conclusion effortlessly.
- **Column Layout:** Typically, posters are organized in columns (2-3 columns are standard).
- **White Space:** Use white space effectively to avoid a cluttered appearance.
- **Visual Balance:** Ensure a balanced distribution of text, images, and figures.

### Choose Visuals Wisely

- **Figures and Graphs:** Use high-quality images, graphs, and charts. Ensure all visuals are labeled and have a caption.
- **Color Scheme:** Use a consistent color scheme that is professional and not distracting. Ensure text contrasts well with the background for readability.
- **Copyright Compliance:** Ensure you use copyright-free pictures/figures or pictures that you have generated yourself to avoid legal issues.
- **Font Choice:** Use clear, readable fonts (e.g., Arial, Calibri) in appropriate sizes (e.g., 24-32 pt for body text, larger for headings).
- **Icons and Infographics:** Use icons or infographics to simplify complex information if appropriate.

### Write Concisely

- **Brevity:** Keep text concise. Use bullet points where possible to convey information clearly.
- **Clarity:** Avoid jargon and complex sentences. Aim for simplicity without losing scientific rigor.
- **Editing:** Proofread multiple times for typos and ensure clarity in every section.

### Final Checks

- **Alignment and Spacing:** Check that all elements are properly aligned and spaced.
- **Consistency:** Ensure consistency in formatting (e.g., headings, font sizes, color use).
- **Print Quality:** If printing, ensure high-resolution output (300 dpi or higher).

### Printing and Transporting Your Poster

- **Paper Posters:** If printing on paper, transport your poster in a sturdy paper roll to protect it from damage.
- **Fabric Posters:** Alternatively, consider printing on fabric, which allows you to fold the poster and transport it easily in your suitcase.
- **Digital Posters:** Digital posters are becoming more common, especially if the congress offers or requests this option. Ensure your digital file meets all specifications.

Inspirations

**MORAN MIRABAL GROUP** | **SUPER-RESOLUTION IMAGING OF NATIVE CELLULOSE NANOSTRUCTURE** | **McMaster University**

Basim, Aydin, Fattahi, Joseph, Khorrami, Mirabal  
Department of Chemistry & Chemical Biology, McMaster University, Hamilton, ON, CA

**INTRODUCTION**  
Cellulose Structure

**METHODS**  
Cellulose Sample Preparation & Imaging

**RESULTS & DISCUSSION**

**ACKNOWLEDGEMENTS**

**Mammalian siRNA activity is related to structural target accessibility**  
Rosel Kretschmer-Kazemi Far and Georg Szekali

**Introduction**

**Results**

**Discussion**

**Conclusions**

**Acknowledgements**

**Methods**

**RNA secondary structure prediction**

**miR-218 Function in Determining Spinal Cord Motor Neuron Identity**  
Karan P. Thakur, Heqin Han, Xiaoli A. Chatterjee, Rongjun Shan, Stacy M. Gillingham, Richard M. Goodwin, Jan M. Casp, Ronghua Luo, & Shou-Whong Lee

**Introduction**

**Methods**

**Results**

**Conclusions**

**References**

**Acknowledgements**

**Human-Wildlife Conflict Unveiled: Rigorously Investigating the Decline in Wildlife Population Caused by Hunting.**  
Catherine Lambers (Researcher), National Wildlife Animal, Department of Ecology

**Abstract**

**Research Problem on Wildlife Decline Due to Hunting**

**Research Data Presentation**

**Introduction**

**Objectives**

**Materials**

**Conclusion**

**Result**

**Recommendations**

**This text could be the main title of your research**

**Marie Bräu, Bomer Bedy, Shekha**

**1 Introduction**

**2 Methods**

**3 Results**

**4 Discussion**

**5 Conclusion**

**6 References**

**Quantifying landscape level threats from pesticide use to honey bees**  
Department of Earth System Science and Policy, University of North Dakota

**Introduction**

**Method**

**Results**

**Conclusion**

**References**

# TWO IS BETTER THAN ONE?

Song function for joint territory defence and within pair communication in Lovely fairy-wrens

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**INTRODUCTION**

Song in birds has been extensively studied and is considered a classical example of a sexually selected trait. However, this interpretation is based on studies of predominantly one sex, the male. There is growing evidence that female song is common and phylogenetically widespread, but there are still only a few species for which song similarities and differences between the sexes have been described.

In this study, we investigated the function of female and male song in the Lovely fairy-wren (*Malurus amabilis*), a tropical species that maintains and defends territories year-round.

**METHODS**

We used observational data to describe their song structure and examine sex-specific variation in song across breeding and non-breeding stages and seasonal variation.

We also used experimental data to examine female and male responses to simulated territorial intrusion, with song playbacks of solo intruders of either sex that varied in complexity.

**RESULTS**

Females and males had similar song metrics and natural song rates.

- Song duration
- Peak frequency
- Min. frequency
- Max. frequency
- Bandwidth
- Entropy

Pairs sang more during non-breeding periods than during breeding periods. Within each breeding stage, males sang more when females were incubating.

Male song playbacks elicited a stronger approach response from both sexes, than female song playbacks.

Pairs sang with shorter latency and at higher rates to simple (than complex) songs but, only when they were presented after complex songs.

Pairs sang with shorter latency and at higher rates to simple (than complex) songs but, only when they were presented after complex songs.

**CONCLUSION**

- Both sexes had coordinated and similar responses to the intrusions.
- Overall, observations and experiments suggest that female and male songs function primarily for within-pair communication and joint territorial defence.

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# The HIV-1 Glycan Shield as a Target for Vaccine Design

Laura K. Robinson\*, Camille Bonnemant\*, Gemma Savill\*, Dan Rugh\*, Sergio Manríquez\*, Verónica Royle\*, Daniel R. Spencer\*, R. Cameron Dunlop\*, Christopher N. Scanlan\*, William R. Schaaf\*, Kalin I. Doornik\*, Max Crispin\*

**Background**

The gp120 envelope spike of HIV-1 is coated in N-linked glycans, which shield the underlying protein epitopes from recognition by neutralising antibodies. However many of the glycans are of the oligomannose type, which are rarely observed on secreted mammalian glycoproteins. The emergence of a number of broadly neutralising antibodies (bNAbs), which target these 'non self' glycans, suggests that the oligomannose patch on gp120 represents an immunogenic region that could be targeted in a vaccine context. The main aims of this work were the following:

- Determine the conservation of the oligomannose patch across different HIV-1 clades
- Investigate the stability of the oligomannose patch in response to deletion of individual glycan sites
- Explain the sensitivity of N332-specific bNAbs to glycan site deletion

**Results**

**Fig. 1 - Cross-clade conservation of oligomannose:**

An effective HIV-1 vaccine depends upon conservation of the target epitope across diverse strains. How variable is the oligomannose population?

**Fig. 2 - Effect of glycan-site deletion on glycosylation:**

Escape mutations by HIV-1 often result in deletion of glycan sites. How does loss of a glycan site impact glycosylation and the oligomannose population?

**Fig. 3 - Stabilising interactions of individual glycans:**

Loss of certain glycan sites were found to larger than expected destabilising effects on the oligomannose population. Could involvement in particular inter-glycan interactions explain this?

**Fig. 4 - Glycan promiscuity of N332-specific bNAbs:**

Several bNAbs target the N332 site. How does removal of nearby glycans affect the processing at this site? What is the effect of recognition by bNAbs?

**Conclusions**

- The oligomannose patch is a highly conserved, cross-clade feature of HIV-1, which is stable upon deletion of individual glycan sites.
- The extremely high density of glycans on gp120 contributes to their limited processing, and reduction of this density can influence processing at nearby glycan sites
- Broadly neutralising antibodies display a degree of promiscuity in their glycan recognition, recognizing more than one particular glycoform.
- The conservation and stability of the glycan shield indicates it is a target for vaccine design.

# Developing and characterising a novel combined nanoelectrode system

L. P. Robinson, A. Mount

**Electrochemistry at nanoelectrodes**

Nanoelectrodes have several advantages for electrochemical sensing.

- Transport to nanoelectrodes proceeds through a relatively inefficient linear diffusion profile. They are also more highly affected by convection and IR drop.
- In contrast, the diffusion pattern for nanoelectrodes quickly becomes hemispherical. This profile is much more efficient, and they are not as affected by convection or IR drop. They can reliably detect very low (attomolar) concentrations of analyte.

**Ag/AgCl as a combined electrode**

The combined reference/counter electrode is created by electroplating a thin film of Ag onto the Pt microarray.

Potentiostatic plating causes Ag to grow preferentially at the corners, creating dendrites. A galvanostatic plating protocol is being developed to provide the requirements for a uniform deposit of AgCl.

To convert the newly plated Ag surface to AgCl, it must be functionalised. Chemical functionalisation by immersion in FeCl<sub>3</sub> has been shown to produce uniform deposits of AgCl.

**Characterisation**

Cyclic voltammetry and electrochemical impedance spectroscopy will be used to verify that the system is behaving as predicted. The nanoband should have a similar response to the current nanoelectrode array.

**Combined nanoelectrode system**

This design consists of a microarray at the bottom of each cavity in the array, with the nanoband around the cavity edge.

The Ag/AgCl microarray is a combined reference and counter electrode. As its area is so much larger than the Pt nanoband, the current passing through the square is not large enough to affect its use as the reference electrode.

This could create an on-chip device for sensitive analytical detection.

**Fabrication**

This design has been fabricated at the Scottish Microelectronics Centre using photolithography. In this technique layers of metal and insulator are deposited and patterned to produce the desired arrangement.

1. Si wafer with oxide surface
2. Metal is then deposited and etched in a nitride passivation layer
3. Photomask layer is deposited and exposed to UV light through a patterned mask
4. Nitride is removed and process repeated to pattern metal layer

Each layer is deposited and patterned sequentially. This approach reliably produces uniform electrodes cheaply and easily.

**An application**

By coating the surface of the working electrode in a probe nucleic acid, the corresponding DNA sequence can be detected using electrochemical impedance spectroscopy (EIS). Before the target molecule is hybridised, the resistance measured for the redox couple is small. When the correct target is hybridised the resistance, and therefore the EIS response, is much larger.

Pre-hybridisation: the redox species has access to the electrode.

Post hybridisation: the access of the redox species is restricted, and the increase in resistance upon addition of the target nucleic acid.

EIS measurement of 50 nm electrode shows species is restricted, and the increase in resistance upon addition of the target nucleic acid.

Many thanks to Dr Damien Corrigan, Bas Schuurman, Professor Andy Mount, the Mount group and the SMC for their continuing support and expertise.

SMC  
EPSC  
Engineering Research and Skills

# TITLE OF YOUR RESEARCH

First name Last name  
\*Affiliation

**Introduction**

Start by providing background context and briefly explain the topic or problem you are addressing. This helps set the stage for your research and provides a foundation for understanding the significance of your work. Explain why your research is important and why it is relevant to the field or discipline.

**Aim**

In the aim section of your research poster, succinctly state your research question and objectives, outlining what you intend to investigate or achieve. This section should provide a clear direction for your study, highlighting its purpose and significance in a concise manner.

**Methods**

Describe the overall research strategy and the rationale for the approach you've chosen to address the research question.

**Methods subheading**

- **Participants/Samples:** Detail who or what was used.
- **Materials/Instruments:** List the tools, technologies, materials, or instruments used to collect data, such as surveys, laboratory equipment, or databases.
- **Procedure:** Briefly explain the steps taken during the study, including data collection and any experimental protocols followed.
- **Data Analysis:** Describe the methods used to analyze the data, mentioning specific statistical tests, software used for analysis, or qualitative analysis methods.

**Results**

In the results section of a poster presentation, you should aim to present your core findings in a clear and organized manner. Data Presentation: Use graphs, tables, or figures to present your data visually. Ensure these elements are well-labeled and can stand alone in conveying the results.

- **Key Findings:** Highlight the most important results of your study. This might include significant statistical outcomes, trends, or patterns observed in the data.
- **Brevity and Clarity:** Keep explanations concise. Use bullet points or numbered lists to make the information digestible.
- **Contextualize Results:** Briefly relate your results back to your research question or hypothesis to help viewers connect how the data answers the initial inquiry.
- **No Interpretation:** The results section should be free from analysis or interpretation, stick to what the data shows, leaving analysis for the discussion or conclusion section.

	Mild	Moderate	Severe
1	30.55%	28.40%	26.85%
2	17.26%	20.99%	23.15%
3	12.65%	9.57%	9.88%

**Discussion**

Interpret the results, explaining how they address the research question and relate to existing knowledge. It should cover the significance of the findings, potential limitations of the study, and suggest areas for future research. This section is where the researcher can offer their insights, draw conclusions, and engage the audience with the broader implications of the study. It's a critical component that bridges the data and the real-world application or theoretical impact of the research.

**Conclusion**

The conclusion of a poster presentation should succinctly articulate the main findings or contributions of your research. It's important to briefly restate the research question and the answers your work provides, emphasizing the most significant results. And discuss the broader implications of your findings for the field of study or potential practical applications.

**References**

1. Smith, J. A., & Lee, B. (2021). Advances in solar panel efficiency: A comprehensive review of recent developments. *Renewable Energy*, 168, 123-145.

2. Johnson, M., & Garcia, R. (2020). The impact of climate change on global agriculture: A review of current research and future perspectives. *Journal of Agricultural Science*, 155(2), 101-115.

3. Williams, K. L., & Brown, S. (2019). The environmental and economic consequences of deforestation: A global perspective. *Environmental Science and Technology*, 53(12), 6789-6800.

4. Thompson, A., & Davis, E. (2018). Water resources management in the 21st century: Challenges and opportunities. *Water Resources Management*, 32(3), 189-200.

QR code: Contact me by scanning the QR code

## Presenting the Poster

### Prepare in Advance

- **Know Your Poster:** Be thoroughly familiar with all aspects of your poster, including data, methods, and conclusions.
- **Anticipate Questions:** Think about possible questions from attendees and prepare your responses.
- **Prepare a Summary:** Develop a 1-2 minute summary of your poster to quickly convey the main points.
- **Seek Feedback:** Ask colleagues, especially those unfamiliar with your project, to review your poster and provide feedback on both the content and your presentation (elevator pitch).

### Dress for Success

- **Comfortable Outfit:** Wear a comfortable outfit that makes you feel confident. Remember, you may be standing for an extended period, so choose shoes that are comfortable and supportive.
- **Hydration:** Bring some water or another means of hydration. Speaking a lot can be tiring, and staying hydrated will help you maintain your energy and focus.

### Engage with the Audience

- **Approachability:** Stand near your poster, maintain an open posture, and make eye contact with passersby.
- **Start the Conversation:** Greet people as they approach, offering a brief overview or asking if they have any questions.
- **Tailor Your Presentation:** Adjust your explanation based on the audience's background—simplify for non-experts and dive deeper for specialists.

### Explain Clearly and Concisely

- **Use Your Poster as a Visual Aid:** Point to specific sections, figures, or data as you explain them.
- **Stay on Point:** Focus on the most critical aspects of your research. Don't overwhelm your audience with too much detail.
- **Encourage Interaction:** Invite questions and be open to feedback.

### Be Professional and Courteous

- **Listen Actively:** Pay attention to questions and comments. Show respect for different perspectives.
- **Manage Time Wisely:** Be mindful of time, especially if there are many visitors. Offer to continue discussions after the session if needed.
- **Facilitate Connections:** Bring business cards to hand out or include a QR code on your poster with your contact information so people can easily connect with you after the session.
- **Thank Attendees:** If you exchanged contact information, send a brief thank-you email.