AMSI
SUMMER
RESEARCH
SCHOLARSHIPS
2024–2025

Get a taste for Research this Summer

INFORMATION BOOKLET

Jane Street®

AMSI — AUSTRALIAN MATHEMATICAL SCIENCES INSTITUTE

Congratulations on receiving a 2024–25 AMSI Summer Research Scholarship!

This booklet provides essential information about your scholarship, research project, and AMSIConnect—the national student conference where you will present your findings.

AMSI will contact you in December with details about AMSIConnect and travel arrangements for interstate students.

KEY DATES

Research projects begin (exact date may vary)	**2 December 2024**
AMSIConnect (attendance is compulsory for duration)	**5–7 February 2025**
Research report and blog due (proofed by your supervisor)	**28 February 2025**
Report and blog posted online	**Late March 2025**

RESEARCH REPORT

- Should be written in a formal style, as per a scientific journal.
- 9-15 pages long excluding appendices
- Adhere to the **AMSI Style Guide** and use the **AMSI Research Project Template** available at srs.amsi.org.au/information-for-students/#guidelines
- Adhere to the **Intellectual Policy** and Plagiarism policy of your home university and/or the AMSI partner organization where you undertake your project. Ensure you are familiar with these policies and requirements.

Changes to your research topic: For minor changes, discuss with your supervisor and email us at events@amsi.org.au. Significant changes from your initial proposal require approval from AMSI and your Head of Department.

WRITING THE REPORT

1. There should be a brief one-paragraph **Abstract** that
   - summarises the project
   - is self-contained so that it can be read independently of the report itself
   - does not contain references.

2. There should be an **Introduction** that:
   - introduces the topic in a non-technical way
   - explains what will be presented in the report, and
   - can be read independently of the abstract (hence, there can be some overlap between the abstract and the introduction).

   After reading the introduction your reader should understand exactly what your research is about, the motivation for the research, what you achieved and the

methods you have used. In the introduction, it might be appropriate to give some references to texts that contain the background material required to read the report.

3. A **Statement of Authorship** must be included at the end of your introduction outlining the degree to which the results presented are your own work.

4. There should be one or more **Sections** that describe the work undertaken for your project. This will be the bulk of your report.

5. There should be a final **Discussion and Conclusion** section where you:
   - summarise what has been reported and
   - indicate possible future directions.

   This section should be essentially self-contained and so may overlap with the introduction.

6. If applicable, there should be an **Acknowledgements** section that acknowledges contributions and assistance provided by others.

7. You may include **Appendices (maximum 10 pages)** for background materials, diagrams, etc. —information that supports your analysis, validates your conclusions, or pursues a related point (especially repetitive or lengthy information) – that are not appropriate to include in the body of the report.

8. There should be a list of **References** cited were appropriate as per the AMSI Style Guide. Ensure that all references used are listed in the reference list, and that every reference is cited in the report.

PROOFREADING

Before you submit your report, you need to review your work.

- Final editing should include a review of the AMSI Style Guide formatting rules.
- Spelling and grammar must be consistent and thoroughly checked
- The required headings must be included
- All graphs and tables need to be labelled
- The report must not exceed the page limit
- All references need to be cited correctly

Once completed and proofread, your report must be **approved by your supervisor**. Allow time for any suggested changes before submitting.

SUBMISSION

Submit your research report online (File name: LASTNAME_FIRSTNAME_SRS-Report.pdf) by **Friday, 28 February 2025** at: tfaforms.com/5134864.

You will be asked to make the following declarations during the submission process:

- I confirm that my blog post and research report have been approved by my supervisor
- I have adhered to the Intellectual Policy and Plagiarism Policy of my home university
- I have completed this work myself and highlighted the work of others where applicable

BLOG POST

Your blog post offers a chance to practice communicating your research to a broader audience, a vital skill for modern researchers. You may write on *one* of these topics:
- Your research project
- An area of mathematics you are interested in
- How or why you became interested in the mathematical sciences

Blog posts should
- Be 300-500 words in length and written for a non-specialist audience
- Include a 50-100 word abstract that can be used for a blog preview.
- Have an engaging title that will attract readers!
- Have equations (if included) written in plain text
- Be submitted (after it has been proofed by your supervisor) by **Friday, 28 February 2025** via our online form tfaforms.com/5134864.
  - File name: LASTNAME_FIRSTNAME_SRS-Blog.docx

Tips for writing an engaging blog are at the end of this booklet. Refer to previous blogs here and some successful examples below:

- Example 1
- Example 2
- Example 3
- Example 4

AMSICONNECT

AMSIConnect offers SRS students a platform to present their research findings in a professional conference setting. Attendance is compulsory and a condition of the AMSI Summer Research Scholarship. You must attend for the entire event unless formal arrangements are made with AMSI.

Supervisors are encouraged to attend AMSIConnect to support their students, assist with questions, and chair sessions. AMSI will send invitations to all supervisors.

Dress code: smart casual

TRAVEL AND ACCOMMODATION

AMSI will arrange and cover the cost of return economy airfares to Melbourne for interstate Scholars and return train travel for regional Victorian Scholars. Accommodation will be provided at a University of Melbourne student college for two nights from 5-7 February 2025. AMSI representatives will meet Scholars upon arrival at Melbourne Tullamarine Airport on 5 February and provide transport from the airport to the accommodation.

AMSI will send an itinerary to students flying to Melbourne ahead of the travel day. Should Scholars make any changes to travel arrangements after confirmation, they will be responsible for any additional costs incurred.

PRESENTATION GUIDELINES

Each Scholar will be allocated 20 minutes in the conference program consisting of a **15-minute presentation** and 5 minutes for introduction by the Chair, Q&A and changeover. Keep an eye on the clock. Presenters will be stopped by the session chair at 15 minutes. The session chair will stop presentations at 15 minutes, so keep an eye on the clock and be prepared to answer one or two questions from the audience.

Presentations must:

- Use the **AMSIConnect PowerPoint/LaTeX Presentation Template** available at srs.amsi.org.au/information-for-students/#guidelines
- Be tailored for a mathematically literate audience but not specialists in your research topic.
- Acknowledge all sources within your talk or as references in the slides. It is vital that work of others is not passed off as original ideas.

The best presentation/s, as voted by AMSIConnect attendees, will be awarded a prize.

STAY IN TOUCH

Follow AMSI on X (formerly Twitter) and LinkedIn for event updates, opportunities and mathematical sciences news.

Share your research reports and blogs with friends and family once they are published on the AMSI SRS website srs.amsi.org.au.

Tag **@DiscoverAMSI** and **#AMSISRS** in status updates and photos from AMSIConnect—we'd love to see what you're up to!

AMSI STYLE GUIDE

BODY TEXT

- Ensure all text is clear, legible and appropriate, i.e. Arial, Calibri, Times New Roman (the standard LaTex font, Computer Modern, is also acceptable)
- Ensure body text is size 12pt font
- Ensure headings are suitably distinguished
- First sentence of first paragraph should be flush with the left-hand margin. All paragraphs thereafter should be indented
- Ensure all figures, graphs and tables are correctly labelled and referenced
- Australian spelling: –ise, **not** –ize
    - e.g. realise, **not** realize
- When referring in the possessive to two people, only place the **'s** after the second name
    - e.g. 'This is demonstrated by Douglas-Richard and Dystra's method.'
- Quoted text should be surrounded by single quotation marks
    - e.g. Einstein famously quoted the following in jest of his peers, 'Do not worry about your difficulties in Mathematics. I can assure you mine are still greater.'
- Quotation marks should be single outer, double inner
    - e.g. 'Then mum said, "Finish your thesis and go to bed," but I ignored her.'

Italics:

- Italicise unfamiliar technical terms that are then immediately defined
    - e.g. 'I started my investigation with *latin square graphs*. A latin square is a square array of numbers…'
    - **Not** 'what I found was that an *infinite* family of latin squares could be constructed'
- Do not italicise all technical terms
    - e.g. generalised quadrangles, **not** *generalised quadrangles,* unless immediately defined
- Do not change fonts when using italics
    - e.g. 'In 1912 Birkhoff introduced the *chomatic polynomial*, which…'
    - **Not** 'In 1912 Birkhoff introduced the *chomatic polynomial*, which…'

REFERENCING/CITATION

- Please use consistent, specific citation
- Please use the Harvard (author-date) referencing system
    - e.g. journal referencing
    Author (surname, initial), year, 'Title being referenced,' *Journal*, vol. no, pp. no.

    - e.g. novel referencing
    Author (surname, initial), year, *Title*, edition, publishing house, location.

- When referencing articles in languages other than English, use all original titles
- When referencing articles originally printed in languages other than English, please provide translation following the original title.

Examples:

Bessant, J 2001, 'The question of public trust and the schooling system', *Australian Journal of Education*, vol. 45, no. 2, pp. 207-226.

Bessant, J & Webber, R 2001, 'Policy and the youth sector: youth peaks and why we need them', *Youth Studies Australia*, vol. 20, no. 1, pp. 43-47.

Robbins, SP 2004, *Organizational behavior*, 11th edn., Pearson Prentice Hall, Upper Saddle River, NJ.

Robbins, SP & DeCenzo, DA 2004, *Fundamentals of management: essential concepts and applications*, 4th edn, Pearson Prentice Hall, Upper Saddle River, NJ.

Blainey, G 2003a, *Black kettle and full moon: daily life in a vanished Australia*, Penguin/Viking, Camberwell, Vic.

Blainey, G 2003b, *The rush that never ended: a history of Australian mining*, 5th edn., Melbourne University Press, Carlton, Vic.

Original:
Pirandello, L, 1921, *Sei personaggi in cerca d'autore,* 10th Edition, Newton Compton, Perugia.

Translation:
Pirandello, L, trans. Eric Bentley, 1921, *Sei personaggi in cerca d'autore (Six Characters in Search of an Author),* 10th edn., Newton Compton, Perugia.

TIPS ON WRITING YOUR BLOG

1. Find interesting research

You already have interesting research. It's what you will be studying for your SRS Project. But if you would prefer to write about some other area of research that's fine. Or perhaps you would prefer to write about your experience with maths and why you enjoy it so much.

2. Make sure you understand it

We're sure you'll have a deep understanding of your own SRS research, and if you choose another area of research to write about make sure you understand what you're writing about. The better you understand it, the better you'll be able to communicate to your reader.

3. Show why it's interesting first

Tell us what you like about the project: perhaps some interesting applications, something to make it relatable, or interesting to the reader. Do this first so your readers aren't overwhelmed with methods and results first thing.

4. Let the research speak for itself

Don't exclude information because you don't think people will be able to understand it. People want to know all the details, not just the end result, and excluding details will either leave people annoyed because they feel it's too dumbed down or confused because they don't know how the research came to these conclusions.

5. Don't include details that are only relevant to mathematical scientists

We want these blogs to be accessible to the general public. So don't dumb things down to the extent that the reader feels patronised. Rather, explain the research and results in a way that people without in-depth knowledge of the subject will be able to understand. Try analogies or explain a practical application. However, you chose to do it, try and get the right balance between ease of reading and omission of details.

6. Don't use jargon without explanations

This is not your research report, so be careful about your use of technical language. Basic jargon is fine, but make sure you define any technical terms used within the blog.

7. Tell a story/be creative

This doesn't need to be you spewing out facts onto a page. Make it inventive and creatively use jokes and anecdotes to enhance your article. Perhaps lead the reader through your research, joking about the hiccups you had along the way. This is not a scientific report; you have the freedom to be creative.

8. Don't leave your work open to misinterpretation

Make sure your point of view or argument is the same all the way through. You can certainly provide alternative thoughts, but make sure the overall message is consistent. Remember, you want someone to feel that they understand your ideas and arguments even if they stop reading

9. Visuals are great, so use them wisely

Use images well and you will greatly enhance your article, use them badly and you will confuse your readers. Don't just throw in graphs and tables of data unless they are really helping clarify a point. Once again, remember that this article is for the wider community, not just mathematical scientists.

10. Keep it concise

Your blog should be significantly shorter than your report. Keep it concise and don't get bogged down in unnecessary details. It's an interesting blog, not a PhD submission.

11. Cite your sources

This isn't too crucial for those using their own SRS research. But make sure you give credit where it's required, and if you do have some interesting further reading, include it for those who may want additional information.

12. Get your facts straight

Read over your work to make sure all the facts are right, and then perhaps get a friend or family member to read over it to check that the spelling and grammar are correct.

13. Have fun

At the end of the day, this is about making it enjoyable for your readers and the best way to do that is to make it enjoyable for yourself.

Adapted from scienceofblogging.com