Lecture 8:

Research posters

Purpose and design

Course 501

Writing and Communication Skills

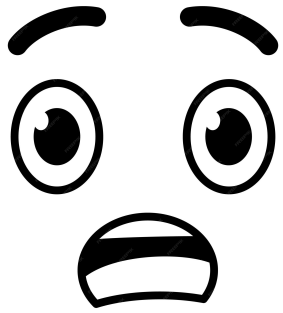
AIMS

- Learn about the purpose of scientific posters.
- Understand the basic elements of posters.
- Review recommendations regarding poster design.
- Design your own poster based on the material of your selected research paper.

Scientific posters

Shocking truths

Your poster is not



a scientific paper

a peer-reviewed material

a medium for scientific debate

a one time work

a major scientific contribution

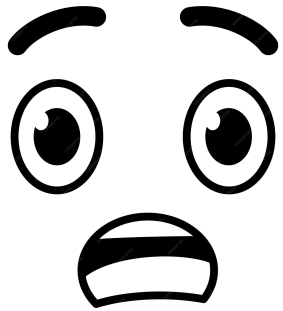
a proof scientific quality

a source of stress

to convince others

your *magnum opus*

Your poster is



to say I am scientifically alive
to say I am still working
to socialize
to collaborate
to get new ideas
to modify your ideas
to get help
to get soft criticisms
to enhance your science
a frequent event
a reason to leave the lab

Scientific content

Keep in mind

Your poster may not be as developed and complete as your future scientific paper.

Your poster can be as simple as a layout of future experiments.

Your poster does not need to follow the standard sections (Abstract, Introduction, M&M etc.).

You may be tempted to follow the layout of scientific papers due to its wide use in design.

The text content of your poster does not need to be in a paragraph format.

Use bullet points of concise short sentences rather than long and complicated paragraphs.

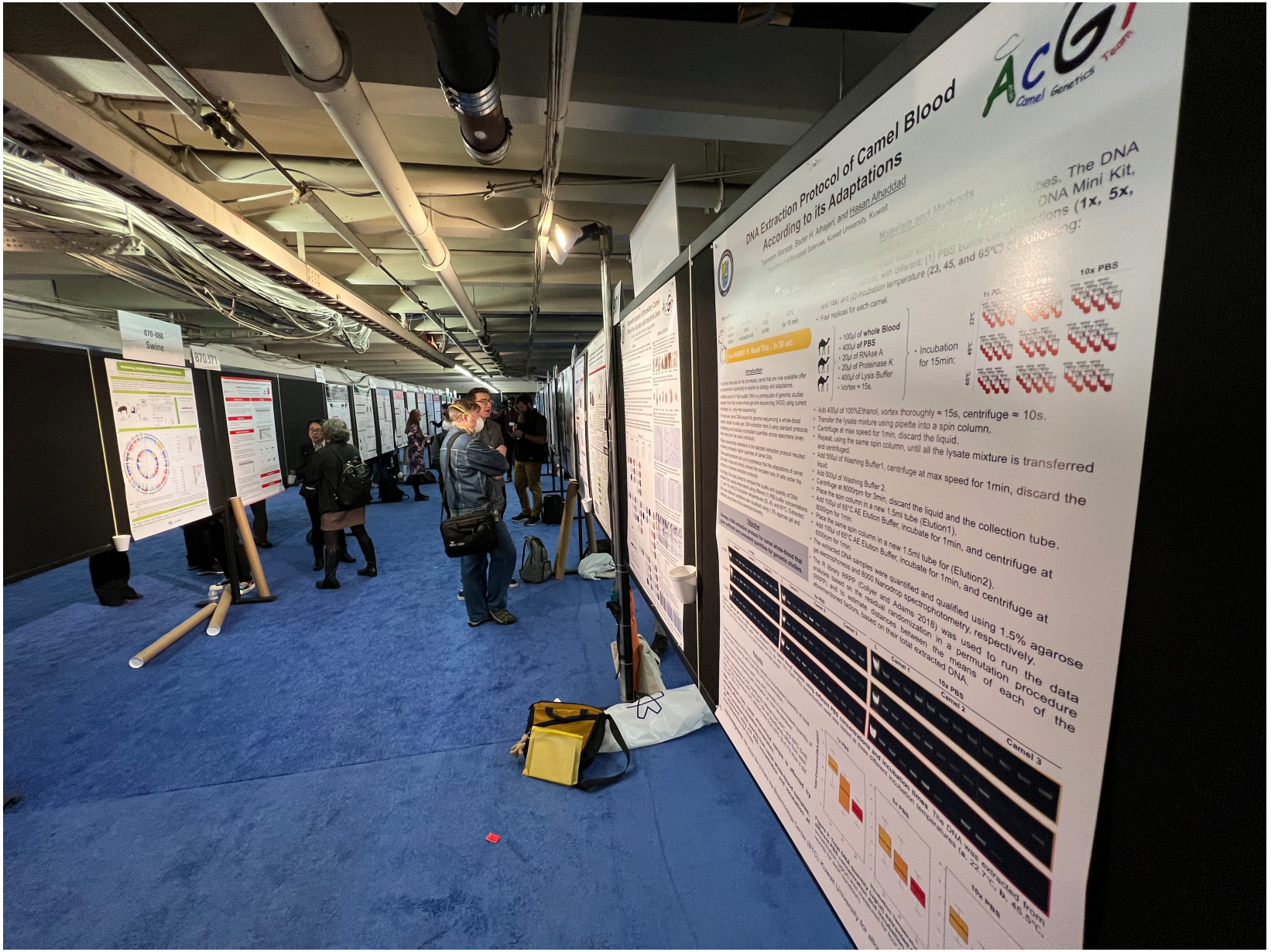
Too much text is not attractive, a sign of sophistication, or mirrors high-quality work.

Too much text is repulsive to the audience and a sign of desperation to fill the poster area.

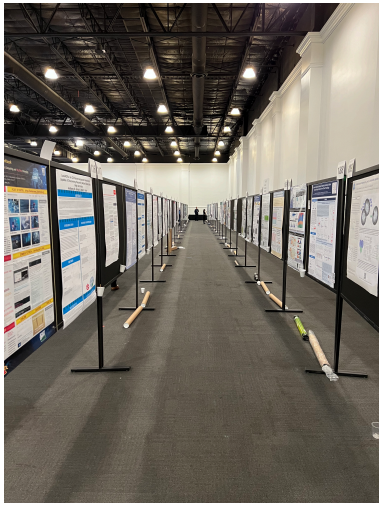
Too much text material is a deterrent from any short or long scientific discussion.

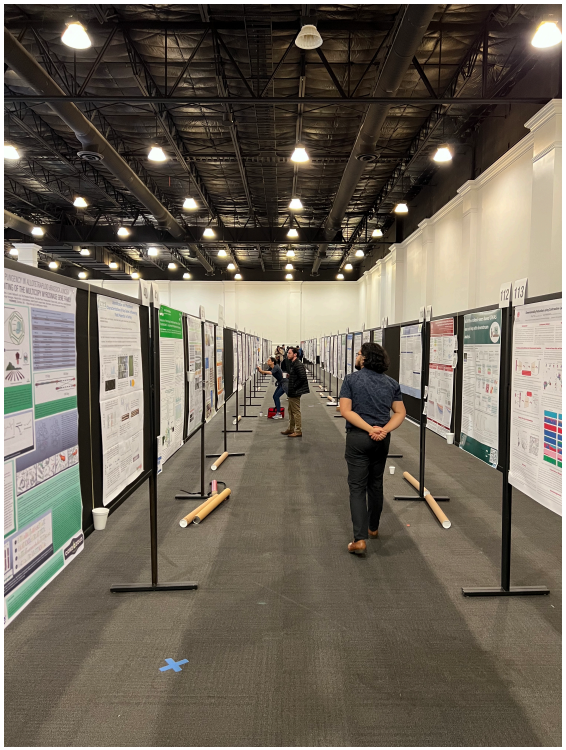
The general audience, people out of your field, will only glance at your poster or spend **~15-20s**, if you are lucky, looking at your poster.

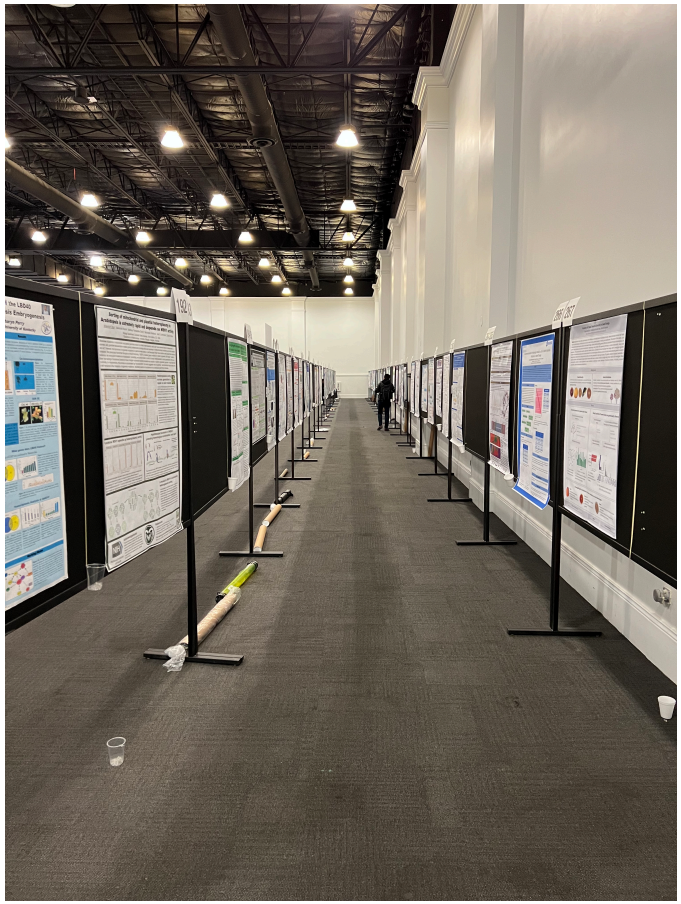
Colleagues within your specialized field will seek you and engage in lengthy discussion.


DNA Extraction Protocol of Camel Blood According to its Adaptations
Camel Genetics
Introduction
Materials and Methods
Four replicas for each camel.
100µl of whole Blood
400µl of PBS
20µl of RNAse A
20µl of Proteinase K
400µl of Lysis Buffer
Vortex ≈ 15s.
Incubation for 15min:
10x PBS
Add 400µl of 100%Ethanol, vortex thoroughly ≈ 15s, centrifuge ≈ 10s.
Transfer the lysate mixture using pipette into a spin column.
Centrifuge at max speed for 1min, discard the liquid.
Repeat, using the same spin column, until all the lysate mixture is transferred and centrifuged.
Add 500µl of Washing Buffer1, centrifuge at max speed for 1min, discard the liquid.
Add 500µl of Washing Buffer 2.
Centrifuge at 8000rpm for 3min, discard the liquid and the collection tube.
Place the spin column in a new 1.5ml tube (Elution1).
Add 100µl of 65°C AE Elution Buffer, incubate for 1min, and centrifuge at 8000rpm for 1min.
Repeat the same spin column in a new 1.5ml tube for (Elution2).
Add 100µl of 65°C AE Elution Buffer, incubate for 1min, and centrifuge at 8000rpm for 1min.
The extracted DNA samples were quantified and qualified using 1.5% agarose gel electrophoresis and 8000 Nanodrop spectrophotometry, respectively.
The R library RRPP (Collyer and Adams 2018) was used to run the data analyses based on the residual randomization in a permutation procedure (RRPP), and to estimate distances between the means of each of the aforementioned factors, based on their total extracted DNA.
Camel 1
Camel 2
Camel 3
The DNA was extracted from 22.7°C, & 45.5°C.
870-868 Swine
870-871

Large scientific conferences display hundreds if not thousands of posters.







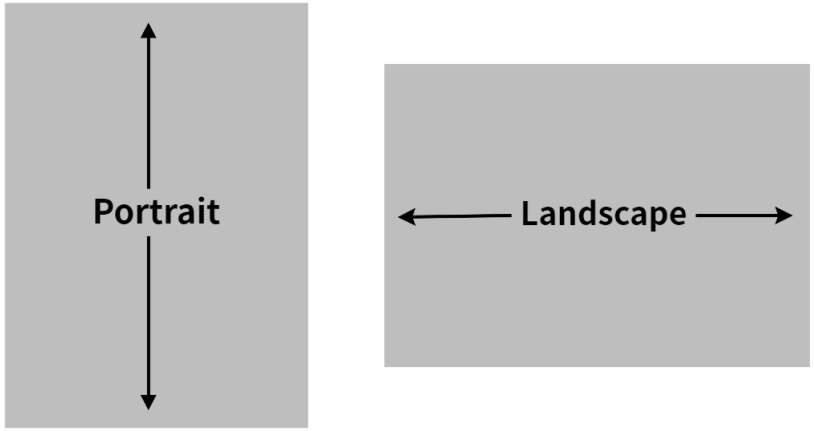
Your goal is to catch the eyes and minds of as many scientists as possible.

Design software

Microsoft **Powerpoint** due to its wide usage at academic institutions by faculty and students.

Layout

Both landscape and portrait layouts are used to design scientific posters.



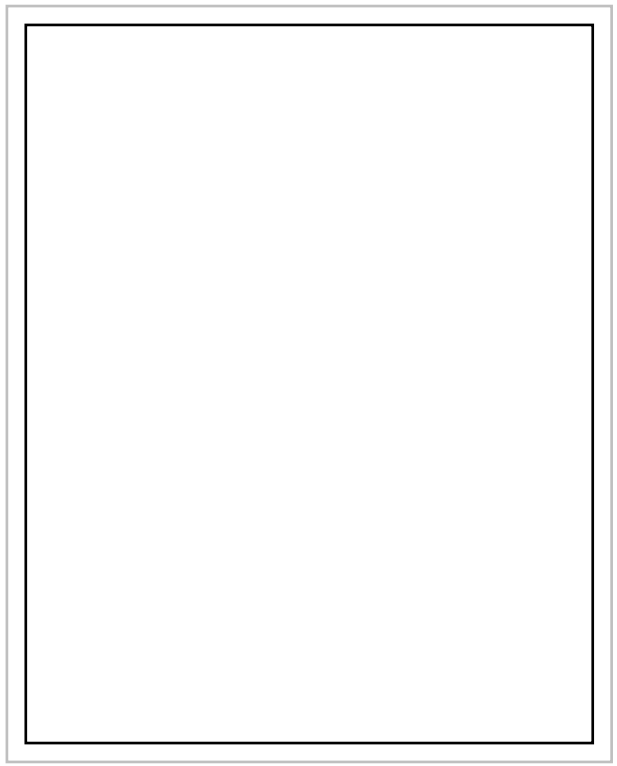
Portrait layout are preferred especially in large scientific conferences since the posters' display area is limited and more portrait than landscape posters can be displayed in the same area.

Size

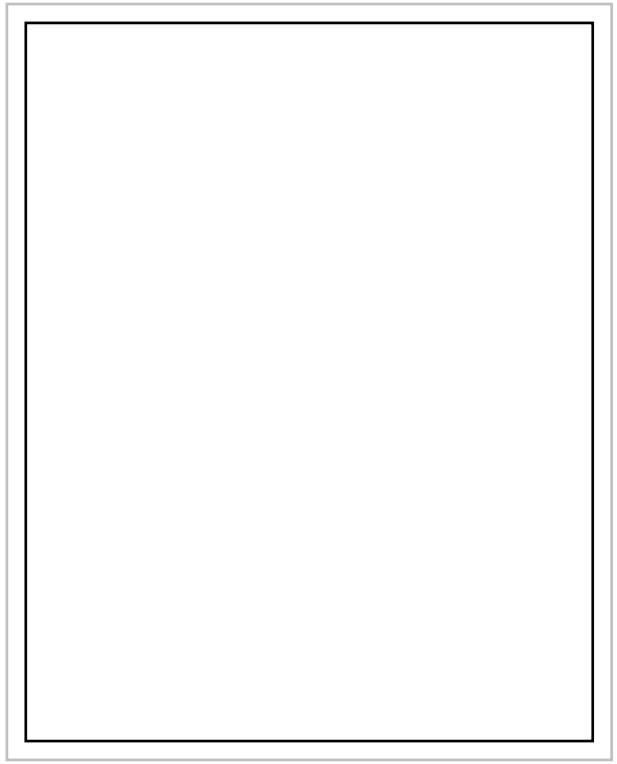
100cm height x 80 cm width
46 inches height x 34 inches width

Margins

Leave ½ inch (1cm) margins from all sides of the poster.



Your poster material will be placed in 45inx33in design area (98cmx78cm).



Font type

Use a basic font that can be easily read (ex. **Arial**).

Arial

Calibri

Times New Roman

Franklin Gothic

Font color

You need a font color that provides the greatest color contrast with the poster background color.

Use **black** font color for most of the written content of your poster.

Use other colors for certain words/sentences to emphasize importance or a specific relationship to graphical content.

Font size

With the exception of the authors' affiliations, figure/table legends, acknowledgments, and possibly the references,

All sections should be typed with font size at least 28pt.

Your poster should be readable form ~1.5m
or 5 feet away.

You don’t want to get people very close to the poster because it will reduce their interaction with you.

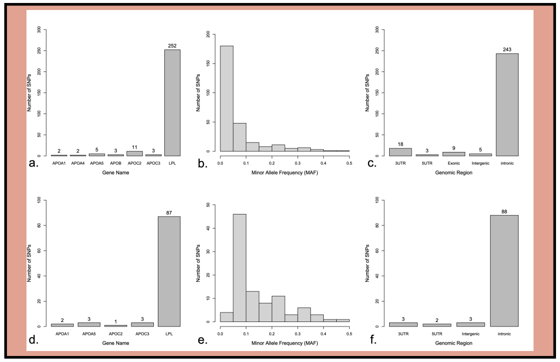
You don’t want to get people very close to the poster because it may block other interested individuals from having visual access to your poster.

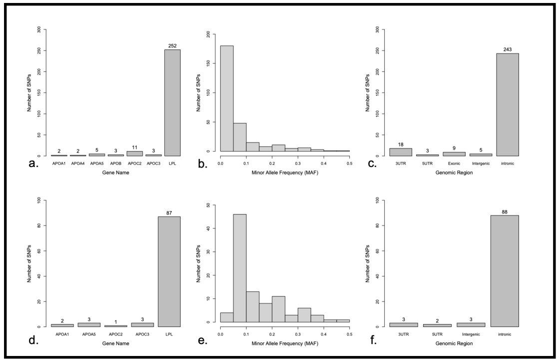
Poster background

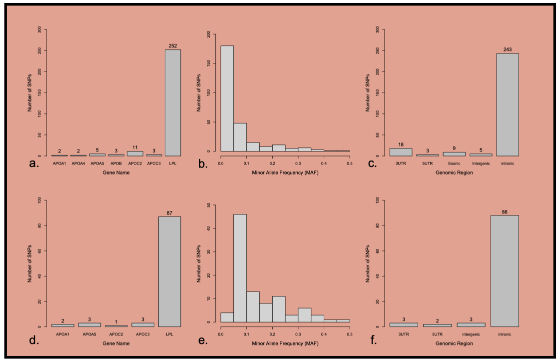
Avoid having a colored background or a background photo.

Consider leaving the background white.

This will concentrate the focus of the eye on the material of the poster (both writing and figures) rather than the background.







This will also provide you with a lot of freedom in the design process.

Title

The title is the

first most important

component of your poster.

Use a short catchy title in a large font size (>60pts).

Your scientific poster is not a scientific paper to be titled with details and does not need to be easily searched and cited.

The title should be attractive to individual passing by the poster or glancing at the conference's program.

Authors

Write the names of the authors in the order agreed upon by the research team (font size ≤ 36pt).

Underline the name of the presenter. The presenter may not be the first author.

This may happen when your advisor takes your work to large scientific conferences.

After each of the authors' names place a number in a superscript (e.g., Hasan[1]).

Affiliations

The superscripted numbers will be the reference for the affiliations of the authors (font size ~24pt).

You can be creative with the display of the affiliations.

You do not need to give every institution/ department a separate line under the author line.

You can simply separate the numbered affiliations with a comma.

Logos

Choose good quality logos of your institution or lab.

It is preferred to choose a logo with a transparent back ground.

There is no standard location to place the logos and it all depends on the design.

I suggest that you scale the size of the logo proportionally to the height of the title lines.

Abstract

Most scientific conferences require the submission of a ~250 words abstract for your poster, which will be printed in the conferences program or uploaded to the conference's webpage.

There is no need to include the abstract in your poster.

You can use part of your submitted abstract in the poster but not in its entirety and not in a paragraph format.

Objectives

The objectives is the

second most important

section of your poster.

You need to pay extra attention to the formulation of your sentences and the writing of concise and clear objectives.

The entire poster will be focused on the various ways to achieve the objectives.

Highlight this section with an attractive color and make the font bold (font size 32-36 pts).

Hypotheses

Your hypotheses may be included in the objectives section and highlighted.

The inclusion of a hypothesis (if you have one) makes your poster easier to explain from your side and easier to read and understand by the audience.

Figures

The figures are the

third most important

part of your poster.

Unlike your papers (written communication) or talks (oral communication), your posters are largely visual representations of your science.

Your audience will mostly look at your poster rather than read it and in many cases you will not be around to explain the content verbally.

Present your work in clear figures and diagrams that are both attractive to the eye and self-explaining to the mind. Your figures may have different forms (plots, diagrams, pictures etc.).

Generate the plots and diagrams with a transparent or white background.

This will ensure the perfect blend of your figures with the overall background of your poster.

Tables

Avoid inserting tables in your poster.

Table 3.1. Marker specific summary statistics of camel STR panel for the global and Mezayen datasets.

Marker	Accession No.	Repeat Motifs	Global Dataset					Mezayen Dataset				
			Geno[3]. Rate	Geno[4]. No.	Allele No.	H_o[5]	PIC[6]	Geno. Rate	Geno. No.	Allele No.	H_o	PIC
LCA99[1]			0.99	135	36	0.89	0.88	1	66	18	0.90	0.86
CVRL01[2]	AF217601	$(GT)_{27}$, $(GC)_6$, $i(GT)_9$	0.83	102	27	0.81	0.79	1	47	23	0.70	0.70
YWLL08[2]	AF217608	$(CA)_9$, $(GA)_5$	1.00	99	22	0.87	0.86	1	58	17	0.85	0.83
LGU75	AF237494	$(GT)_{20}$	0.83	79	21	0.78	0.75	1	54	16	0.83	0.81
CMS50	AF329149	$(GT)_{27}$	0.83	58	16	0.87	0.85	1	38	11	0.83	0.81
CMS121	AF329159	$(TG)_{24}$	0.83	49	14	0.80	0.77	1	30	9	0.76	0.72
LCA33	AF060103	$(CA)_8$	0.83	43	18	0.74	0.70	1	20	12	0.64	0.57
CMS9	AF329160	$(GT)_{24}$	0.83	37	15	0.75	0.71	1	21	8	0.77	0.73
CVRL05	AF217605	$i(GT)_{25}$	0.83	35	17	0.71	0.66	1	25	11	0.71	0.67
CMS13	AF329158	$(AC)_{27}$	0.83	29	14	0.68	0.63	1	20	8	0.71	0.67
LCA66	AF091125	$(CA)_{13}$	1	29	11	0.80	0.77	1	16	7	0.74	0.69
YWLL44	GU723276	$(TG)_{18}$	1	24	9	0.73	0.69	1	12	5	0.63	0.58
CMS16	AF329157	$(TG)_{34}$	0.83	23	12	0.60	0.53	1	16	9	0.60	0.54
LGU56	AF237492	$(GT)_{16}$	0.83	20	13	0.35	0.32	1	11	6	0.45	0.41
CVRL04	AF217604	$i(GT)_9$	0.83	13	8	0.63	0.56	1	6	3	0.63	0.55
LGU76	AF237495	$(GT)_{11}$	0.83	11	7	0.65	0.58	1	8	5	0.67	0.60
VOLP32	AF305234	$(TG)_{20}$	0.99	10	7	0.47	0.44	1	4	3	0.41	0.32
YWLL29[1]			1	9	5	0.43	0.37	1	3	2	0.42	0.33
LCA8	AF060096	$(CA)_{14}$	1	3	2	0.42	0.33	1	3	2	0.50	0.37

[1] Markers with unknown repeating nature. [2] Complex STR markers with more than one block of repeats. [3] Genotype rate. [4] Genotype number. [5] Observed heterozygosity. [6] Polymorphism Information Content.

Tables are generally detailed summary of your work or your scientific findings.

The location of such details is not your poster but your scientific papers.

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CVRL01[2]	AF217601	$(GT)_{27}$, $(GC)_6$, $i(GT)_9$	0.83	102	27	0.81	0.79	1	47	23	0.70	0.70
YWLL08[2]	AF217608	$(CA)_9$, $(GA)_5$	1.00	99	22	0.87	0.86	1	58	17	0.85	0.83
LGU75	AF237494	$(GT)_{20}$	0.83	79	21	0.78	0.75	1	54	16	0.83	0.81
CMS50	AF329149	$(GT)_{27}$	0.83	58	16	0.87	0.85	1	38	11	0.83	0.81
CMS121	AF329159	$(TG)_{24}$	0.83	49	14	0.80	0.77	1	30	9	0.76	0.72
LCA33	AF060103	$(CA)_8$	0.83	43	18	0.74	0.70	1	20	12	0.64	0.57
CMS9	AF329160	$(GT)_{24}$	0.83	37	15	0.75	0.71	1	21	8	0.77	0.73
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CMS16	AF329157	$(TG)_{34}$	0.83	23	12	0.60	0.53	1	16	9	0.60	0.54
LGU56	AF237492	$(GT)_{16}$	0.83	20	13	0.35	0.32	1	11	6	0.45	0.41
CVRL04	AF217604	$i(GT)_9$	0.83	13	8	0.63	0.56	1	6	3	0.63	0.55
LGU76	AF237495	$(GT)_{11}$	0.83	11	7	0.65	0.58	1	8	5	0.67	0.60
VOLP32	AF305234	$(TG)_{20}$	0.99	10	7	0.47	0.44	1	4	3	0.41	0.32
YWLL29[1]			1	9	5	0.43	0.37	1	3	2	0.42	0.33
LCA8	AF060096	$(CA)_{14}$	1	3	2	0.42	0.33	1	3	2	0.50	0.37

[1] Markers with unknown repeating nature. [2] Complex STR markers with more than one block of repeats. [3] Genotype rate. [4] Genotype number. [5] Observed heterozygosity. [6] Polymorphism Information Content.

Tables generally occupy a large area of the poster (if displayed with a reasonable font size), which can alternatively be used for more important graphical or written content.

Conclusion

IMPORTANT!

The conclusion(s) is the

fourth most important

section of the poster.

It should give a general summary of the findings in a concise sentence or few sentences.

The conclusions should include the general take home message of your scientific work.

References

Your poster is not a scientific paper.

Do you need references?

Disclaimer

Figures, photos, and graphs in my lectures are collected using google searches. I do not claim to have personally produced the material (except for some). I do cite only articles or books used. I thank all owners of the visual aid that I use and apologize for not citing each individual item. If anybody finds the inclusion of their material in my lectures a violation of their copy rights, please contact me via email.

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