



ARC Industrial Transformation Training Centre for Cryo-electron Microscopy of Membrane Proteins

Quarterly newsletter

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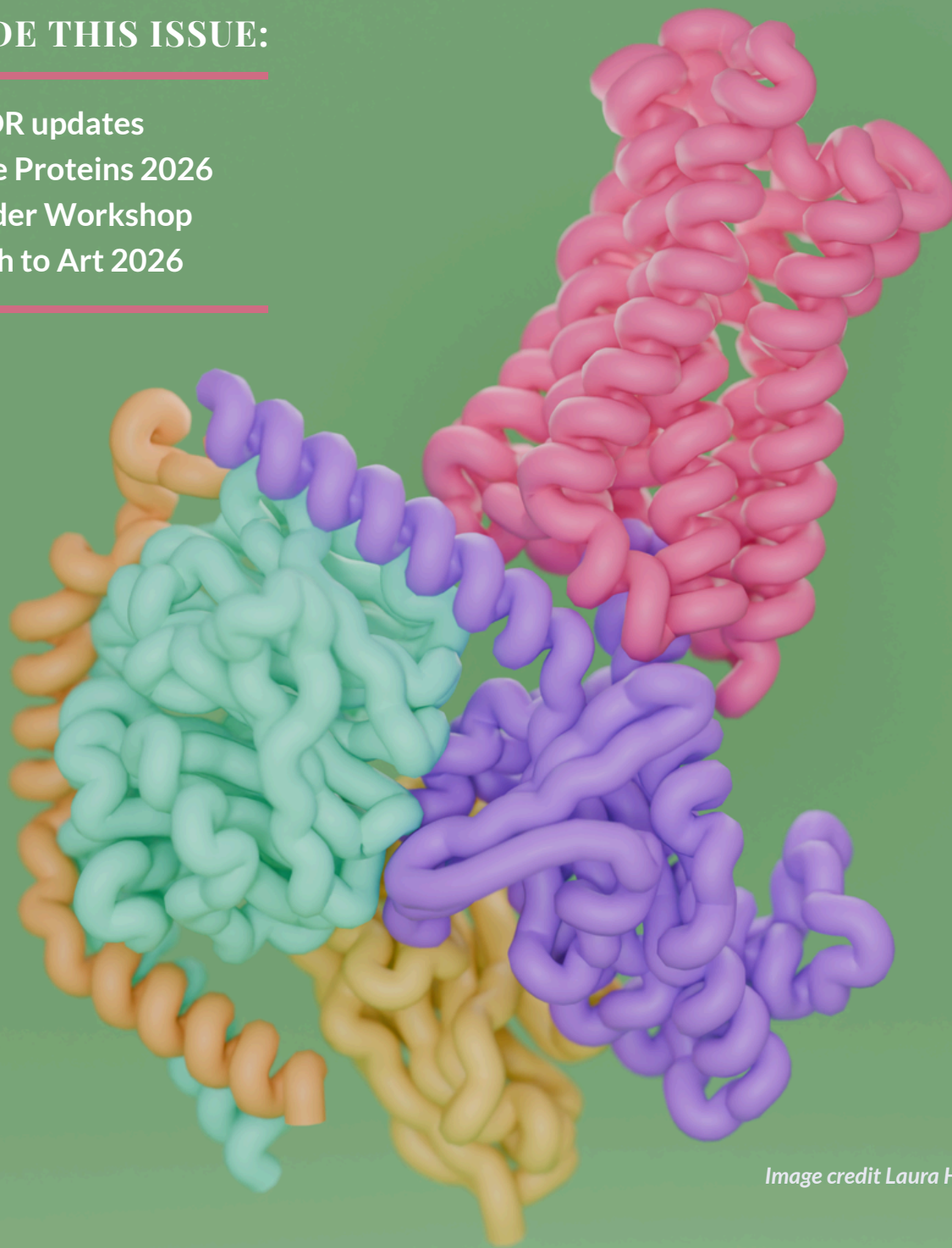


Image credit Laura Humphreys



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bio21
institute

MOLECULAR
HORIZONS



UNIVERSITY
OF WOLLONGONG
AUSTRALIA



WEHI
brighter together

From the Director

Prof. Patrick Sexton

In this issue, we celebrate all the successes of the Centre members at the annual Lorne Proteins Conference 2026, where numerous members presented their cutting-edge research, and where all recipients of the prestigious Anders Early Career Award were CCeMMP members – congratulations to Brian Cary, Yan Jiang, Ashleigh Kroop and Bronte Johnstone! We highlight that many of the members have hit 2026 running with promotions, grant and travel funding, publications and solved structures. A shout out to Prof. Arthur Christopoulos and A/Prof.

Alisa Glukhova for receiving the 2025 NHMRC Peter Doherty Investigator Grant Awards in Leadership and Emerging Leadership categories respectively. Further congratulations to A/Prof. Alisa Glukhova for being awarded the The Commonwealth Health Minister's Award for Excellence in Health and Medical Research as the highest-scoring applicant in the Emerging Leadership. The Centre sees more Centre students racing to completion with exit seminars and others heading to their industry placements. We celebrated the women of the Centre as part of International Women's Day and their support and contributions to their teams, mentees and peers. We are excited to be opening up our next round of Bench to Art Competition for 2026 and seeing what creations the community have up their sleeve.

Congratulations to everyone for going strength to strength, and for all their achievements thus far in 2026!



Prof. Patrick Sexton
Director



CCeMMP Director,
Prof. Patrick Sexton



Did you know?....

Did you know... Researchers have built an AI scientist. Apparently, it is able to read through existing literature on a problem (although it is biased to papers with high citation counts), formulate a hypothesis, attempt solutions, write the paper and do some of the peer reviewer work by evaluating its own work. It then builds on the process by starting the cycle all over again. But don't fear, the output is not earth shattering and your lab coats and safety glasses are safe, it is not able to do labwork (yet)

Nature 633, 266 (2024) doi: <https://doi.org/10.1038/d41586-024-02842-3>

On the cover: From our Monash Node - Human M4 muscarinic acetylcholine receptor Gi1 complex (mini-Gsi chimera) bound to the bitopic agonist C110, unpublished
Kaoullas MG, Mobbs JJ, Venugopal H, Thal DM

Image credit Dr. Laura Humphreys.

ICHDR Update

Our ICHDRs Marialena Georgopoulou, Alok Pradhan and Minakshi Baruah presented their PhD exit seminars ahead of submitting their theses this quarter.

Marialena Georgopoulou



Marialena Georgopoulou presented her talk “Structural and biophysical studies of key proteins involved in brain damage” on the 12th of March.

Alok Pradhan



Alok Pradhan presented his talk “Pharmacological Profiling of G Protein Promiscuity in AT1R, CCR2, and CXCR2: Biochemical Optimization of AT1R and CCR2 for Structural Studies” on 30th of March.

Minakshi Baruah



Minakshi Baruah presented her talk “Structural Understanding of Vasopressin Receptors” on 30th of March.

ICHDR Update

With the completion of their final presentations and theses submitted this quarter, ICHDRs Marialena Georgopoulou and Minakshi Baruah begin reflecting on their last few years while waiting for their thesis results.

Marialena Georgopoulou reflection



“Submitting my PhD thesis feels truly unreal! It wasn’t an easy path, but looking back, it was incredibly rewarding. My early PhD years at The University of Melbourne were largely defined by experiments that stubbornly refused to work despite my tremendous efforts, and there were plenty of days when it felt incredibly tough. But beneath the frustration was my – even more stubborn! – scientific curiosity and a determination to figure it all out. Those struggles taught me so much, but mostly that PhD journeys do more than just “produce” good researchers and technical experts; they build resilience, empathy, and character. Additionally, I was incredibly lucky I had the opportunity to complete an industrial commercialisation internship during my PhD. It helped me build essential professional soft skills and gave me a firsthand look into the start-up world, showing me exactly what it takes to translate basic research into real-world therapeutic treatments. I couldn’t have navigated this journey without my brilliant supervisors, PhD committee, and CCeMMP, alongside my supportive husband, family, and friends. I’m so grateful for all the amazing experiences and the people who helped me grow into both the scientist and the person I am today. I’m looking forward to figuring out what the future holds!”

“Completing my PhD at Monash University has been an incredibly rewarding and transformative journey. Over the past four years as a CCeMMP student, I have evolved from a student into an independent scientist, developing both technical expertise in structural biology and pharmacology, and the confidence to think critically. This journey has been intellectually enriching while also building resilience and shaping my scientific identity. A particularly impactful experience was my industry placement at Pfizer, where I gained valuable insight into structure-based drug design and the translation of fundamental research into real-world applications. I am especially grateful to Dr. Seungil Han and Dr. Joshua Lees for their mentorship and support during this time, as well as to my academic supervisors Patrick and Denise for their continuous guidance. These experiences have profoundly influenced my growth, and I leave my PhD with a deep sense of gratitude and a strong motivation to contribute meaningfully to science. As much as I love science, I am in love with this quote too-“Science will win”- and these four years have evolved me. Thank you for believing in me. Thank you for making me a better person. Thank you for everything.”



Minakshi Baruah reflection

ICHDR Exit Seminars

We have our next ICHDRs exit seminars coming up. We encourage all Centre members and affiliates to attend and support our students as they present their important findings from their PhD candidature. A zoom link will be released closer to the date for members, please look out for this in your inbox! If outside of the Centre, please contact ccebmp@monash.edu if you would like the link.



Mayada Mazher
UoM ICHDR

July 2026 in person at Bio21 and via Zoom, exact details to be announced closer to date.



Ania Beyger
Monash ICHDR

August 2026 in person at MIPS and via Zoom, exact details to be announced closer to date.

Industry Placements

Our WEHI student Xiaomin Wang and UoM student Inamur Rahman are next up to gain invaluable industry experience at their respective placements at Thermo Fisher Scientific. Xiaomin departed Melbourne on the 16th of April and arrived in Eindhoven (Netherlands) and is currently waiting to formally commence her placement with Thermo Fisher Scientific. Inamur Rahman will be heading to the Thermo Fisher Scientific site located in Cambridge (UK) to commence his placement on the 6th of May.

MariaKatarina Lambourne, our UoW student, continues her placement with the Thermo Fisher Scientific marketing department remotely.

The next placements are being organised for September 2026 with Thermo Fisher Scientific and Sanofi.

Catching up with...

One of the core pillars of the Centre is build strong linkages with drug discovery and development industries to advance Australia's biotechnological capability. We are committed to training industry-ready graduates in cryo-EM of membrane proteins. As our ICHDRs are gradually finishing their projects and moving to their next big thing, the Outreach and Public Engagement Committee are looking to see where are they now?

This quarter we are proud to feature Dr. Qinghao Ou, our Monash ICHDR and second CCEMMP graduate, who has commenced his career as a Postdoctoral Fellow at Monash University in the Thal Research Group.



Catching up with...

Qinghao Ou

**Postdoctoral Fellow
at MIPS**



Who am I?

I am a CCEMMP PhD graduate and former 2023 CCEMMP Executive student representative whose research focused on GLP-1R/GIPR co-agonism mechanisms, now continuing GPCR structure-based ligand design research as a postdoctoral fellow at A/Prof. David Thal's lab at the Monash Institute of Pharmaceutical Sciences (MIPS).

Transition?

My motivation for remaining in academia at MIPS is the opportunity to develop novel therapeutics for lymphatic dysfunction while collaborating with multidisciplinary local and international experts across diverse areas. This will broaden my knowledge of the drug discovery pipeline. Also, I enjoy the academic vibe at MIPS.

Present and future

I aim to expand my knowledge in structure-based drug design and following pharmacological/biophysical validation for small molecule ligands targeting class A GPCRs during my postdoctoral research. My long-term goal is to integrate my expertise in cryo-EM, GPCR biology, and emerging computational tools to accelerate GPCR drug discovery.

Questions or comments? Reach out to the CCEMMP Outreach and Public Engagement Committee (sarah.piper@monash.edu).

CCeMMP Mentoring Program update

In 2023, CCeMMP set up mentoring opportunities for our ICHDRs and assigned them both an academic and industry mentor. As the Centre students finish their PhD chapters, we have asked some students to reflect on some strong mentoring relationships they have built and the knowledge and advice they gained along the way.



Marialena Georgopoulou

“My mentoring relationship with Prof. Chris Langmead was an amazing opportunity offered to me through the CCeMMP mentoring program. As my industry mentor, Chris really helped me understand what actually happens after graduation and gave me a much better idea of how to navigate both academia and industry. Importantly, he helped me look at it through the lens of finding out what interests me most in the long run – what actually excites me. But honestly, what I valued most was how understanding he was. We talked openly about the stress of figuring out the future, and he constantly reminded me that it’s completely normal to feel lost or unsure about what’s next, making our chats feel like a safe, pressure-free space.”



“On top of that personal support, Chris was great at answering all my questions about the commercial side of science. We had some really interesting discussions about things like what it takes to approach investors, or how you figure out when a basic research project is actually ready to transition into the industry world. Having a mentor who gets both the business and academic sides of science, alongside the human side of figuring out your career, meant a lot to me. I really admire Chris both as a professional and as a person, and I truly appreciated every conversation we had.”

Prof. Chris Langmead



“Marialena has been a terrific student to mentor: open to different perspectives, curious about opportunities for the future and willing to devote time and consideration to our discussions. I am looking forward to hearing about her future successes!”



Minakshi Baruah

“I still remember my very first interaction with Dr. Seungil Han at the beginning of my PhD, and since then, he has been there throughout my entire PhD journey. He has been an amazing mentor or honestly, I should say, a friend.

One thing I truly admire about Seungil is his ability to push someone’s critical thinking, which is incredibly important in scientific discovery. He has played a major role in shaping me into a scientist. More importantly, he taught me not to sit with a problem and feel stuck by it. Because of him, I learned to focus more on finding solutions rather than dwelling on the problem itself, no matter how big or small it may be. Seungil also taught me how to prioritise things, not only in science, but also in life in general.”



“My placement at Pfizer under Seungil’s mentorship was transformative for me both scientifically and personally. He taught me how to approach complex scientific questions in a simpler and more practical way, and he encouraged me to think beyond just generating data towards understanding the bigger impact of scientific discovery. His mentorship also gave me a deeper appreciation for translational science and collaborative research in industry.

Even after returning to Melbourne, we have stayed in close contact. He continues to mentor me and guide me through the complexities of science with patience and clarity. I genuinely consider myself very lucky to have had Seungil as a mentor throughout my PhD journey.”

Dr. Seungil Han



Node Updates

Monash University Node

Prof. Denise Wootten, Node Leader, Monash University



Prof. Arthur Christopoulos awarded the 2025 NHMRC Peter Doherty Investigator Grant

Prof. Arthur Christopoulos received the prestigious 2025 NHMRC Peter Doherty Investigator Grant Awards in Leadership for the grant “Allosteric modulation of muscarinic receptors for the treatment of neurocognitive deficits”. This Award recognises and celebrates the highest ranked recipient in the Emerging Leadership and Leadership categories of Investigator Grants.

Drs. Natalie Diepenhorst and Tracy Josephs promoted to Level C

Drs. Natalie Diepenhorst and Tracy Josephs were both promoted to Level C in the latest Monash University promotions round, congratulations to both!



Dr. Tracy Josephs awarded the Advancing Women’s Success Grant

Dr. Tracy Josephs was awarded the Advancing Women’s Success Grant from Monash University. This grant aims to support the career progression of early-mid career academic women with caregiving responsibilities and assists the university in fostering talent and progressing gender equity in senior roles within the academy.



Dr. Brian Cary awarded Anders Early Career Award

Dr. Brian Cary was awarded one of the Anders Early Career Awards from Lorne Proteins 2026 for his work “Receptor put to rest: The structure and dynamics of an arrestin-GPCR complex”.

Monash Node members awarded \$22.4 million AUD from the ARPA-H

Prof. Arthur Christopoulos and Dr. Celine Valant, alongside a team of MIPS researchers, were awarded \$22.4 million AUD from the US Advanced Research Projects Agency for Health (ARPA-H) for the 5 year program ARPA-H’s GLIDE (Groundbreaking Lymphatic Interventions and Drug Exploration) program to develop first-in-class oral medicines that restore lymphatic vessel pumping and transport.



The University of Melbourne/Bio21 Node

A/Prof. Isabelle Rouiller, Deputy Director and Node Leader, UoM



Dr. Ashleigh Kroop awarded the Anders Early Career Award and Syd Leach Award

Dr. Ashleigh Kroop was the top ranked applicant and awarded one of the Anders Early Career Awards and the Syd Leach Award from Lorne Proteins 2026 for her work “novel and widespread mechanism of membrane-coupling drives microbial respiration”.

Dr. Bronte Johnstone was awarded the Anders Early Career Award

Dr. Bronte Johnstone was awarded one of the Anders Early Career Awards from Lorne Proteins 2026 for her work “Capturing viral membrane fusion by cryo-ET using an in vitro reconstitution workflow”.



Milad Reyhani awarded 2026 Millis Jackson Research Grant

Milad Reyhani was awarded the 2026 Millis Jackson Research Grant (\$4315 AUD) from The University of Melbourne for the project Structure Meets Identity through Single-Cell Genomics Directly from Cryo-EM Grids. The grant is to enable research students additional funding for their work in the areas of biotechnology or environmental microbiology.



Dr. Bronte Johnstone awarded travel grant from International School of Crystallography

Dr. Bronte Johnstone was awarded a travel grant from the International School of Crystallography to the value of \$1000 EUR to attend the 62nd Course of the International School of Crystallography titled “From structural biology to structural cell biology with the aid of machine learning”.

Marialena Georgopoulou was awarded a travel grant from The Biophysical Society

ICHDR Marialena Georgopoulou was awarded a \$700 USD travel grant from The Biophysical Society for her selected Platform talk and Poster Presentation Decoding PLD3: “Structural and functional discoveries with therapeutic potential for Alzheimer’s Disease” at the 70th Annual Meeting of The Biophysical Society (Feb 21-25 2026, San Francisco, CA, USA).



Dr. Naveen Vankadari was awarded a 2026 SBS EMCRA Travel Award

Dr. Naveen Vankadari was awarded a 2026 SBS Early-Mid Career Researchers and Academics Association (EMCRA) International Travel Award (\$750 Aud) from The University of Melbourne to support conference attendance and lab visits to foster research and project development.





Dr. Daniel Fox awarded a Lorne Proteins 2026 Poster Presentation Award

Dr. Daniel Fox was awarded a Lorne Proteins 2026 Poster Presentation Award for his poster presentation “AI-designed protein inhibitors can block hemoglobin binding and inhibit growth of pathogenic *E. coli*”.

Sathya Muthusamy awarded a Lorne Proteins 2026 Poster Presentation Award

Sathya Muthusamy was awarded a Lorne Proteins 2026 Poster Presentation Award for her poster presentation “Structure of the autotransporter adhesin RadD from *Fusobacterium nucleatum*”.



Janik Clement awarded a Lorne Proteins 2026 Poster Presentation Award

Janik Clement was awarded a Lorne Proteins 2026 Poster Presentation Award for his poster presentation “AI-Guided De Novo Protein Binder Design Targeting RXFP1: A Computational-to-Experimental Pipeline”.



Doulin Sheperd awarded a Lorne Proteins 2026 Poster Presentation Award

Doulin Sheperd was awarded a Lorne Proteins 2026 Poster Presentation Award for his poster presentation “Investigating the structural basis of effector delivery through a bacterial Type IV Secretion System”.



University of Wollongong Node

A/Prof. Gökhan Tolun, Node Leader, WEHI



MariaKatarina Lambourne awarded a Lorne Proteins 2026 Poster Presentation Award

ICHDR MariaKatarina Lambourne was awarded a Lorne Proteins 2026 Poster Presentation Award for her poster presentation “A Twist in the Tail: The Structural Basis of Kv7.2/Kv7.3 M-channel Assembly at Helix D”.

Dr. Aidan Grosas awarded UOW-ANSTO 2026 Seed Funding

Dr. Aidan Grosas alongside collaborator Dr. Annmaree Warrender were awarded \$15,800 UOW-ANSTO 2026 Seed Funding for the project “Decoding beta-crystallin assembly and structure to close a key gap in cataract biology”.



Dr. Simon Brown commenced Marsden Grant with collaborators

Dr. Simon Brown commenced his Marsden Grant with collaborators Profs Peter Mace and Ute Hoecker on the 1st March. They were awarded \$941,000 NZD for their project “Helping plants see the light - plant specific regulation of the COP1 ubiquitin ligase”.



Farewell Dr. James Bower, congratulations Dr. Simon Brown

Early this year, Dr. James Bower finished his role as the Manager of the Cryo-EM facility at Molecular Horizons and the University of Wollongong. Since, Dr. Bower has been appointed the Cryo-EM Facility Director at the University of California in Santa Barbara, US. We thank James for his contributions to the Centre and his support in the technical training of ICHDRs.



We congratulate Dr. Simon Brown for his appointment as the new Manager of the Cryo-EM facility at Molecular Horizons and the University of Wollongong.

WEHI Node

Prof. Isabelle Lucet, Node Leader, WEHI

A/Prof. Alisa Glukhova awarded a NHMRC Peter Doherty Investigator Grant Award and The Commonwealth Health Minister's Award for Excellence in Health and Medical Research, and promoted to Level D.



A/Prof. Alisa Glukhova was awarded the prestigious NHMRC Peter Doherty Investigator Grant Award for Emerging Leadership, for her project “Decoding the Mechanisms of Signal Propagation through the Wnt Signalling Pathway”. This Award recognises and celebrates the highest ranked recipient in the Emerging Leadership and Leadership categories of Investigator Grants. Further, A/Prof. Glukhova was awarded The Commonwealth Health Minister's Award for Excellence in Health and Medical Research as the highest-scoring applicant in the Emerging Leadership Level 2 category. She received a further \$50,000 to help support her research in addition to her recent 5-year NHMRC Investigator Grant funding.

This month A/Prof. Glukhova was promoted to Level D and commenced her new level in January 2026. Congratulations Alisa!

External Members and Affiliates Update

Dr. Yan Jiang was awarded the Anders Early Career Award

Dr. Yan Jiang was awarded one of the Anders Early Career Awards from Lorne Proteins 2026 for her work “One high-order ion coupling mechanism generates multiple SLC1A stoichiometries”.



New members

The Centre continues to reach out to scientists, both within our existing Nodes and outside of the founding academic institutions, who are involved in cryo-EM and membrane protein research to provide opportunities for them to become members or affiliates of the Centre. If you are interested in becoming a member or affiliate, please reach out to us at ccemmp@monash.edu.

We welcome members and affiliates: Geoff (Xiaoyu) Zhang (VCCRI), Julian Vivian (VCCRI) and Haozhe We (UoM).

Recent Centre Activities

Lorne Proteins, 2026

The 51st Lorne Conference on Protein Structure and Function was held from 8–12 February 2026 at the Mantra Hotel in Lorne, Australia. The meeting once again brought together researchers from across Australia and the world to discuss recent advances in structural biology, protein science, and molecular mechanisms in health and disease.

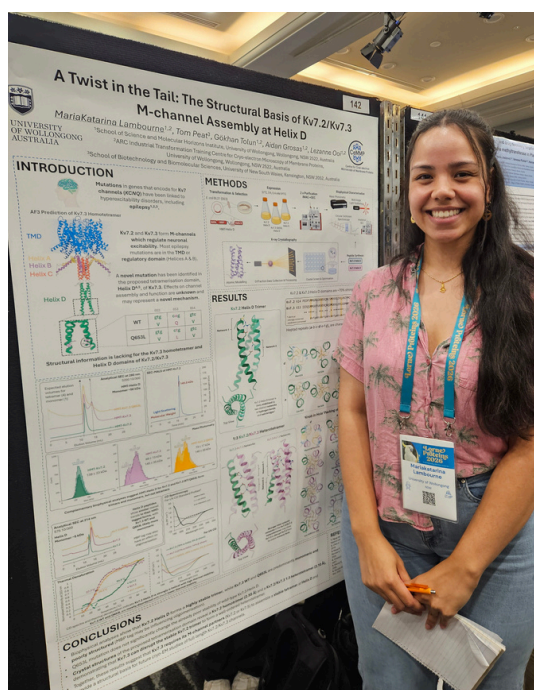
Strong Engagement from the CCEMMP Community

Members of the CCEMMP community were actively involved throughout the conference, contributing oral presentations, lightning talks, and numerous poster presentations. Centre members from Monash University, the University of Melbourne, ANU, and UQ were well represented across the scientific program including presentations from Dr. Fabian Munder, Dr. Luca Troman, Dr. Emily Furlong, Dr. Kai-En Chen, Dr. Yu-Shang Low, and ICHDR Riya Josephs, just to name a few.

Many of our CCEMMP students also presented their work in engaging poster sessions and won poster prizes - well done to ICHDR MariaKatarina Lambourne, Dr. Daniel Fox, Janik Clement, Sathya Muthusamy and Doulin Shepherd!

Early Career Recognition

The prestigious Anders Early Career Award session was a particular highlight this year – and all speakers in this session were CCEMMP members and affiliates: Dr. Brian Cary, Dr. Yan Jiang, Dr. Bronte Johnstone, and Dr. Ashleigh Kropp. Dr. Ashleigh Kropp being the highest ranked recipient, also won the Syd Leach Award. This highlights the strength of emerging talent within the structural biology and membrane-protein research community.



ICHDR MariaKatarina Lambourne



Dr. Brian Cary presenting in the Anders Early Career Award Session

Scientific Highlights

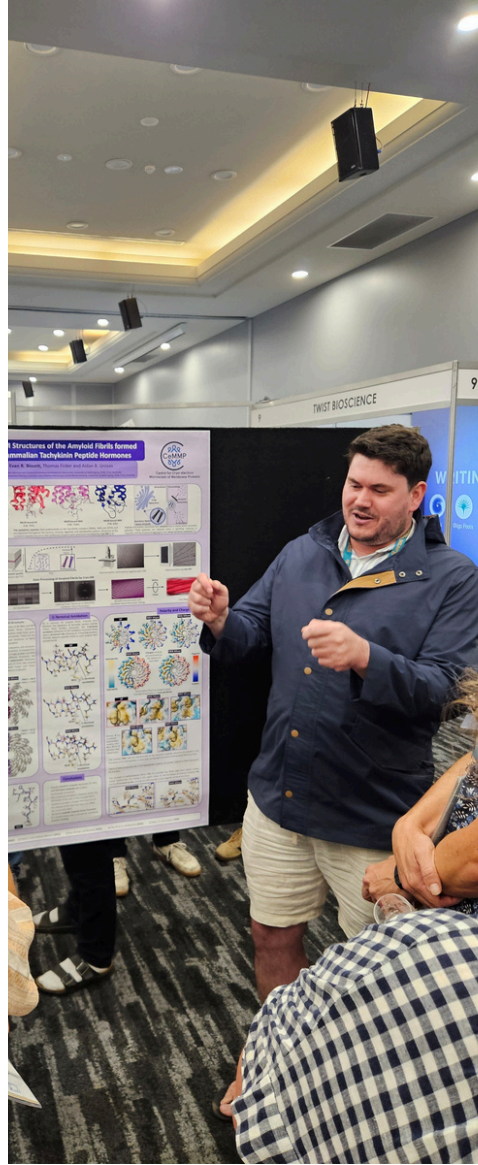
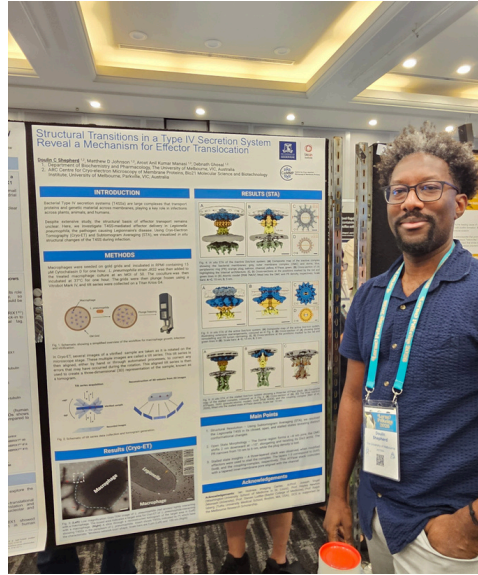
This year's program featured a strong emphasis on membrane proteins, transport systems, and receptor biology, alongside advances in cryo-EM and cryo-ET methodologies, which closely aligns with CCeMMP research priorities. Topics ranged from ion channels and transporters to membrane-associated complexes, microbial systems, and viral structures.

Looking Ahead

The Lorne Conference continues to provide an important platform for scientific exchange, collaboration, and networking within the Australian structural biology community. We look forward to strong engagement from CCeMMP members in future meetings.



CCeMMP members at Lorne Proteins 2026



CCeMMP members at Lorne Proteins 2026

International Women's Day 2026

With International Women's Day on the 8th of March, the Centre celebrated the women in CCEMMP who show up every day and boast massive personal achievements in their careers, communities and of course, science!

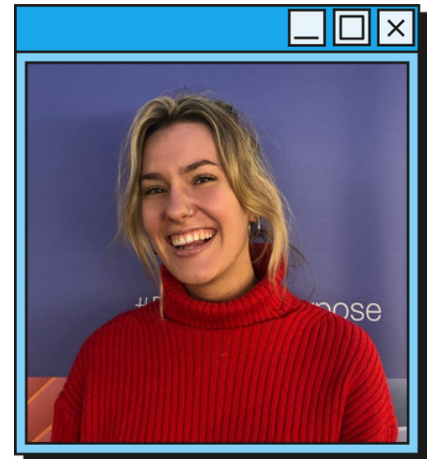
Members were encouraged to self-nominate or share a story about a woman in their scientific career. The Centre proudly shared these stories on the Centre social channels. Well done to all the women in the Centre for all their inspiring achievements!



Winnie Tan
WEHI



Sepideh Valimehr
UoM, Bio21



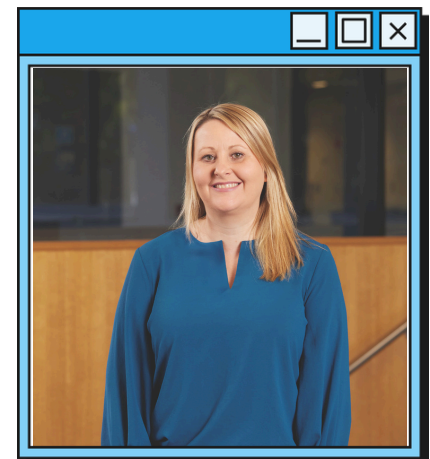
Ania Beyger
Monash University



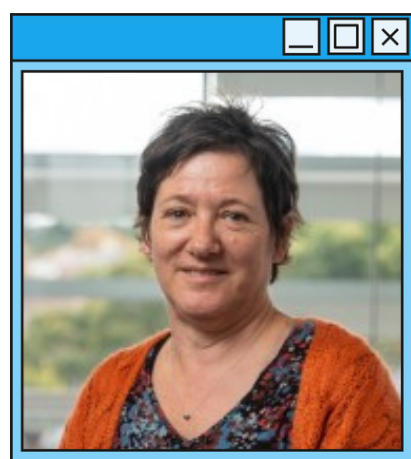
Bronte Johnstone
UoM, Bio21



Sarah Piper
Monash University



Denise Wootten
Monash University



Isabelle Lucet
WEHI

Single Particle Cryo-EM workshop at IHIC

IHIC recently held a Single Particle Cryo-EM workshop on the 29th and 30th of April, focussed on introducing participants to the principles and practical workflow of this powerful structural biology technique. The workshop provided hands-on and conceptual training covering key steps in the pipeline, including sample preparation using a Vitrobot plunge freezer and data acquisition on Talos Arctica and Titan Krios microscopes. There were 8 attendees from WEHI and the University of Melbourne. The workshop was led by instructors Dr. Sepideh Valimehr, Dr. Andrew Leis, Prof. Eric Hanssen, and Dr. Hamish Brown, who guided participants through both the experimental setup and imaging process, helping them understand how biological specimens are preserved and visualised for high-resolution structural analysis.

Upcoming Events



Our seminar series continues on the second Tuesday of the month, 10:00 AM - 11:00 AM (AEST/AEDT). This coming quarter we start our 2026 seminar series with:

- Professor Lezanne Ooi, University of Wollongong, AU, 12th May 2026
- Assistant Professor Edward Twomey, Johns Hopkins Medicine International, USA, 9th June 2026
- Special: Dr. Julia Mahamid, EMBL, Germany, 4:00-5:00pm, 23rd June 2026
- Hari Venugopal (third Tuesday), Monash University, Australia, 21st July 2026

Miss a seminar? Most are recorded so you can access them from our website (<https://ccemmp.org/events/ccemmp-seminar-series/>) or our youtube channel.

Upcoming training

- Single_particle cryoEM data processing workshop led by Dr. Hamish Brown, 2-3 June, 2026 at IHIC
- Tomography workshop (Hands-on microscope and processing) led by Dr. Hamish Brown, 19-20 August, 2026 at IHIC

Blender Workshop 2026

This workshop marks our final CCEMMP sponsored Blender Workshop for our CCEMMP community! With our annual Bench to Art competition coming up, are you looking for some inspiration or to scratch up some of your skills? Our CCEMMP Outreach Committee has organised a hybrid workshop for 16 June 2026 at 9:30am -3:00pm. Please refer to the poster below for details and don't forget to sign up via the QR code!

CCeMMP Bench to Art Competition 2026

We are excited to announce our annual CCEMMP Bench to Art 2026 Competition is coming up! This will mark our final year of the competition, and we hope that the CCEMMP and scientific community all get involved and submit your most creative art designed from your research! Please refer to our website (via the QR code) for all the details!



BLENDER WORKSHOP

LEARN ABOUT:

FUNDAMENTALS
MOLECULAR NODES
SHORT MOVIES

TUESDAY 16.06.2026
AT MIPS OR VIA ZOOM



SPEAKER: SARAH PIPER,
CCEMMP OUTREACH TEAM

TIME: 9.30AM - 3.00 PM

LOCATION:
AND ONLINE

MIPS, 399 ROYAL PARADE,
PARKVILLE VIC 3052

REGISTER NOW

QUESTIONS? SARAH.PIPER@MONASH.EDU

ARC CCEMMP 3rd Annual

Bench to Art EXHIBITION



SAVE THE DATE!

**Submissions
Open:**

**Tuesday
11th June 2026**



Laura Humphrys 'Too Hot to Chandle'
Winner Judge's Award for 2025 Bench to Art exhibition

The 3rd CCEMMP 'Bench to Art' Exhibition showcases the artistic side of membrane structural biology in a virtual exhibition during National Science Week.

Interested? Questions?
sarah.piper@monash.edu



More info & past
entries:



<https://ccemmp.org>





12th Pharmacology of G Protein-Coupled Receptors & Molecular Pharmacology of GPCRs (MPGPCR) Joint Satellite Meeting of the 20th World Congress of Basic and Clinical Pharmacology (2026)

9-11 July 2026

The 12th iteration of the Molecular Pharmacology of G Protein Coupled Receptors (GPCRs) meeting will be held jointly with the long-standing IUPHAR World Congress of Pharmacology satellite meeting: Pharmacology of GPCRs (formerly named Pharmacology of Adrenoceptors Symposium). At this joint satellite meeting, key presentations from leading international researchers will showcase new molecular insights, the latest tools and technologies that are changing our understanding of GPCR function, and translation of basic research into the clinic.

The meeting provides a relaxed interface between students, postdoctoral fellows, academic and industrial scientists from around the globe, encouraging interaction, collaboration and debate on the latest research. This is a focused and intimate meeting, emphasising novel concepts in GPCR pharmacology and drug discovery encompassing structural biology and biophysical studies, receptor pharmacology (ligand bias and allostery), chemical biology, cell signalling and systems biology. We look forward to welcoming you to Melbourne to share your science!

More information regarding the meeting can be found [here](#).
CCeMMP is sponsoring the event.



CCeMMP Symposium 2026

This year will mark our final CCeMMP Symposium, we would like to recruit members to join our CCeMMP Symposium Committee to support and organise the symposium.

This is a great opportunity for ECRs and students to add to their CVs and to organise a scientific event.

If you are interested, please email jackie.how@monash.edu directly.

Outreach

In the Media

- **Prof. Brett Collins** - <https://www.internationalwomensday.com/Missions/22117/University-of-Queensland-s-Institute-for-Molecular-Bioscience-discusses-support-for-women-and-research-into-women-s-health>
- **Prof. Arthur Christopoulos** - <https://neoskosmos.com/en/2026/04/01/news/community/professor-arthur-christopoulos-earns-nhmrc-research-excellence-award/>
- **Dr. Shabih Shakeel** – Research spotlight - <https://www.linkedin.com/feed/update/urn:li:activity:7441982395316289537/?originTrackingId=X5HC22drw63oafCOKVhSVw%3D%3D>
- **A/Prof. Debnath Ghosal, Dr. Matthew Johnson and Bindusmita Paul** - <https://theconversation.com/first-contact-that-may-have-led-to-complex-life-on-earth-finally-witnessed-by-scientists-280173>
- **A/Prof. Debnath Ghosal, Dr. Matthew Johnson and Bindusmita Paul** - https://phys.org/news/2026-04-asgard-earth-tiny-tubes-reveal.html?utm_source=bsky.app&utm_medium=social&utm_campaign=v2
- **A/Prof. Debnath Ghosal, Dr. Matthew Johnson and Bindusmita Paul** - <https://www.theaustraliatoday.com.au/first-contact-that-may-have-led-to-complex-life-on-earth-finally-witnessed-by-scientists/>
- **A/Prof. Debnath Ghosal, Dr. Matthew Johnson and Bindusmita Paul** - <https://www.themicrobiologist.com/news/from-asgard-to-earth-tiny-discoveries-hold-clues-to-lifes-greatest-leap/8560.article>

Social Media

The Outreach and Public Engagement Committee have opened two additional social media channels: Bluesky and Instagram. We will continue to post on X but with many scientists leaving for BlueSky, we are now active here.

If you are on these platforms, remember to follow us!



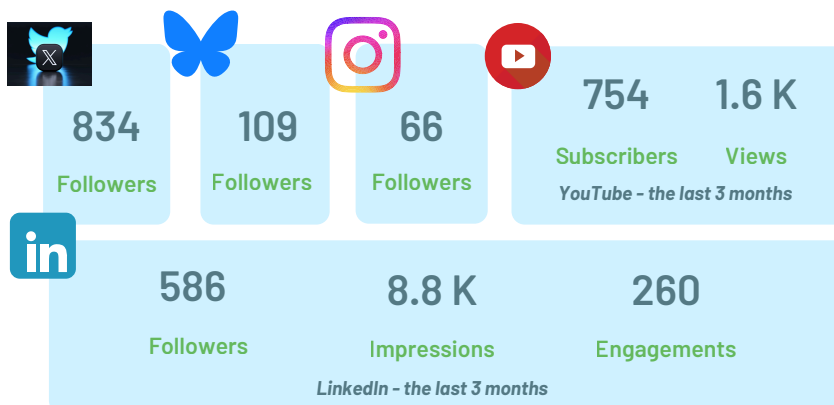
Bluesky – @ccemmp-outreach.bsky.social



Instagram - ccemmp_outreach



ARC Centre for Cryo-electron Microscopy of Membrane Proteins



Other training

- Dr. Sepideh Valimehr hosted and led the workshop Hands-on cryoEM sample preparation and data acquisition on 29-30 April 2026 at IHIC (UoM Bio21 Node).
- A/Prof. Karen Gregory attended the session Psychosocial risk management for supervisors and managers at Monash University.
- Milad Reyhani participated in The Industry Mentoring Networking in STEM (IMNIS) 2026.
- Dr. Nadia Aleksandrova participated in APR.Intern WISE Masterclass 2026 - Crafting career pathways for women in STEM and the UniMelb Gender Equity Media Support (GEMS) Program.

Industry Engagement

Members and student members continue to have their regular meetings with their respective industry partners (Servier). ICHDRs continue to meet with their industry mentors.

Conference Presentations

International Meetings

Prof. Patrick Sexton - Structure and pharmacology of calcitonin and amylin receptors. 11th International CGRP Family Peptides Conference, 8-10 April 2026, Zurich, Switzerland.

Dr. Alastair Stewart - Structural Basis of Sodium Ion-Dependent Carnitine Transport by OCTN2". Keystone Symposium: Solute Carrier Transporters: Structure, Physiology and Pharmacology, 14 April 2026, MA, USA

Marialena Georgopoulou - Decoding PLD3: Structural and functional discoveries with therapeutic potential for Alzheimer's Disease. BPS2026, 70th Annual Meeting of The Biophysical Society, 21-25 February 2026, San Francisco, CA, USA.

National Meetings

Dr. Shabih Shakeel - Mechanisms of chromatin remodelling by MORC family ATPases. Lorne Genome 2026, 16 February 2026, Melbourne.

Dr. Fabian Munder - A protein antibiotic inhibits the BAM complex to kill without cell entry. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Luca Troman - Structural remodeling of flagella promotes biofilm formation in oral pathogen *Treponema denticola*. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Emily Furlong - Structural basis of bacterial nickel import by Type I ABC transporters. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Riya Joseph - A structural perspective on pore formation and regulation of *Bacteroides fragilis* toxins. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Yi Zeng - Unravelling promiscuity: Molecular determinants of drug transport in human Organic Cation Transporter 1. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Sarah Piper - Structures, dynamics and function of PAC1 receptor variants: staying 'in the loop'. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Ashleigh Kropp - A novel and widespread mechanism of membrane-coupling drives microbial respiration. Lorne Proteins Conference 2026, 10 February 2026, Melbourne

Dr. Yan Jiang - One high-order ion coupling mechanism generates multiple SLC1A stoichiometries. Lorne Proteins Conference 2026, 10 February 2026, Melbourne

Dr. Brian Cary - Receptor put to rest: The structure and dynamics of an arrestin-GPCR complex. Lorne Proteins Conference 2026, 10 February 2026, Melbourne

Dr. Bronte Johnstone - Capturing viral membrane fusion by cryo-ET using an in vitro reconstitution workflow. Lorne Proteins Conference 2026, 10 February 2026, Melbourne

Ania Beyger - Structural and pharmacological characterisation of CXCR3 isoforms and their modulation by therapeutic antagonists. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Bronte Carroll - Elucidating the molecular mechanisms of the orphan transporter MFSD14A. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Thomas Ficker - From Structure to Selectivity: Cryo-EM Analysis of Ligand Binding in Human Kv7.5 Ion Channels. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Daniel Fox - AI-designed protein inhibitors can block hemoglobin binding and inhibit growth of pathogenic E. coli. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Ruohua Gao - Structural characterization of FLVCR1 in its outward-facing conformation. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

MariaKatarina Lambourne - A Twist in the Tail: The Structural Basis of Kv7.2/Kv7.3 M-channel Assembly at Helix D. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

James Lingford - Mapping the unseen structural diversity of hydrogenases in silico. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Meihan Liu - Characterisation of Novel COMMD-Like Proteins from Archaea and Bacteria. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Solace Roche - The pore-forming mechanism of an ABC toxin. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Joshua Hardy - ProteinDJ: a high-performance and modular protein design pipeline. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Brooke Hayes - Substrate bound cryoEM structures reveal CRISPR-Cas13 specifically cleaves tRNA to provide bacterial immunity. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Dr. Felix Bennetts - Structure-Function Guided Development of P2X1 Receptor Small Molecule Antagonists for Use as a Non-Hormonal Male Contraceptive. Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Bhavika Rana - Structural and Pharmacological Basis of Allosteric Modulation at the M5 Muscarinic Acetylcholine Receptor. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Liam Rashleigh - Structure of an avian integral membrane $\alpha\beta$ T-cell receptor-CD3 complex. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Milad Reyhani - Structural Analysis of Novel Archaeal Viruses. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

David Safadi - Activation of the GABAB Receptor by Conopeptides and Orthosteric Agonists. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Doulin Shepherd - Investigating the structural basis of effector delivery through a bacterial Type IV Secretion System. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Jieyu Song - Filamentous assemblies of bacterial TIR-domain induced by NAD⁺ analogue and nucleic acids. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Jiayin Zhang - Structural basis of bitopic ligands at the M1 muscarinic acetylcholine receptor. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Ruosong Zhang - Structure and function of NanOU, an outer membrane sialic acid transporter. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Peiyuan Zhao - Structural and functional characterization of γ -carbonic anhydrase from *Klebsiella pneumoniae*. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Nadezhda Aleksandrova - Mechanistic Insights into the Activation and Pore Formation of Insecticidal Proteins from Ferns. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Bryan Lim - Unravelling the Structural Mechanism of the Pneumococcal Manganese Transporter PsaBCA. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Yi Zeng - Structural arrangement and activation of the KDEL receptors. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Cara Press - Using minicells to examine B-barrel protein arrays in *Klebsiella pneumoniae*. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Yan Li - Structural Insights into A Novel Chi-like Phage Targeting Multiple *Klebsiella* spp. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Matthew Doyle - Novel inhibitors targeting the Gram-negative bacterial two-partner secretion system. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Christopher Stubenrauch - Tripartite Efflux Pumps in Gram-positive bacteria? Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Dr. Aidan Grosas - Structural elucidation of peptide hormone amyloid fibrils via cryo-EM. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Sathya Muthusamy - Structure of the autotransporter adhesin RadD from *Fusobacterium nucleatum*. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Ada Quinn - The lipid fingerprint of inward facing ABCG2 reveals cholesterol interaction hotspots. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Mahmuda Yeasmin - Structural basis of positive allosteric modulator selectivity at the muscarinic acetylcholine receptors. Lorne Proteins Conference 2026, 10 February 2026, Melbourne.

Janik Clement - AI-Guided De Novo Protein Binder Design Targeting RXFP1: A Computational-to-Experimental Pipeline, Lorne Proteins Conference 2026, 9 February 2026, Melbourne.

Academic Presentations

International Seminars

Dr. Shabih Shakeel - Structure and function of human MORC2. Fragile Nucleosome seminar series, 23 April 2026, Online.

Dr. Naveen Vankadari - Structural landscape of SARS-CoV-2 entry and activation of Spike glycoprotein by engaging host factors and interventions, University of Philippines, 7 April 2026, Philippines.

Dr. Naveen Vankadari - Structural landscape of SARS-CoV-2 entry and activation of Spike glycoprotein by engaging host factors and interventions, Trinity University of Asia, 6 April 2026, Philippines.

Dr. Naveen Vankadari - Structural landscape of SARS-CoV-2 entry and activation of Spike glycoprotein by engaging host factors and interventions, St. Luke's Medical Center, 5 April 2026, Philippines.

Dr. Sepideh Valimehr - Cryo-Electron Microscopy at the University of Melbourne: Technology, Expertise, and Opportunities. National University of Singapore, 12 March 2026, Singapore.

Dr. Rosemary Cater - Structural and Mechanistic Insights into Nutrient Transport at the Blood Brain Barrier, CCeMMP Seminar Series, 10 March 2026, Online.

National Seminars

Marialena Georgopoulou - Structural and biophysical studies of key proteins involved in brain damage. PhD Exit Seminar, 12 March 2026, Bio21, Melbourne.

Minakshi Baruah - Structural Understanding of Vasopressin Receptors. PhD Exit Seminar, 30 March 2026, Monash University, Melbourne.

Alok Pradhan - Pharmacological Profiling of G Protein Promiscuity in AT1R, CCR2, and CXCR2: Biochemical Optimization of AT1R and CCR2 for Structural Studies. PhD Exit Seminar, 30 March 2026, Monash University, Melbourne.

Dr. Matthew Doyle - Omp85 proteins - builders of the bacterial outer membrane. BSB Seminar Series, 26 March 2026.

Prof. Brett Collins - Panel member for IMB International Women's Day Panel: Supporting Women and Research into Women's Health, Institute for Molecular Bioscience (The University of Queensland), 6 March 2026.

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National Seminars

Dr. Shabih Shakeel - Structure and function of human MORC2. Fragile Nucleosome seminar series, 23 April 2026, Online.

Dr. Naveen Vankadari - Structural landscape of SARS-CoV-2 entry and activation of Spike glycoprotein by engaging host factors and interventions, University of Philippines, 7 April 2026, Philippines.

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Dr. Sepideh Valimehr - Cryo-Electron Microscopy at the University of Melbourne: Technology, Expertise, and Opportunities. National University of Singapore, 12 March 2026, Singapore.

Dr. Rosie Cater - Structural and Mechanistic Insights into Nutrient Transport at the Blood Brain Barrier, CCEMMP Seminar Series, 10 March 2026, Online.

Publications

New Publications

Fairweather CJ, Zhang X, Fernando DC, Garama DJ, Sexton PM, Wootten D, Josephs TM. Conformational Dynamics of Amylin Receptors Revealed by Hydrogen–Deuterium Exchange Mass Spectrometry. *Journal of the American Chemical Society*, 16 April 2026.
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Nobs SJ, Johnson MD, Williams TJ, Meltzer J, Vázquez-Campos X, MacLeod FI, Rowell K, Pitt M, Paul B, Shepherd DC, Michie KA, Duggin IG, Ghosal D, Burns BP. An Asgard archaeon from a modern analog of ancient microbial mats. *Current Biology*, 20 April 2026.
10.1016/j.cub.2026.03.041

Khandokar Y, Srivastava P, Schwab RHM, Sethi A, Vankadari N, Forwood JK. Tetrameric hotdog-fold structure and catalytic mechanism of the SaPaal thioesterase from *Staphylococcus aureus*. *Protein Science*, 27 April 2026.
<https://doi.org/10.1002/pro.70583>

Krishna MSA, Ashitha KT, Prabhakara Bhat M, Rudrappa M, Athira CS, Lalshikanther Basha AL, Varughese S, Vankadari N, Nayakac S, Somappa SB. Iodine-mediated cascade amination enables one-pot access to antimicrobial indole-embedded dihydropyrazoles. *Organic & Biomolecular Chemistry*, 24 February 2026.
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Seneviratne JA, Crisp CL, Glancy E, Choy N, **Tan W**, Neve M, Stammers M, Wang T, Johnstone R, Kaur A, Fennell KA, Burr ML, Parker BL, **S Shakeel**, MA Eckersley-Maslin. Embryonic stem cell factors DPPA2/4 amplify active H3K4me3–H2AK119ub chromatin domains in non-small cell lung cancer. *Gene Dev*, May 1 2026.

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10.1016/j.immuni.2025.12.008

Suwandi A, Jin J, Zhao Y, Mudududdla R, Gee YS, Deora GS, Sun Y, Wei H, Huang F, He JS, George AJ, Hermans SJ, Leaver DJ, **Parker MW**, Baell JB. Biological Activity and Structural Biology of Current KAT6A Inhibitor Chemotypes. *Journal of Medicinal Chemistry*, 29 January 2026.

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Black KA, Nguyen JV, Ramsey JR, **Tovey JC**, Cameron DL, Alexandrovics J, **Glukhova A**, Papenfuss AT, Call MJ, Young R, Call ME. Resolution of a T1-Like Bacteriophage Outbreak by Receptor Engineering. *Molecular Biotechnology*, March 2026.

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Wymann S, Morales RAV, Toh WH, Remlinger J, Guse K, Ghai R, Pestel S, Sansome G, Chen, C.-G, Rayzman V, Chia J, Quek AJ, Gorman MA, Halder, P, Powers G, Ruthsatz T, **Parker MW**, Rowe T, Vyas S, Verhagen AM, Hardy MP. CSL305: A Dual Functional Therapeutic Antibody Targeting Complement C2 and FcRn. *International Journal of Molecular Sciences*, 4 March 2026.

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Go RM, **Kishor C**, Malde AK, Blanchard H. Molecular Dynamics Identify Variances Between Galectin Carbohydrate-Binding Sites That Impact the Binding Site Conformation and Ligand Binding. *Proteins: Structure, Function and Bioinformatics*, April 2026.

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10.1021/acscchembio.5c01007

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10.1016/j.cub.2026.03.041

Kropp A, Archer JD, Jespersen M, Watts TD, Solari J, Huang C, Schittenhelm RB, **Grinter R**, Greening C. Atmospheric hydrogen consumption is regulated by glycerol-mediated catabolite repression in mycobacteria. *mSystems*, 21 April 2026.
10.1128/msystems.01678-25

Released Structures

- **9N09, EMD-48778**: Human M4 muscarinic acetylcholine receptor Gi1 complex (mini-Gsi chimera) bound to the bitopic agonist C110
- **EMD-48779**: Human M4 muscarinic acetylcholine receptor Gi1 complex (mini-Gsi chimera) bound to the bitopic agonist C110
 - Michaela Kaoullas, Jesse Mobbs and David Thal
 - To be published
- **EMD-69767**: Nerearchaeum marumarumayae interaction with gram negative bacterium
- **EMD-69768**: Large cell body of Nerearchaeum marumarumayae
- **EMD-69769**: Extended cell phenotype of Nerearchaeum marumarumayae
 - Matthew Johnson, Doulin Sheperd and Debnath Ghosal
 - *Current Biology*: <https://doi.org/10.1016/j.cub.2026.03.041>
- **4YBV**: Crystal Structure of mutant of (Q32A) thioesterase enzyme SAV0944 from *Staphylococcus aureus* subsp. *aureus* Mu50
- **5EP5**: The crystal structure of the hypothetical protein SAV0944 mutant (Glu47Ala) from *Staphylococcus aureus*.
 - Naveen Vankadari
 - *Organic & Biomolecular Chemistry*: <https://doi.org/10.1039/d6ob00043f>

CCeMMP Cryo-EM Structure Image Gallery

