

AuPS News – March 2025

Member Profile: PhD Candidate

Annabel Critchlow

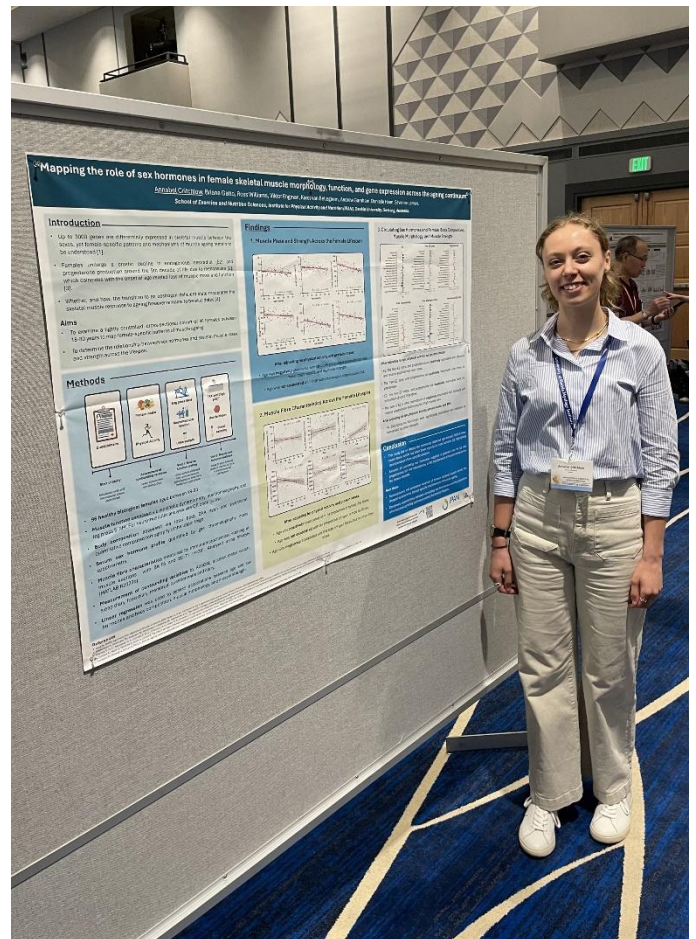
Deakin University

Winner of the inaugural AuPS Higher Degree by Research (HDR) Student Collaborative Grant

Congratulations on winning the grant. Can you tell us about your research project and its significance?

The over-arching aim of my PhD is to investigate the role of female circulating sex hormones in female skeletal muscle ageing. While mechanisms of muscle ageing have been quite thoroughly investigated, most of our knowledge originates from male subjects. However, muscle is a highly sex-specific tissue, so we cannot ascertain the female muscle ageing trajectory from male data. For this project, I am utilising data collected from 96 females across the entire adult lifespan (18-80 years), with equal representation from every decade. The dataset includes measures of muscle function and composition, circulating sex hormone levels, and muscle biopsies for molecular analysis. All data collection was carefully controlled for potential confounding factors including menstrual cycle phase, menopausal status, physical activity levels, protein intake, and sleep patterns. This approach allows us to

map the complete process of female skeletal muscle ageing with unprecedented detail, potentially revealing sex-specific interventions for healthy ageing.



How do you plan to use the grant funds to further your research?

I plan to use the grant to fund a research visit to the University of Kentucky, where I'll be working with Associate Professor Christopher Fry, a leading expert on satellite cells in muscle wasting conditions. There's still a lot we don't know about how satellite

cell number and activity change across the female lifespan, but recent research suggests a possible link between circulating oestrogen levels and the regulation of satellite cells. Our goal is therefore to map satellite cell numbers across the entire female lifespan and explore how oestrogen treatment affects the ability of female human muscle cells to proliferate. This project will help us better understand how muscle regeneration changes with age in females, and the potential role oestrogen plays in that process.

Can you share any advice for other students who might be interested in applying for this grant in the future?

My advice is simple - just go for it!

Applying for this grant is a great opportunity, and you never know unless you try. The council were very supportive throughout the whole process, and they provided great feedback that I can use to improve my research going forwards.

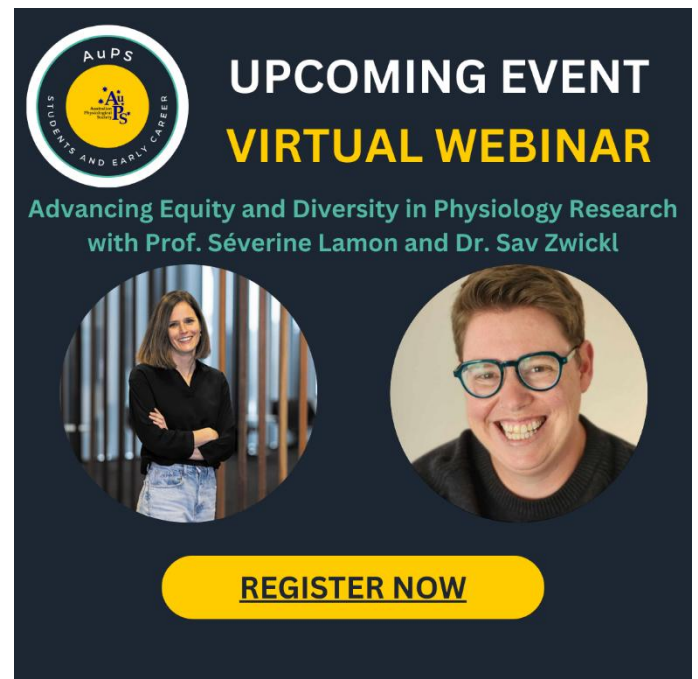
How has the support from your supervisors and peers contributed to your success?

I've been incredibly fortunate to be surrounded by such a wonderful team. My supervisors have encouraged me to take on challenges I didn't think I was capable of, providing invaluable advice along the way. I am also constantly in awe of my peers and their willingness to dedicate their time and effort to moving this project forward. Most importantly, they've provided many laughs, making all the early morning biopsy sessions and long lab days worth it.

What do you find most exciting about your research field?



What excites me most about my research field is seeing how our work in the lab can lead to real-world impact. While recruiting for my PhD project, I met many women who were thrilled to participate in

female-specific research, often sharing that they felt overlooked, especially when it comes to topics like menopause. It was evident that they valued being included in the study, which makes this field incredibly rewarding. There's also so much we still don't understand about how female sex hormones regulate muscle, making it exciting to think about the new insights we can gain to help address female age-related muscle wasting



UPCOMING EVENT
VIRTUAL WEBINAR

Advancing Equity and Diversity in Physiology Research
with Prof. Séverine Lamon and Dr. Sav Zwickl



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Science Meets Parliament 2025: Insights from AuPS Delegates

Dr. Noni Frankenberg- La Trobe University- and Dr. Suzanne Estaphan- the Australian National University- represented the AuPS council at SMP2025



The Australian Physiological Society (AuPS) is proud to fund the participation of two of our council members in the prestigious Science Meets Parliament 2025 event, held on February 12-13 in Canberra.

This year marks the **25th anniversary** of this significant initiative, which fosters meaningful connections between the **STEM sector and policymakers**.

I, *Dr. Suzanne Estaphan*, had the privilege of representing our society council alongside my colleague, *Dr. Noni Frankenberg*. Together, we engaged with policymakers, industry leaders, and fellow scientists to explore how **research informs decision-making and national policy development**.

Key Highlights: What Stood Out?

- Dr. Noni Frankenberg reflected on some standout moments:

"One of the most significant moments of Science Meets Parliament was hearing Minister for Industry & Science, Hon. Ed Husic MP, speak at the National Press Club. His insights on the role of science, technology, and innovation in shaping Australia's future reinforced the importance of continued investment in STEM translation research."

"Another highlight was the STEM in the House: Parliamentarians' Perspectives session. This panel discussion tackled critical questions, such as:

- *What are the biggest challenges currently facing Australia?*
- *How can STEM provide solutions?*
- *How do policymakers access and evaluate scientific evidence in policy debates?*

"The panel, chaired by Mark Stickells, featured Senator Perin Davey, Senator Steph Hodgins-May, Aaron Violi MP, Zaneta Mascarenhas MP, and Allegra Spender MP. Their discussion provided valuable insights into the challenges of integrating scientific evidence into decision-making and the ways researchers can better communicate their work to policymakers."

- From my perspective, some of the most impactful moments included:

"Meeting superstars of STEM was truly inspiring. Attending the National Press Club address with Ed Husic MP and later the gala dinner with Governor-General Sam Mostyn provided a rare opportunity to witness firsthand how science and policy intersect at the highest levels."

"A particularly exciting moment for me was pitching to a senator on the core concepts of physiology and its role in Australian higher education. I believe physiology research plays a pivotal role in empowering communities with educational tools to make informed health decisions. As part of the national taskforce of Australian physiology educators, I work on defining and advancing these core concepts—key knowledge that underpins how our bodies respond to health challenges. Ensuring this understanding is accessible, particularly in culturally diverse communities, is crucial for moving from equity toward justice in both healthcare and education."

Personal Experience: What Impact Did SMP Have?

- Dr. Noni Frankenberg shared:

"Attending Science Meets Parliament was an incredible experience, offering a firsthand look into how policymaking works and how science can influence government agendas. Meeting Tracey Roberts MP was a standout moment—her appreciation for basic research and her understanding of its long-term impact reinforced the importance of engaging with policymakers."

"Professionally, this experience deepened my appreciation for the role of science advocacy. It highlighted that while research is crucial, effective communication with decision-makers is just as vital

in ensuring scientific findings translate into meaningful policy and funding support."



- For me, one of the most memorable moments was:

"Interacting with Nobel Laureate Brian Schmidt and attending his interview with Australia's first (and female) astronaut, Katherine Bennell-Pegg, was an unforgettable experience. Their stories of resilience and leadership reinforced the importance of advocating for women in STEM and inspiring the next generation of scientists."

"As an AuPS delegate, I hope to exemplify the potential of women in STEM and leadership, and I was deeply moved by the inspiring stories shared by my fellow delegates."



Networking Opportunities: Connecting Across Disciplines

- Dr. Noni Frankenberg noted:

"The event provided an excellent platform to connect with researchers, policymakers, and science communicators from various fields. These interactions were invaluable in strengthening ties between AuPS and broader scientific communities, fostering potential collaborations."

- I wholeheartedly agree! I also found networking to be one of the most rewarding aspects of the event:

"The opportunity to engage with policymakers and fellow researchers highlighted the importance of interdisciplinary collaboration. Strengthening relationships between AuPS and the broader scientific and policy communities is key to ensuring that physiological research continues to play a vital role in shaping national health strategies."

"By building these connections, we can advocate for greater visibility of physiology research in national policy discussions, support emerging scientists in policy engagement, and foster collaborations that advance both education and public health initiatives."

Future Directions: The Role of Science in Policy and Public Engagement

- Dr. Noni Frankenberg observed:

"One of the key trends that emerged from SMP was the growing intersection between science, policy, and public engagement. There is increasing recognition that scientists must take an active role in policy discussions to ensure research informs decision-making."

"Additionally, the importance of science literacy continues to rise, with policymakers showing a keen

interest in initiatives that improve public understanding of science. This presents an opportunity for AuPS and other scientific societies to develop education and outreach programs that enhance trust in scientific expertise."

- From my perspective:

"I came away from SMP with a renewed commitment to science advocacy. A key takeaway is that scientists cannot afford to work in silos—we must engage with policymakers, the public, and interdisciplinary collaborators to maximize the impact of our work. Science literacy is not just about disseminating knowledge; it's about ensuring communities have the tools to make informed decisions about their health and wellbeing."

"Moving forward, I see a critical opportunity for AuPS to lead in this space, particularly in strengthening the connection between physiology education and public health awareness. By proactively engaging in policy discussions, we can help shape a future where scientific research translates into tangible benefits for society."

Final Thoughts

Science Meets Parliament 2025 was an enriching and eye-opening experience for both me –*Dr. Suzanne Estaphan-* and Dr. Noni Frankenberg. As AuPS delegates, we are committed to **advocating for the role of physiology in shaping health and education policies, fostering interdisciplinary collaborations, and ensuring that science remains at the forefront of national decision-making**. We look forward to continuing these discussions and working towards a stronger connection between the scientific and policy communities.

2025 marks the 65th anniversary of the AuPS and we are looking forward to celebrating at our annual meeting to be held at the University of Western Sydney (Parramatta) on 23 - 26 November 2025.



Australian Physiological Society Meeting
Parramatta, NSW
November 2025

Among a range of high-level symposia curated by Council and the LOC, we will enjoy another **historical symposium** recapitulating the contribution of Australian physiology to all aspects of our discipline, including Neurophysiology and Respiratory Physiology (*Prof. Simon Gandevia*), Fetal and Maternal Physiology (*Em/Prof. Eugenie Lumbers*), Muscle and Exercise Physiology (*Prof. Gordon Lynch*), Physiology Education (*Prof. Andrew Moorhouse*), Membrane Physiology (*Em/Prof. David Allen*) and Cardiovascular Physiology (*D/Prof. David Adams* and *Prof. Livia Hool*).

We will also host **2 education symposia**- *speakers: Dr Nadia Cerminara, University of Bristol, Dr Martin Brown, Dr Luli Faber and Wally Thomas, A/Prof. Sarah Etherington, A/Prof. Angelina Fong, Prof. Julia Choate, Prof. Louise Lexis, Dr Chantal Hoppe-*

and **7 scientific symposia** – International speakers: *Dr Pratik Thakkar (PSNZ ECR winner), Dr John Ussher, University of Alberta, Canada, A/Prof. Gretchen Meyer, University of Washington, Dr Daniel Ham, University of Basel, A/Prof. Chris Fry, University of Kentucky, Prof. Jørgen Wojtaszewski, Copenhagen University, Prof Bo Wang, University of Illinois Urbana Champaign* – Local speakers: *Dr Nathan Absalom, Dr Nathan Absalom, Dr Jaqueline Stoeckli, Dr Rocio Finol-Urdaneta, Dr Linda Nguyen, Dr Marissa Caldwell, Dr Avnika Ruparelia, Dr Kelly Walton, Dr Bianca Bernardo, Dr Sarah Turpin-Nolan, A/Prof. Kim Mellor, A/Prof. Grigori Rychkov, A/Prof. Chris Shaw, A/Prof. Philip Ahring, A/Prof. Shu Ngo, Prof Sean McGee, Prof. Brian Drew, Prof. Brad Launikonis*



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This issue of AuPS News was compiled by Suzanne Estaphan with many thanks to the generous contributors.

The next issue of AuPS News will be distributed to members in June 2025.

All contributions for AuPS News should be sent to: suzanne.estaphan@anu.edu.au before the end of May.

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