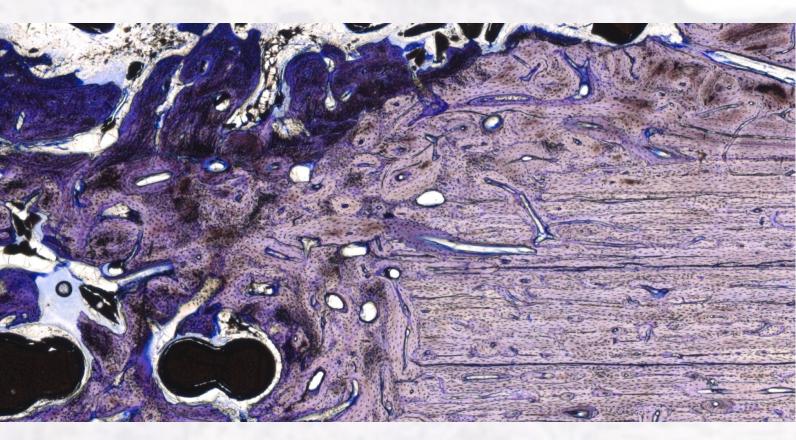
# ANZBMS EARLY CAREER INVESTIGATOR Newsletter



# ANZBMS-MEPSA-ANZORS 2022 ASM Highlights & Awards

B.O.N.E. Meeting Report ANZBMS-MEPSA-ANZORS 2022 ASM ECI Events

# **Funding Opportunities & Conferences**

Cover Image: Interface of bioactive scaffold implanted into sheep long bone to induce critical-sized defect repair, showing new bone ingrowth into the scaffold

Image taken by Dr. Jiao Jiao Li, lecturer and NHMRC Early Career Fellow at the UTS School of Biomedical Engineering, Sydney, and winner of the Minghao Zheng Orthopaedic Innovation Award at the ANZBMS-MEPSA-ANZORS ASM 2022.





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ECIs please send us your scientific images the best will feature on the front page of our next issue.

ecinewsletter@anzbms.org.au



Editor in Chief: Laura Trainor

Copy Editors: Dr Madhuni Herath & Dr Lena Batoon

### Editorial Board



Batoon



Herath



Dr Shanal Kumar





Tian Nie

Mesinovic





Dr Jason

Talevski



Laura Trainor



Dr Yinghong Zhou

## ECIC Co-Chairs Report

Mei Lin Tay

Welcome to the third issue of the ECI newsletter for 2022. This year is truly flying by! We hope many of you were able to attend our first in-person scientific meeting since 2019. The ANZBMS-MEPSA-ANZORS 2022 Annual Scientific Meeting was a huge success and enabled us to discuss the latest musculoskeletal research face-to-face. A true highlight of the meeting was 'the great debate', where our senior members comically, yet informatively, debated one of the most hotly contested topics amongst the bone community: is physical activity or therapeutics better at preventing fractures? ECI representation at the meeting was fantastic; several invited speakers, oral presenters, poster presenters, session chairs and award winners were ECIs this year and we would like to thank the ECIs for their incredible engagement during the meeting – both in person and on Twitter! We would also like to extend a warm congratulations to all the award winners and presenters at the meeting, it truly was a captivating few days.

The first day of the conference was action packed and included our ECI Speed Networking session – EMCRs had 6-minute slots to meet with senior members and get to know each other. The session was followed on by the Welcome Function, our much-loved ECI Bones and Brews event. These events were extremely well attended and enjoyed by all! Well done to the winning Trivia team, Team Jaws! The second day of the conference featured the ECI Career Development workshop that was sponsored by Griffith University, in addition to all three societies. The workshop was delivered by two exceptional speakers from the WALT Institute, who provided attendees with useful strategies to manage adversity and improve resilience. ECI participation was excellent, and we hope that the skills learnt will help ECIs with their future careers. The meeting also included our Clinical Cases session. This was another excellent session featuring fascinating case presentations that stimulated important discussions. In summary, our Annual Scientific Meeting was a huge success; an overview of the meeting and the ECI events can be found on pages 11 - 12.

The ECIC continues to host virtual coffee catchups, and in August we had a very special event: Science Outside the Lab: Building Careers in Industry. The session featured three panelists that worked outside of academia and provided ECIs with important insights into careers in industry. Thank you to all the panelists for taking time out of their schedules to contribute.

We wish you all the best for the upcoming quarter. Stay safe and well.

Dr Bridie Mulholland and Dr John Kemp ANZBMS ECIC Co-Chairs





### Welcome to our new Editorial Board member!



### Dr Lena Batoon

I am a second-year Postdoctoral Research Fellow at the University of Michigan, USA and an Honorary Research Fellow at the University of Queensland, Australia. My research endeavours are aimed at better understanding the mechanisms underlying osteoporosis and skeletal metastasis with an ultimate goal of developing effective therapeutics. Currently, I am working to elucidate the contributions of macrophages in bone regeneration, osteoporosis bone pathology and metastatic bone diseases. The ECI Newsletters have been a pleasure to read. They had allowed me to learn about my fellow young investigators across Australia and New Zealand including their research interests and achievements. The Newsletters had helped me identify potential collaborators and kept me informed

about relevant awards and events. Given the positive impact this initiative had on me, I would like to give back by devoting my time to assist with generating subsequent newsletters. I'm sure that being a part of the editorial board will only improve my writing, editing, communication and networking skills, all of which are requisite in our field.

### Farewell and thank you to our outgoing Editorial Board members!



### **Dr Alex Barker**

Despite only being a member of the ECI Editorial Board for a short term I had a wonderful experience being involved and seeing each issue come together. It was fantastic to hear of the all the initiatives, outreach and awards of our fellow ECIs and I really felt like I was part of the bone community. I look forward to seeing future Issues and highly recommend ECIs to get involved if you want to contribute in a small way to the society and meet some fantastic fellow ECIs!

### Behnaz Azimi Manavi

It was an honor to be part of the ANZBMS ECIC over the last year. ECIC brought a fantastic opportunity to develop my connections and meet junior and senior researchers. As a copy-editor, I have gained new experiences to be more detailed and make great visual content. I leave the ECI Editorial Board with many great memories, new skills, and new connections.

I am looking forward to discovering many more issues.





# B.O.N.E. awardee: Dr Marc Sim



# **Dr Marc Sim**

### **Senior Research Fellow**

Nutritionist, Exercise Scientist Edith Cowan University,Perth

<u>@marc\_p\_sim</u>

# Can you briefly describe what your research is about?

Despite the recognised benefits of diet for musculoskeletal health, the majority of work to date has focused on Vitamin D and protein unknown on intake. Much remains the importance of other aspects of diet to support muscle function for fall and fracture prevention. My research evaluates and develops better evidence for identifying risk factors, muscle biomarkers and modifiable lifestyle factors (diet and exercise) to prevent falls and fractures. Specifically, my recent work examines how nutrients such as Vitamin K and nitrate found in vegetables can benefit muscle function, bone parameters and vascular health-key risk factors for falls prevention.

### Congratulations on being a B.O.N.E. awardee! Can you please tell us your experience at the BRS meeting?

This was the first 'in-person' meeting for the Bone Research Society in 3 years due to Covid-19, and it was clear how excited everyone was to see each other. The meeting was hosted at Manchester Metropolitan University with an excellent blend of both clinical and fundamental research, in an extremely welcoming environment. I was fortunate to present my talk "Preventing falls & fractures in older populations: an appetite for change" in a symposium dedicated to Nutrition, Gut & Bone. I really enjoyed the Muscle & Bone Workshop New and the Investigators/Mid-Career Dating Speed Networking Event, where I got to meet so many researchers and their students across the UK.

Bridging Overseas Networking and Exchange (BONE) Program www.anzbms.org.au/grants-and-awards-bone-program.asp.

# What advice would you give to other ECIs planning to attend conferences internationally?

Take every opportunity to meet and talk to as many people as you can. Introduce yourself and do not be afraid to ask someone what they do. Most importantly, studying the conference program and identifying researchers/teams of individuals is key to future collaborations. It is also important to promote your work and describe how it complements the research of potential collaborators. It is essential to follow-up on these connections after the conference and have some research ideas or even grant opportunities mapped out prior to these meetings. Finally, a nice way to stay in touch casually is Twitter, as it reminds people of the work you are currently undertaking.

# Do you have tips that would help ECIs maximize their conference experience?

Prior to the conference, map out the key sessions to attend including topics where you can see strong synergies with your own work. I also recommend contacting someone before the conference via email to introduce yourself and ask if they would like to meet for an informal coffee/lunch during the event. Do not be afraid to highlight a particular skill set you have as potential collaborators might be extremely interested in learning from you too. Another great starting point is engaging in all the EMCR events at the conference. Forming these contacts often lead to not just research opportunities, but and grant lifelona friendships as well!



Dr Michelle MacDonald and Dr Marc Sim at the 2022 BRS meeting



# Roger Melick Young Investigator Finalists



### Martha Blank

St. Vincent's Institute of Medical Research

Title: EphrinB2 and lysosomes in osteocytes are essential for collagen arrangement in the extracellular matrix



### Ahmed AA Al Saedi

University of Melbourne and AIMSS

Title: MicroRNA cargo of extracellular vesicles released by skeletal muscle negatively regulates the bone quality in obese mice



Kaitlyn A Flynn

University of Queensland

Title: Identifying genes involved in hip osteoarthritis and describing the cells in which they are differentially expressed



#### **Eugenie Macfarlane**

The University of Sydney

Title: Skeletal glucocorticoid signalling plays a critical role in bone loss driven by circadian rhythm disruption



**Alexander Seeto** Griffith University



#### Elisabeth Ng

Monash Health and Monash University

Title: A low serum alkaline phosphatase may signal the presence of hypophosphatasia in patients with reduced bone mineral density of fragility fractures



**Ruth Frampton** The Canberra Hospital

Title: Asymptomatic vertebral fractures predict subsequent clinical fracture in both men and

mortality in trials of osteoporosis therapies



#### **Huy Nguyen**

The University of Technology Sydney and Ton Duc Thang University

Title: Identification of asymptomatic vertebral fracture using Artificial Intelligence (AI)

All presentations were of an extremely high calibre. *Congratulations* to *Kaitlyn A Flynn* from the University of Queensland who won the Roger Melick Young Investigator Award.



The ECIC Clinical Cases session sparked lively discussion regarding complex areas of metabolic bone disease, engaging both clinicians and scientists.



**Dr Mawson Wang** Concord Hospital Sydney

**Title:** Skin and bones: systemic mastocytosis and osteoporosis



### Dr Emma Croker

John Hunter Hospital Newcastle

**Title:** The RANK-L's with Polyostotic Fibrous Dysplasia Treatment in Adulthood



**Dr Lucy Collins** Western Health

Melbourne

**Title:** An unusual cause of hypercalcemia in two siblings



Dr Louise S Goodall

St Vincent's Hospital Sydney

**Title:** Multiple vertebral fractures in a patient with severe COVID-19 treated with lung transplantation



**Dr Christopher Preston** St Vincent's Health

St Vincent's Health Melbourne

**Title:** Diagnostic dilemma: progressive femoral lesion in a young woman



Dr Tomasz J Block

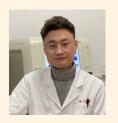
Monash Health Melbourne

**Title:** A *RUNX1* germline mutation as a novel cause of previously unexplained severe osteoporosis in a young male

All presentations were of an extremely high calibre. *Congratulations* to *Dr Lucy Collins* from Western Health who won the Clinical Cases Award.



# Christopher and Margie Nordin Young Investigator Poster Award Finalists



#### Delin Liu

The University of Western Australia & Perron Institute for Neurological and Translational Science

**Title:** Regulation of blood-brain barrier by a subset of astrocytes that express osteocyte marker DMP-1



#### Abadi Kahsu Gebre

Edith Cowan University & Mekelle University

**Title:** Clinical cardiovascular disease and long-term falls risk: The Perth Longitudinal Study of Ageing in Women



Ensieh Hajimotallebi

The University of Adelaide

**Title:** Identification of epigenetic factors deregulated in skeletal stem cells during high fat/glucose mediated inhibition of bone formation

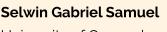


### Yuqing Mu

Queensland University of Technology

**Title:** The osteoinductive potential of the nutrient inorganic components from the bone microenvironment for in situ bone tissue engineering





University of Queensland

**Title:** Pathogen-associated molecular patterns produced by infectious microbes worsen Neurogenic Heterotopic Ossifications after spinal cord injury

#### **Dinh-Tan Nguyen**

University of Technology Sydney & Ton Duc Thang University

**Title:** Automated Grading System of Radiographic Knee Osteoarthritis Severity Using Deep Learning



**Carrie-Anne Ng** Monash University

**Title:** Associations of Mechanical Loading from Physical Activity with Bone Mineral Density, Physical Function and Knee Impairment in Older Adults: The TASOAC Study



#### Jun Yuan

The University of Western Australia & Perron Institute for Neurological and Translational Science

Title: Elevated bone-derived sclerostin in plasma is associated with high brain amyloid- $\beta$  load in cognitively normal older adults



**Anuj Shah** University of Tasmania

Title: Changes in body composition are associated with incident vertebral deformities over 10.7 years

#### Navira Samad

Monash Health & Monash University

**Title:** Poor alignment of a smaller femur with the upper body may contribute to increased fracture risk in women with POI

All presentations were of an extremely high calibre. *Congratulations* to *Selwin Gabriel Samuel* from the University of Queensland who won the Christopher and Margie Nordin Young Investigator Poster Award.



# ANZBMS/AMGEN Outstanding Abstracts + Highest Rated Student Abstract

# **ANZBMS/AMGEN Outstanding Abstracts**

### Michael J Rogers, Garvan Institute of Medical Research

Bisphosphonates may boost immune responses to pulmonary infection by acting on tissue-resident macrophages in the lung

### Charles Inderjeeth, North Metropolitan Health & University of Western Australia

Treating osteoporosis and dementia with anti-dementia medication acetylcholinesterase inhibitors may have therapeutic benefits on osteoporotic bone by attenuating osteoclastogenesis and bone resorption

### Ming-Hao Zheng, Shanghai Jiao Tong University Affiliated Shanghai Sixth People's Hospital

Endothelial cells require mitochondrial transfer from osteocytes to promote vascularization in cortical bone

### Brya Matthews, University of Auckland

Epidemiology of fractures in different ethnic groups across the lifespan in New Zealand

### John Eisman, Garvan Institute of Medical Research

Fracture risk in women with osteoporosis treated with gastro-resistant (ec) risedronate versus immediate release risedronate or alendronate: a claims data analysis in the United States

## **ANZBMS Highest Rated Student Abstract**

### Tian Nie, University of Melbourne

Estradiol increases bone mass and strength in a pre-clinical mouse model of male-to-female transition during adulthood



y a<u>tia</u>

@<u>tian\_in\_oz</u>

Transgender women may choose to take gender affirming hormone therapy (GAHT) as part of their medical transition. However, the effects of increasing serum estradiol and decreasing serum testosterone on bone health and fracture risk are poorly understood.

Sex steroids are essential for bone maintenance in adulthood, but it is clinically difficult to study the underlying mechanisms that may be causing bone changes in the population. So we aimed to determine the effects of GAHT administered during adulthood on bone microarchitecture and strength in a mouse model of male-to-female transition. Using a combination of Micro-computed Tomography ( $\mu$ -CT) and 3-point bending, we found that supra-physiological serum estradiol concentrations in male mice increased cortical and trabecular bone mass, leading to increased bone rigidity and strength. Ongoing analyses are investigating the underlying changes in bone cell metabolism to provide further insight into the bone health of transgender women undergoing GAHT.



# The ANZBMS Early Career Investigator Committee organised four exciting events for this year's meeting!

### Bones & Brews

The casual drinks and dinner social event brought together members from all stages from the three societies. The evening featured trivia along with substantial food and drinks.

This event was held at the Kurrawara Surf Club and was attended by 81 people. Congratulations to Team Jaws, who took out the title. We thank the conference organising committee for organising such a fun and interactive event!



"The ECIC Bones & Brews session is a great place to get to know colleagues and network without the pressure of the academic environment, but with all the pressure of trivia! I had a blast being on the Jaws team with all the guys and I'm glad we won; their competitive streak was strong!" - **Kara Anderson** 

### Clinical Cases in Metabolic Bone Disease Seminar

This interactive session consisted of challenging clinical cases presented by experts. Each presenter gave a clinical vignette followed by evidence, expert commentary, questions and discussion. This year the 2022 clinical subcommittee members were Albert Kim and Hanh Nguyen. This session had 60 attendees; twelve cases were submitted for the session and six advanced clinical trainees presented.



"All presenters discussed complex and challenging cases which encouraged a stimulating discussion. It was a very informative and enjoyable evening" - **Madhuni Herath** 



### Science at Speed: Networking Session

This event had 58 attendees and aimed to foster collaboration and networking across different disciplines and career levels. Each pair were given 6 minutes to pitch their research interests before moving to a different table over the hour.



"The speed networking session was a great way to start the conference! It was fantastic to be able to meet and learn from several very interesting people working in a variety of research fields and at different career stages." - **Jack Dalla Via** 

# Career Development Session: Building Resilience in STEM - Bouncing forward not just back from adversity

This workshop taught over 70 ANZBMS and Griffith University attendees how to bounce forward and not just back from adversity. It was presented by Elizabeth and Christine from the WALT Institute and supported by Griffith University and Menzies Health Institute, Queensland. The WALT Institute specialises in coaching and training people in STEMM, with a conscious focus on the enhancement of skills essential to personal and professional development. At past meetings, the Career Development sessions have largely focused on research-related skills (e.g. applying for grants and fellowships). This year, the ECIC acknowledged the importance of soft skills – such as communication, leadership and moderation – and noted that ECIs are not often explicitly given opportunities to enhance these soft skills. The session was particularly fitting given the many challenges ECIs faced during the COVID-19 pandemic. We thank the organisers and Griffith University for sponsoring this event.



"Elizabeth and Christine were fantastic and enthusiastic speakers and showed us useful tips on how we can be resilient to set backs and how to bounce forward from adversity." - **Cassandra Smith** 



# ANZBMS ECI Awards

### Congratulations to our ECIs on their amazing achievements! ANZBMS ASM Awards



Kaitlyn Flynn, University of Queensland Roger Melick Young Investigator Award

Selwin Gabriel Samuel, University of Queensland Christopher and Margie Nordin Young Investigator Poster Award





Natalie Hyde, Deakin University Professor Sambrook Young Investigator Travel Award

Shejil Kumar, Royal North Shore Hospital Amgen/Healthy Bones Australia/ANZBMS Clinical Grants Program





Tian Nie, The University of Melbourne ANZBMS Highest Rated Student Abstract Award





ANZBMS ECI Awards

### Congratulations to our ECIs on their amazing achievements!

Kai Chen, University of Western Australia Sol Polsen Research Award





Lucy Collins, Western Health, Royal Melbourne Hospital ANZBMS Best Clinical Case Presentation

Natalie Wee, St. Vincent's Institute of Medical Research ANZBMS Kaye Ibbertson Award for Bone and Mineral Medicine



### Christine & T. Jack Martin Research Travel Grant



Niloufar Ansari Monash Institute of Pharmaceutical Sciences



Ahmed Al Saedi The University of Melbourne



Martha Blank St. Vincent's Institute of Medical Research



Pholpat Durongbhan The University of Melbourne



Jiao Jiao Li, University of Sydney NSW Young Tall Poppy Science Award, Australian Institute of Policy and Science (AIPS) Alan Skyring Memorial Award, Australian Society for Medical Minghao Zheng Orthopaedic Innovation Award, Australian & New Zealand Orthopaedic Research Society (ANZORS) Research (ASMR)

ECIs, if you have received any awards or funding, please email us at ecinewsletter@anzbms.org.au.

We would love to share and celebrate your success!



# **Upcoming Conferences**

# Major Conferences 2022-2023

World Congress of Orthopaedic **ICORS Congress** Research COR\$ 2022 **EDINBURGH** 7-9 September 2022 7-9 SEPTEMBER 2022 Edinburgh, Scotland ch Institute Da **ASBMR ASM ISBMR 202** 9-12 September 2022 Austin, Texas, USA Vitamin D Workshop 7-9 September 2022 Austin, Texas, USA **BMA2022** Meeting BONE MARROW ADIPOSITY 28-30 September 2022 28-30 September 2022 Amarilia Hotel, Athens, Greece Athens, Greece NZOA & AOA COMBINED ANNUAL SCIENTIFIC MEETING NZOA & AOA Combined ASM 30TH OCTOBER - 3RD NOVEMBEI 30 October - 3 November 2022 2022 TE PAE | OTAUTAHI | CHRISTCHURCH Christchurch. New Zealand Te Pae Maunga, Te Pae Whenu Te Pae Tangata Togethemess, Diversity, Sustainability **IFMRS** 4th H Fleisch Workshop 4<sup>th</sup> H Fleisch Workshop 20-22 November 2022 Brugge Belaiun Brugge, Belgium **KU LEUVEN ORS ASM** 

10-14 Feb 2023 Texas, USA

Orthopaedic Research Society



**Upcoming Conferences** 

### Major Conferences 2022-2023

AAOS ASM 7-11 Mar 2023 Las Vegas, USA



# 2023 Annual Meeting

March 7 - 11, Las Vegas, Nevada



2023 OARSI World Congress on Osteoarthritis When: March 14, 2023 - March 20, 2023 Categories: Health & Medical

OARSI World Congress 14-20 March 2023 Denver, USA

### Combined ECTS/ BRS Congress

**15-18 April 2023** Liverpool, UK





World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases

**4-7 May 2023** Barcelona, Spain



ISAKOS Congress 18-21 June 2023 Boston, USA



Grant/fellowship name	Application Dates	Website
Maurice & Phyllis Paykel Trust: Travel Grant	Est. Aug - 1 October 2022	https://www.paykeltrust.co.nz/ travel-grants/
Royal Society Te Apārangi Marsden Fund Fast-Start Grants	Dec 2022 - Feb 2023	https://www.royalsociety.org.nz/ what-we-do/funds-and- opportunities/marsden/marsden- fast-start/
Snow Fellowships	15th Feb - September 2022 by invitation	https://snowmedical.org.au/snow- fellowship/
Collaborative Research Requests- Ramsay Hospital Research Foundation	EOI open, rolling round	https://www.ramsayhealth.com.au/ Ramsay-Research/Ramsay- Hospital-Research-Foundation/ Applying-for-a-Grant





**Bone Health TeleECHO** is the first interdisciplinary model for case-based online, tele mentoring of osteoporosis and other bone disorders in Australia and New Zealand.

Each session will start with a brief discussion of a recent journal article in the area of osteoporosis medicine. This will be followed by an expert commentary that will help us translate the evidence into practice. Participants will then present clinical cases with input and guidance being provided by our panel of experts.

The sessions will run from 6pm-8pm AEDT on the first Monday of each month.

### Why participate in Bone Health TeleECHO?

- Learn from the experts about how to manage complex cases, which may fall outside the scope of current guidelines and require expert opinion
- Provide a platform for health practitioners who are not based in an expert bone centre such as those based in the private sector or rural/regional areas of Australia to participate in interactive case-based discussions and receive mentoring from experts in osteoporosis
- Build on self-efficacy and expertise in osteoporosis and other bone diseases
- Meet continuing professional development (CPD) requirements
- Network with colleagues with an interest in Bone disease across different specialties

Click **HERE** for more information including registration



# Bone Health TeleECHO



### Submit your case!

We invite and encourage participants to present cases. Cases should be submitted in Microsoft PowerPoint or PDF format and be no longer than 10-15 minutes in duration.

Presentations should include a final summary slide with questions for the panel. The expert panel will then lead the discussion. We welcome a wide variety of cases from common conditions to unusual presentations.

In 2022 we are launching a new sessional component called 'Ask the Expert', in which participants will have the opportunity to ask the experts questions related to osteoporosis that may not necessarily require a whole case presentation. Examples include:

• How best to achieve rapid vitamin D restoration prior to antiresorptive therapy?

- Do all patients started on aromatase inhibitors need a BMD and anti-resorptive therapy?
- Should tibolone be ceased in women over 60 years of age?

### To submit a case for presentation, email: <u>ausboneECHO@gmail.com</u>

Bone Health TeleECHO Team- Dr Julia Shrosbree; Dr Carlos El-Haddad; Dr Michael Bennett



Early Career Investigators of ANZBMS:

# we want to share and celebrate your wins!

We are on the lookout for early-career ANZBMS members who have celebrated a success to be highlighted in our ECI Spotlight section in upcoming editions of this newsletter.

We would also love to highlight your beautiful research-related images on our newsletter cover.

If you know of someone or want to self-nominate for an ECI Spotlight or cover art, please email us at **ecinewsletter@anzbms.org.au**, or tag us on Twitter (**@anzbms\_ecic**).