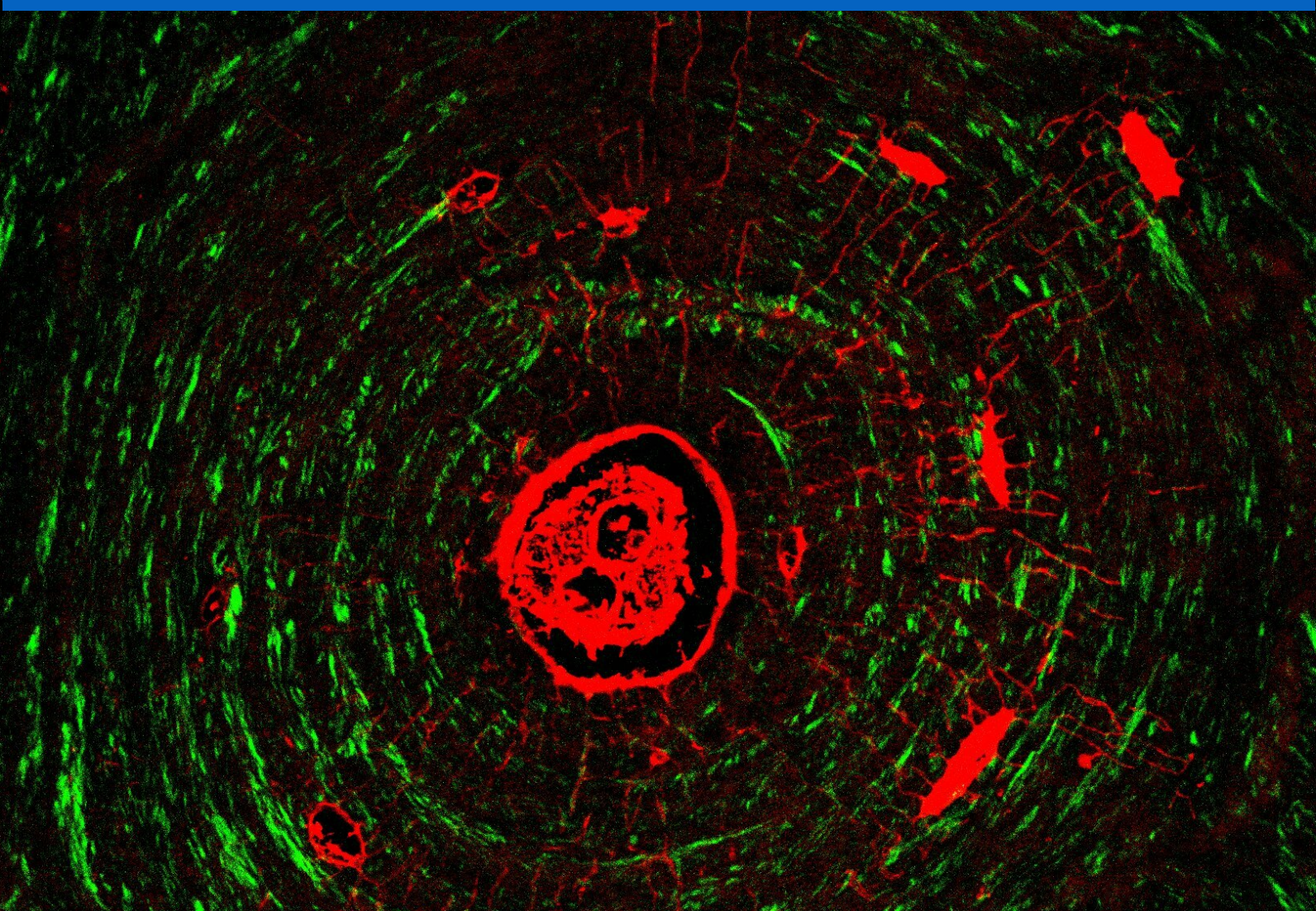


ANZBMS Newsletter



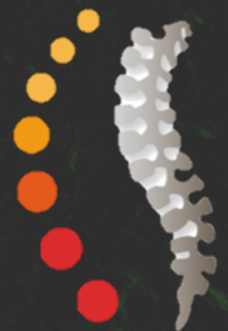
Clinical Updates

ANZBMS Committee Updates

ANZBMS ECI Spotlight

ASM Awards and Events

ANZBMS Member Publication Highlights



Cover Image by Dr Martha Blank, St. Vincent's Institute of Medical Research, Bone Cell Biology and Disease Unit. Image shows an osteon from human bone. Cortical bone wedges were infiltrated with Rhodamine (red) to visualise osteocyte lacunae and canaliculi within the bone using confocal microscopy. Collagen fibers were imaged using second harmonic generation (SHG) imaging (green) and the two channels were overlapped.

Welcome to the ANZBMS Newsletter



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- Member Publications (22)*
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Next Issue: December 2023

Please send us your scientific images and the best will feature on the front page of our next issue!

 newsletter@anzbms.org.au

 @ANZBMSoc

Welcome to the September 2023 issue of the ANZBMS newsletter!

In this issue, we thank exiting members and highlight the changes within the leadership of the editorial board: Congratulations to Dr Martha Blank on her new role as the next EiC (pg 6)! We welcome new members to ANZBMS (pg 7) and provide you with updates on the ANZBMS committees (pg 8). Our Clinical Updates section (pg 11-13) highlights recently published clinical guidance documents relevant to our clinical members.

Join us in celebrating ECIs as we spotlight Dr Lena Batoon (pg 15) and present to you the ANZBMS B.O.N.E Awardees and available ASM awards (pg 20). In this pre-ASM issue, we highlight the available ECIC specific sessions & networking opportunities at the upcoming meeting (pg 16). In the spirit of collaboration, we continue to spotlight bone labs throughout ANZ (pg 17-18),

We are recruiting editorial board members! Email us with a short biography, at newsletter@anzbms.org.au if you'd like to join our fantastic team! .

Best wishes from the ANZBMS Newsletter Editorial Board!

ANZBMS Newsletter Editorial Board



Dr Martha Blank



Dr Lena Batoon



Emma Cheney



Dr Madhuni Herath



Dr Shanal Kumar



Dr Michelle Maugham-Macan



Dr Jakub Mesinovic



Laura Trainor



Dr Yinghong Zhou



President's Comments



Professor Mark Forwood

ANZBMS President
Chair of Anatomy, School of
Pharmacy and Medical Sciences
Griffith University, Gold Coast

*"Come writers and critics
Who prophesize with your pen
And keep your eyes wide
The chance won't come again
And don't speak too soon
For the wheel's still in spin
And there's no tellin' who that it's namin'
For the loser now
Will be later to win
For the times they are a-changin'".*

"The times they are a-changin' ", Bob Dylan

ANZBMS Colleagues, we entered a partnership with [Bone Health Foundation](#) (BHF) in June to support research, advocacy and education focused on musculoskeletal research and education. We executed a Memorandum of Understanding, a key objective of which is to support a broader range of grants aimed at improving success in major funding rounds. Established in 1991, the BHF (formerly Bone Growth Foundation) is a self-funded not-for-profit organisation that raises money for education and research into bone health and skeletal conditions affecting Australians of all ages. BHF also creates awareness campaigns to encourage behaviour changes that make a real difference to longer lasting musculoskeletal health.

Opening on Monday September 11, **The ANZBMS and BHF are launching two new grants:**

The **ANZBMS-BHF Collaborative Interdisciplinary Grant** aims to develop new cooperation, exchange of ideas and research collaborations between research institutions, groups or industry partners in musculoskeletal research. Specifically, the scheme aims to develop new inter-disciplinary research collaborations, support significant new research partnerships, build strategic long-term collaborations, and promote collaborative projects between ECI/MCI and senior/established investigators. The maximum value of the grant is **\$AUD30,000** for a 12-month project.

The **ANZBMS-BHF Health Innovation Grant** aims to deliver funding to test feasibility of innovative concepts to improve musculoskeletal health. The scope of projects includes clinical, public health and/or health services (including clinical service delivery) or biomedical research that may lead to



President's Comments

larger, more rigorous studies and/or nationally competitive funding; and pilot studies and 'stand-alone' projects will be considered. The maximum value of this grant is **\$AUD40,000** for an 18-month project. Information on the grants can be accessed on the ANZBMS or BHF websites. ANZBMS looks forward to this ongoing relationship with BHF, supporting musculoskeletal research in a highly competitive funding environment.

In other great news, in addition to their Gold Sponsorship of our Annual Scientific Meeting, ANZBMS was successful with applications for Medical Education Grants (MEG) to Amgen and Kyowa Kirin Australia. Amgen approved the ongoing support of the AMGEN-ANZBMS Outstanding Abstract Awards (2 clinical and 2 basic) for the meeting in Newcastle in October. Kyowa Kirin Australia approved MEGs to provide support to the ECIC "Clinical Cases in Metabolic Bone Disease" session at the ASM and a significant grant for a project to publish a case-series in JBMR Plus, providing important additions to the

scientific literature on the management of patients with Hypophosphataemic bone disorders in Australia and New Zealand. This MEG is provided to cover article publication charges. The ECIC, Hypophosphataemia Working Party and ANZSPED will cooperate to manage this project. We sincerely thank Amgen and Kyowa Kirin Australia for this generous support to our education and scientific activities.

In September, our Clinical Imaging Committee will deliver an international Clinical Densitometry Course to the Emirates Rheumatology Academy (ERA). Based on the excellent reputation of this course, the ERA and Emirates Osteoporosis Society requested that we deliver our course for their technicians and clinicians. This is excellent recognition of the quality of this course delivered by our Clinical Densitometry Faculty. I thank Nick Pocock and Chris Schultz for managing considerable administration to launch this course, and our Faculty for delivering it.

See you all in Newcastle in October!



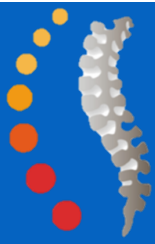
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www.linkedin.com/in/mark-forwood-7565a440



<https://experts.griffith.edu.au/18894-mark-forwood>



The ANZBMS Newsletter Editorial Board is changing!

Thank you to our outgoing members!

Ms Laura Trainor

PhD Candidate, The University of Adelaide & South Australian Health and Medical Research Institute

I have immensely enjoyed my time on the ANZBMS Newsletter Editorial Board over the last 2 years. It was a fantastic way to connect with other bone researchers both nationally, and internationally, and I have loved the chance to work with so many other researchers. A highlight for me was the integration of the ECI and ANZBMS newsletters, and I'm deeply grateful for the dedication and effort of all past and present team members. Thank you to my co-EiC Madi for all her hard work, as well as all the board members for contributing to successful newsletters. Congratulations to Dr Blank, who I am confident will lead the team to produce many more outstanding issues in the future.



Dr Yinghong Zhou

Senior Research Fellow, The University of Queensland

Serving on the ANZBMS Newsletter editorial board for the past 18 months with a committed and productive team has been a pleasure. It is a great way to stay up to date with the latest research developments within the field. I greatly appreciate the opportunity to connect with like-minded bone researchers, and celebrate their success. Useful skills gained and new connections made during this time will undoubtedly benefit my future career.



The ANZBMS Newsletter Editorial Board is changing!

Dr Madhuni Herath

Endocrinologist & PhD Candidate, Monash Health, Monash University & Hudson Institute of Medical Research

Being part of the editorial board has been a wonderful way to get to know other like-minded individuals with an interest in bone research. I thoroughly enjoyed working together in a creative environment to bring useful and interesting content to the ANZBMS membership. Taking on the roles of copy-editor and Editor-in-Chief through the different iterations of the newsletter was both challenging and rewarding, and I have learnt much during the process. I am thankful to Ms Laura Trainor, my co-EiC and the other editorial board members for their commitment to ANZBMS and the newsletter - It has been a pleasure. My best wishes go to Dr Blank as she takes on the role of EiC - I look forward to seeing the excellent work produced by the team in the future!



Congratulations to our new Editor-in-Chief!

Dr Martha Blank

Postdoctoral Researcher, St Vincent's Institute of Medical Research

I am delighted to continue my contributions to the ANZBMS newsletter as the new Editor-in-Chief. It is my pleasure to be leading a great editorial board team and I am confident that we will continue to produce high-quality content for the present and future ANZBMS members. I hope to feature many more laboratories and members and support collaboration by highlighting their research interests.



Martha Alexandra Blank



@martha_a_blank



ANZBMS New Member Spotlight

Dr Mícheál Ó Breasail

Research Fellow in the Bone and Muscle Research Group in the School of Clinical Sciences, Monash University

Research Category: Clinical

Research interests: Musculoskeletal imaging, particularly the use of peripheral quantitative computed tomography (pQCT) and high-resolution pQCT to learn more about how different diseases impact bone health. I'm also interested in global health and the use of densitometry equipment in more resource limited settings.

What I hope to gain from joining ANZBMS: Opportunities to network and collaborate with other researchers with interests in bone and muscle imaging. I'm keen to learn about potential approaches to automate image processing.



Mary Louise Fac

First year PhD student in the Bone Cell Biology and Disease Unit, St Vincent's Institute

Research category: Basic

Research Interests: Material and structural determinants of bone strength spanning from mineral crystal properties on the nanoscale, to the hierarchical organisation of bone on the microscale.

What I hope to gain from joining ANZMBS: Experience in discussing my work with experts in the field, learn more about novel bone-related research, and build valuable connections with other students and academics.





ANZBMS Committee Updates

Program Organising Committee

The POC wants to highlight two social functions which you don't want to miss out on at the annual ANZBMS meeting 2023 in Newcastle:

Tastes of the Hunter Valley Excursion

Tastings include chocolate, gin, cheese and wines. Transfers are included in the cost. Lunch at own expense.

Cost: \$50

When? Sunday, 22nd October 2023
8.30AM - 2.00PM

Where? Hunter Valley
(Meet outside Newcastle Town Hall at 8.15AM ready to depart at 8.30AM sharp!)

Bones & Brews

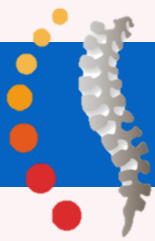
This is a casual drinks and dinner social event which will bring together like-minded friends and colleagues. **Places are limited so sign up ASAP!**

Cost: \$25 Students/ECI | \$40 others

When? Sunday, 22nd October 2023
7.30PM - 10.00PM (Commences after Welcome Reception)

Where? Foghorn Brewery

Two great opportunities to mingle and meet new people - sign up for those events on your dashboard as an add-on!



ANZBMS Committee Updates

Clinical Practice Committee

This year, the Clinical Practice Committee developed a webinar series on osteoporosis management that ran over three evenings from May to September. This involved a number of the society's experts from early career to senior members discussing key facets of the "life-cycle" of osteoporosis management: starting treatments, sequencing treatment and the consideration of safe drug intermissions, where appropriate. The webinars were well received, led to fruitful discussion and will soon be available for all members on the ANZBMS website. Feel free to log on and listen in to these recordings.

The year's educational activities do not end with the ASM in October! The committee is hosting the Clinical Postgraduate Seminar on the weekend of the 9th and 10th December. This will be delivered in an online virtual format, over two half-day sessions. The seminar will cover broad themes with a focus on pragmatic case-based discussions, and clinical updates. Further information on this seminar, the program and registration, can be found here.

The committee hopes that through these educational activities, the society remains the primary go-to place for clinicians to remain updated and engaged in bone and mineral medicine. If you'd like to hear more or have ideas around clinician engagement/education please feel free to email Christian on christian.girgis@sydney.edu.au



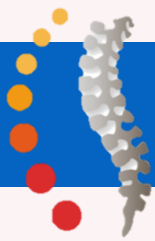
ANZBMS

**Advanced Clinical
Postgraduate Meeting**

**Saturday 9th & Sunday 10th
December 2023**



Register in advance for this meeting:
<https://www.anzbms.org.au/advanced-clinical-postgraduate-meeting.asp>



ANZBMS Committee Updates

Clinical Practice Committee

Clinical Postgraduate Seminar schedule

Saturday 9th December

The Clinicians Guide to Genetic Causes of Bone Fragility: Lecture-Based

[Prof Emma Duncan, King's College London](#)

When and How to Consider Genetic Testing for Bone: Case-Based

[Prof Rory Clifton-Bligh, University of Sydney](#)

What's New in Bone Turnover Markers?: Lecture-Based

[Dr Samuel Vasikaran, Royal Perth Hospital](#)

When and How to Use Bone Turnover Markers and Bone Density in Osteoporosis Management: Case-Based

[A/Prof Nick Pocock, St Vincent's Hospital \(Syd\)](#)

Unique Considerations in Men with Osteoporosis: Lecture-Based

[Dr Ie-Wen Sim, Eastern Health & Monash Health](#)

Androgens and Osteoporosis Therapies in the Male Patient: Case-Based

[Prof Bu Yeap, University of Western Australia](#)

Sunday 10th December

Bone Fragility in Pre-menopausal Women: Lecture-Based

[Dr Shoshana Sztal-Mazer, Alfred Health](#)

Addressing Low Bone Density and Fragility Fracture in the Younger Female: Case-Based

[Dr Anne Trinh, Hudson Institute](#)

Secondary Causes of Osteoporosis: Lecture-Based

[Dr Hanh Nguyen, Monash University](#)

When and How to Consider Another Cause of Osteoporosis: Case-Based

[Dr Syndia Lazarus, Queensland Health](#)

Emerging Diagnostic Modalities in Bone

[Dr Roger Zebaze, Monash University](#)

Panel Discussion on Everyday Challenges, Clinical Conundrums

TBC

Clinical Guidelines & Consensus Documents

Recently published, clinically relevant guidance documents and position statements are noted below. These documents have not been specifically endorsed by ANZBMS Council.

Munns CF, Yoo HW, Jalaludin MY, Vasanwala R, Chandran M, Rhee Y, But WM, Kong AP, Su PH, Numbenjapon N, Namba N, Imanishi Y, Clifton-Bligh RJ, Luo X, Xia W. Asia-Pacific Consensus Recommendations on X-Linked Hypophosphatemia: Diagnosis, Multidisciplinary Management, and Transition From Pediatric to Adult Care. JBMR Plus. 2023 May 1;7(6):e10744. DOI: [10.1002/jbm4.10744](https://doi.org/10.1002/jbm4.10744).

This is a guidance document on X-linked Hypophosphatasia (XLH) authored by an expert panel consisting of 15 paediatric and adult endocrinologists from nine countries/regions across the Asia-Pacific. Following a thorough literature review and rigorous methodology based on the GRADE tool for assessing level of evidence and the delphi technique, the recommendations were finalised.

The statements discuss:

- Clinical indicators for suspicion and evaluation for renal phosphate wasting in children
- Clinical factors which should trigger the evaluation for hereditary renal phosphate wasting in adults
- The essential clinical and/or radiologic features for a presumptive diagnosis and biochemical criteria for confirmation of diagnosis of XLH in children
- The essential criteria to confirm a diagnosis of XLH in adults
- That oral phosphate and active vitamin D should be prescribed according to national and international guidelines to children and symptomatic adults with XLH and these patients should undergo monitoring for complications from these medications
- That burosumab should be used, if available, for the treatment of XLH in children ≥ 1 years, adolescents and adults and monitored appropriately
- That burosumab is not recommended for use in pregnant women and its excretion in milk is unknown; pregnant women with XLH should be treated with oral phosphate and active vitamin D, if needed
- The involvement of a multidisciplinary team including a physician with an interest in XLH, orthopaedic surgeon, a neurosurgeon or craniofacial surgeon, a dentist, a physiotherapist and occupational therapist and an otolaryngologist or audiologist for optimal screening and timely management of children with XLH
- Appropriate follow-up & monitoring of children, adolescents and adults with XLH
- The transition from paediatric to adult care
- The role of telemedicine
- Methods of ensuring appropriate education and continued development of healthcare professionals

Ponzano M, Tibert N, Brien S, Funnell L, Gibbs JC, Keller H, Laprade J, Morin SN, Papaioannou A, Weston Z, Wideman TH, Giangregorio LM. International consensus on the non-pharmacological and non-surgical management of osteoporotic vertebral fractures. Osteoporos Int. 2023 Jun;34(6):1065-1074. DOI: [10.1007/s00198-023-06688-9](https://doi.org/10.1007/s00198-023-06688-9).

A steering committee of physicians and other health care professionals, individuals living with vertebral fractures and stakeholders designed the methods to develop this consensus statement which focuses on pain management, bracing, exercise, safe movement education, education and training, and nutrition. Following a literature search and development of a survey to address these focus areas, 76 people with a degree in medicine, physiotherapy, kinesiology and experience in the management of osteoporotic vertebral fracture were invited to participate in the development of the consensus statements. The first round of voting involved 8 survey questions and 49 statements with 31 individuals participating, while 27 participated in the 2nd round for voting on 30 statements.

Amongst other discussion points, the statement highlights the importance of

- Avoiding prolonged or continuous bed rest following a vertebral fracture while also avoiding activities involving heavy physical exertion or heavy lifting in the first 12 weeks following fracture
- Appropriate engagement of a physiotherapist/exercise physiologist and dietitian
- Appropriate patient education regarding fracture implications including re-fracture risk, safe movement education, recommended protein, calcium and vitamin D intake
- Appropriate pain management and referral as required
- Progressive resistance training to improve physical functioning after the first 12 weeks, avoiding exercises and activities that are high-risk
- Careful physical assessment avoiding assessment of spinal range of motion in people with acute vertebral fracture/multiple fractures

Find us on X!

Links to events, opportunities and community updates are posted daily on X (formerly Twitter).

To find our pages, you can search "ANZBMS twitter" or follow the links below



ANZBMS Society
ANZBMS ECIC

Khan AA, AbuAlrob H, Al-Alwani H, Ali DS, Almonaei K, Alsarraf F, Bogoch E, Dandurand K, Gazendam A, Juby AG, Mansoor W, Marr S, Morgante E, Myslik F, Schemitsch E, Schneider P, Thain J, Papaioannou A, Zalzal P. Post hip fracture orthogeriatric care-a Canadian position paper addressing challenges in care and strategies to meet quality indicators. Osteoporos Int. 2023 Jun;34(6):1011-1035. DOI:[10.1007/s00198-022-06640-3](https://doi.org/10.1007/s00198-022-06640-3).

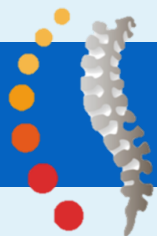
This study utilised a multidisciplinary Canadian hip fracture working group to develop practical recommendations to meet quality indicators in post-hip fracture care for adults aged 50 years and over

METHODS

- They performed a comprehensive narrative review to identify key articles on post-hip fracture orthogeriatric care and synthesize relevant findings
- Recommendations were categorised into pre-operative, surgical care, post-operative and osteoporosis management and future fracture prevention

RECOMMENDATIONS

- Pre-operative recommendations included
 - Multi-disciplinary care to facilitate rapid medical optimisation and reduce surgical delays
 - Surgical intervention within 24 hours (48hrs if anti-coagulated)
 - If surgery was to be delayed >12hours, thromboprophylaxis was recommended
 - utilisation of regional nerve blocks was encouraged
- Surgical care recommendations included
 - Acceptability of sliding hip screws and cephalomedullary nails for stable intertrochanteric hip fractures
 - Intramedullary nails for sub-trochanteric or reverse obliquity intertrochanteric fractures
 - Arthroplasty preferred over fixation for displaced femoral neck fractures
 - Weight bearing to facilitate early mobilisation (if possible)
- Post-operative recommendations included
 - Identifying risk factors for delirium
 - Inter-disciplinary orthogeriatric care to optimise outcomes and clinical care
 - Rehabilitation in acute, post-acute and community settings
 - Institution of aggressive medical therapy to avoid future fracture
 - Nutritional optimisation to reduce morbidity & mortality
 - Thromboprophylaxis for minimum 10 days post-op



ECIC Co-Chairs Report

This year has taken off with a flying start here in the ECIC. We have all been extremely busy as we work towards the annual scientific meeting, driving our ongoing initiatives and launching new undertakings too!

This year, we were excited to launch the re-branded 'Coffee Catch-ups' as 'ECI ENGAGE: The ANZBMS ECIC Seminar Series for Connecting and Advancing ECI Potential'. Our first seminar of the series, which was a great success, was held in August and was an excellent opportunity for our community to learn the 'Do's & Don'ts in Co-Design & Consumer-Based Research'. Watch this space, as our Events Team are busy preparing for another webinar later this year. Our usual timetable has also seen the ANZBMS RACP Webinar Series and Fellowship Coaching Program commence. Finally, we are excited to also announce that later this year, ANZBMS, as the lead society, are co-hosting with KSBMR to deliver an online webinar showcasing presentations from EMCRs from both societies, an initiative of the IFMRS Future Global Leaders. This is an excellent opportunity for our ECI's to not only have an invited international webinar presentation, but also be recognised as a future global leader in bone and mineral research. This is a webinar not to be missed: keep an eye out for details to be released over the coming weeks!

Springtime is finally here, and soon the ANZBMS Annual Scientific Meeting will be too, held from the 22nd-25th October 2023 at the Newcastle City Hall. The ASM is a fantastic opportunity for ECIs to disseminate their research and build long-lasting collaborative relationships. We are excited to be bringing you

another year of Speed Networking, Bones & Brews, our Career Development session on "Tackling Academic Promotion and Burnout" and Clinical Cases sessions. We strongly encourage all ECIs attending the meeting to come along and get involved! Also, if you want to get to know our ECIC, we will be identifiable at the conference by our lanyards – come and say hi, we would love to meet you!

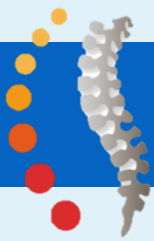
The ECIC is committed to promoting ANZBMS ECIs and their achievements – if you have recently published an article and would like us to promote it through our platforms, please send a link to the publication and a short blurb (no more than 50 words) to ecic@anzbms.org.au. Also keep an eye out on our X (formerly Twitter) account (@ANZBMS_ECIC) for updates and our Member Monday highlight series!

Until the next newsletter,

Bridie Mulholland and Cassandra Smith

ECIC Co-Chairs





ANZBMS ECI Spotlight



Dr Lena Batoon, PhD

Postdoctoral Research Fellow, School of Dentistry, University of Michigan

Honorary Research Fellow, Mater Research Institute, The University of Queensland

 @lenabatoon

Congratulations on your ASBMR Harold M. Frost award! Can you briefly describe what your research is about / what are your research interests?

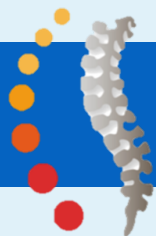
Thank you! I am very grateful to be a recipient of this award, which supported my attendance at the ORS International Musculoskeletal Biology Workshop. My current project involves a novel mouse model where cells can be selectively induced to undergo cell death (apoptosis) in order to study subsequent apoptotic cell clearance (efferocytosis). Efferocytosis is well recognized in many physiological systems to be critical for tissue homeostasis and repair. In bone, the efferocytic processes are still underexplored despite the global acknowledgement that apoptosis is a main fate of osteoblasts. My recent findings are very fascinating. Pulsed induction of osteoblast apoptosis stimulated macrophage efferocytosis and resulted in a remarkable increase in bone volume and density. Our lab is now looking at how this efferocytic mechanism contributes to pathological bone formation in metastatic prostate cancer.

What motivates your research/ what are your goals for the future?

Five days after graduating from my undergraduate degree, my mum lost her battle to metastatic bone cancer. She was the kindest person I know. In order to honour her life, I dedicate my time and effort to finding a cure for this debilitating and incurable disease. My goal is to acquire funding so that I can drive and pursue my own research in bone cancer.

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

The poster hall is a great place to learn and network. If possible, exchange social media contacts with the people you meet to stay connected. Make sure to attend the networking sessions and social events. Check-out page 17 for more tips!



ECIC Sessions and Networking Events

October 2023

22 SUNDAY	23 MONDAY	24 TUESDAY
4:00PM - 5:30PM Science at Speed - Networking	7:00AM-8:30AM ECIC Career Development	7:30PM-11:30PM Conference Dinner
6:00PM - 7:30PM Welcome Function	Breakfast	
7:30PM-9:30PM Bones & Brews	5:30PM-8:00PM Clinical Cases in Metabolic Disease Seminar	

Science at Speed - Networking Session

This event aims to foster collaboration and networking across different disciplines and career levels. Each pair will be given 6 mins to pitch their research interests. Over the hour, each attendee will network with 10 people. Attendees will be categorised as Basic and Clinical Research.

Welcome Function

A fantastic opportunity for delegates to catch up with old friends from past conferences, make new connections and interact with the trade sponsors.

Bones & Brews

Where: Foghorn Brewery

This is a casual drinks and dinner social event which will bring together members at all levels from all three societies. The evening will feature trivia along with substantial but informal food and drinks.

ECIC Career Development Breakfast

Title: Tackling Academic Promotions and Burnout

This session will explore academic positions, academic promotions, and burnout. Attendees will learn tips, tricks and gain insight into landing an academic position out of a PhD, navigating the academic promotion process and how to tackle burnout.

Clinical Cases in Metabolic Disease Seminar

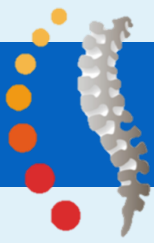
Where: Newcastle City Hall

Get your Clinical fix by signing up to the Clinical Cases in Metabolic Disease Symposium. Dinner and drinks is included with your ticket price. This year, we encourage participants to also consider the multidisciplinary approach to metabolic bone disease and the important role of allied health in patient care.

Conference Dinner

Where: Noah's on the Beach

Get together with friends old and new, to celebrate the achievements over the last year at this fantastic location! There is sure to be an afterparty, for those wanting to extend the festivities.



ANZBMS Lab Spotlight

It takes a team to make science happen. Here's a snapshot of members from a bone clinic, and what they're up to!

Bone Cell Biology and Disease Unit, St Vincent's Institute of Medical Research
Featuring: Professor Natalie Sims (Lab Head) and Natalie Koh (1st year PhD student)

Professor Natalie Sims, Lab Head

How long have you been in this lab/group?

It's almost 22 years since I moved to Melbourne and started my own team; we moved to SVI 17 years ago.

What topics are researched in your lab?

Anything to do with the control of bone mass, organisation and composition. We are interested in the signalling pathways that control each of these components of bone strength, and use human samples, mouse models, and cell culture systems to get answers!

What was your career trajectory leading to this moment?

I started in the bone field in my Honours year with Howard Morris in Adelaide and then, even though I hadn't planned it, I did a PhD in the same lab. I then went to the Garvan to work with Edith Gardiner and John Eisman, doing some of the first studies of bone phenotypes in genetically altered mouse models, then a second postdoc at Yale University with Roland Baron where I was lucky enough to work on a lot of new mouse models. I then moved back to Australia, and came to Melbourne to work with T.J. (Jack) Martin. This is where I started my own research team, and ever since then I've had the immense privilege of working in a city that I love, in a very supportive research institute, with a great bunch of people trying to answer useful questions about how bone works.

What's your mentorship style?

I try to share my passion and excitement about research; thinking carefully, working hard, and not compromising on quality. I also try to meet my mentees where they are: everyone brings a unique perspective, so I try to help them find their own way and explore their own interests within our lab's overarching interests.

What's a fun fact about your lab?

One of our lab members carries a fairy wand in her labcoat, just in case.



ANZBMS Lab Spotlight

Natalie Koh, First year PhD student

How long have you been in this lab?

1 year + 9 months

What inspired you to choose the lab?

I was in my final year of undergrad when I had the privilege to be lectured on bone biology by Natalie Sims. On top of paying extra attention to her because we share the same name and I had a broken ankle at that time, she made bone biology seem like the coolest and most exciting subject, likening trabecular bone to an Aero chocolate bar. Needless to say, I was very interested in joining the Bone lab during my Honours year, and it seems like I won't be leaving for a while.

What are you excited to do?

Any type of mouse work.

What's a fun fact about your lab?

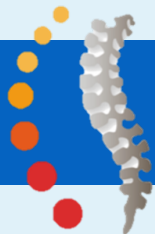
Most of us are named Natalie, and I've happily assumed the position of Natalie minima.



Here's most of the team with our newest PhD graduate, Dr Martha Blank, on the day of her graduation.

If you and your lab want to be featured in our next issue, please email us!

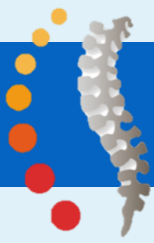
newsletter@anzbms.org.au



ECI Funding Opportunities

Grant/Fellowship Scheme*	Application Period
<u>NHMRC Investigator Grants</u>	Open: 13 Sep 2023, Close: 8 Nov 2023
<u>ARC Industry Fellowships</u>	Open: 06 Sep 2023, Close: 1 Nov 2023
<u>The MJA Award for Excellence in Medical Research</u>	Deadline: 31 December 2023
Amgen/ Healthy Bones Australia/ANZBMS Clinical Grants Program	Applications close: TBC 2023
ANZBMS BHF Interdisciplinary Collaborative Grant	Applications close: 3 November 2023
ANZBMS Health Innovation Grant	Applications close: 3 November 2023

**Clicking on the scheme will redirect you to the grant/fellowship website.*



ASM Awards and B.O.N.E. Awardees

ANZBMS will be presenting a number of awards at the ASM!

ANZBMS Highest Rated Student Abstract Award

For the student (first author) that receives the highest score from the scoring committee

Roger Melick Young Investigator Award

Oral presentation winner of the session as assessed by a judging panel

Christopher and Margie Nordin Young Investigator Poster Award

Poster presentation winner as assessed by a judging panel

Amgen-ANZBMS Outstanding Abstract Award

Awarded to the five highest ranking abstract submissions to ANZBMS

ANZBMS Clinical Case Award

Oral presentation winner of the Clinical Cases session as assessed by a judging panel

Click [HERE](#) for more information about the awards.

Meet this year's Bridging Overseas Network Exchange (B.O.N.E) Program Awardees!



Dr Lama Alabdulaaly

Talk title: Pth1r Signaling in Adipoq+ Bone Marrow Cells (MALPs) Decreases Bone Mass and Restricts the Anabolic Response to PTH

"I am looking forward to seeing a part of the world I've never been to!" - Lama

Dr Michaela Tencerová

Talk title: Bone marrow adipose tissue under control of nutrient sensors

"I am excited to attend ANZBMS conference as it is gonna be a great opportunity to meet colleagues from all over the world and share our knowledge and expertise in the field." -Michaela





ANZBMS Member Awards & Achievements



Martha Blank, St Vincent's Institute of Medical Research

2023 Rising Star Award by the St Vincent's Institute of
Medical Research

Marc Sim, Edith Cowan University

2023 WA Young Tall Poppy Award



Ahmed Al Saedi, Harvard Medical School

2023 ASBMR Harold M. Frost Young Investigator Award

Laura Trainor, University of Adelaide

2023 ASMR ASM Highest Scoring Abstract Award



***Submit your achievements at
newsletter@anzbms.org.au!***



Shangfu Li, Dian Teguh, Depeng Wu, Lesong Liu, Chaofeng Hu, Jinbo Yuan, Charles A Inderjeet, Jiake Xu. Antidementia medication acetylcholinesterase inhibitors have therapeutic benefits on osteoporotic bone by attenuating osteoclastogenesis and bone resorption. *J Cell Physiol.* 2023;238(8):1823-1835. DOI: [10.1002/jcp.31057](https://doi.org/10.1002/jcp.31057)

What is the background of the study?

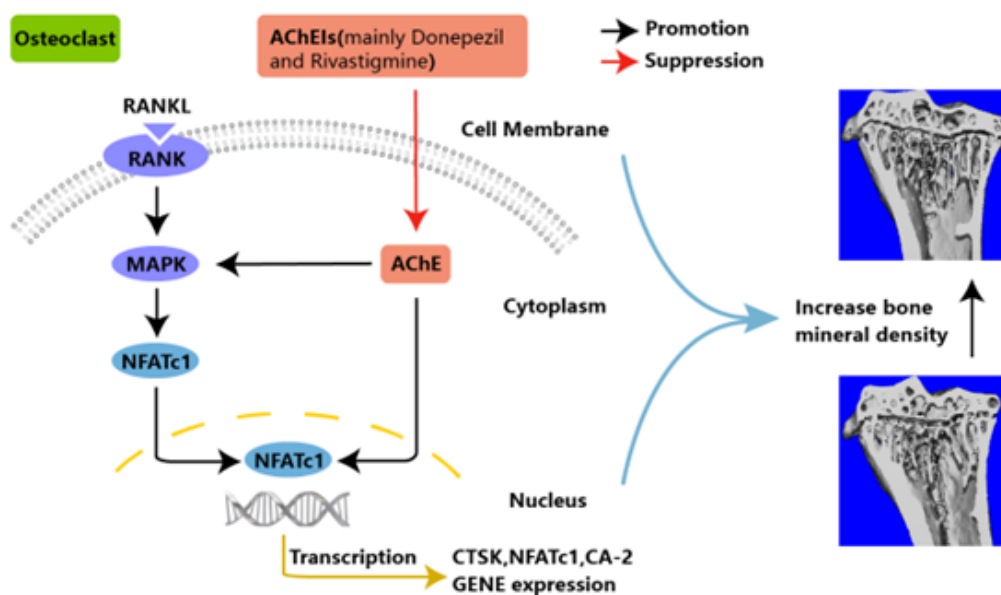
The mechanisms underlying the connections of Alzheimer's disease and osteoporosis remain enigmatic. This study was designed to determine whether the use of acetylcholinesterase inhibitors (AChEIs; such as Donepezil, Rivastigmine and Galantamine), a group of drugs that stimulate acetylcholine receptors and are used to treat Alzheimer's disease, is associated with osteoporosis protection and inhibition of osteoclast differentiation and function.

What did you find?

We found that Donepezil and Rivastigmine inhibited RANKL-induced osteoclastogenesis and impaired osteoclastic bone resorption. Moreover, AChEIs reduced the RANKL-induced transcription of NFATc1, and expression of osteoclast marker genes to varying degrees (mainly Donepezil and Rivastigmine but not Galantamine). Furthermore, AChEIs variably inhibited RANKL-induced MAPK signaling accompanied by downregulation of AChE transcription. Finally, AChEIs protected against OVX-induced bone loss mainly by inhibiting osteoclast activity. Taken together, AChEIs (mainly Donepezil and Rivastigmine) exerted a positive effect on bone protection by inhibiting osteoclast function through MAPK and NFATc1 signaling pathways through downregulating AChE. Our findings have important clinical implications that elderly patients with dementia who are at risk of developing osteoporosis may potentially benefit from therapy with the AChEI drugs.

What is the application of these findings?

Our study may influence drug choice in those patients with both Alzheimer's disease and osteoporosis. AChEIs that have the dual benefit to both ageing bone and ageing brain are useful for the future therapeutic strategy to improve compliance and to reduce polypharmacy, hence assisting in easing the economic burden on the world health care system.



A schematic diagram illustrating the suppression of AChEIs on RANKL-induced MAPK and NFATc1 activation during osteoclastogenesis, thus increasing bone mineral density.



Salga M, Samuel SG, Tseng H, Gatin L, Girard D, Rival B, Barbier V, Bisht K, Shatunova S, Debaud C, Winkler IG, Paquereau J, Dinh A, Genêt G, Kerever S, Abback PS, Banzet S, Genêt F, Lévesque JP, Alexander KA. **Bacterial lipopolysaccharides exacerbate neurogenic heterotopic ossification development.** *J Bone Miner Res.* 2023 Aug 21. DOI: [10.1002/jbmr.4905](https://doi.org/10.1002/jbmr.4905)

What is the background of the study?

Neurogenic heterotopic ossifications (NHO) are incapacitating complications of traumatic brain (TBI) and spinal cord injuries (SCI) which manifest as large heterotopic bones growing in periarticular muscles. There is no pharmacological treatment to prevent their development because the pathobiology is poorly understood.

Several retrospective studies showed that NHO prevalence was higher in patients who suffer concomitant infections. However, these studies did not investigate whether these infections directly contribute to NHO development or reflect the immunodepression observed in patients with SCI and TBI. Therefore, we evaluated the role of infection in NHO development using our novel mouse model of NHO development after SCI and in patients with TBI in collaboration with Professor François Genêt's team at APHP Hôpital Raymond Poincaré and Professor Sébastien Banzet's team at INSERM Institut de Recherche Biomédicale des Armées.

What did you find?

Using our NHO mouse model, our team demonstrated that lipopolysaccharides produced by gram-negative bacteria amplify the development of NHO in injured muscles after SCI via the cell surface receptor TLR4 and the intracellular signalling protein TRIF/TICAM1. Lipopolysaccharide also increased the expression of osteoblast markers in cultures of human fibro-adipogenic progenitors isolated from muscles surrounding NHO biopsies. Finally, in a case-control retrospective study in patients with TBI, we find a significant association between nosocomial infections with the gram-negative bacterium *Pseudomonas aeruginosa* (a frequent cause of infections in hospitals) and the development of NHO in patients.

What is the application of these findings?

As NHO is a frequent and incapacitating complication in victims of traumatic brain and spinal cord injuries, our research highlights that strict infection management is a prerequisite to limit NHO development.

Did you face any challenges?

Fortunately, we did not face any substantial challenges during this study however the generation of data for this study involved multiple researchers and clinical experts and we are very grateful to all those that contributed to this study.



Sheu A, O'Connell RL, Jenkins AJ, Tran T, Drury PL, Sullivan DR, Li L, Colman P, O'Brien R, Kesäniemi YA, Center JR, White CP, Keech AC. Factors associated with fragility fractures in type 2 diabetes: An analysis of the randomised controlled Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) study. *Diabetes Metab Res Rev.* 2023 Jul;39(5):e3631. doi: [10.1002/dmrr.3631](https://doi.org/10.1002/dmrr.3631).

What is the background of the study?

Risk of fragility fractures is elevated in some, but not all studies of people with type 2 diabetes mellitus (T2D). Differences may relate to clinical heterogeneity of study cohorts, given that there are a number of diabetes-related risk factors that have been identified (eg insulin use, longer T2D duration, microvascular complications). However, many clinical features overlap within an individual (i.e, T2D people with microvascular complications are more likely to have longer T2D duration and require insulin therapy). There have been no prospective studies in which detailed T2D-related characteristics have been simultaneously collected with radiologically-verified fragility fractures at all sites, and therefore it has not been possible to establish the independent contribution of each diabetes-related characteristic to fracture risk.



What did you find?

In this post-hoc analysis of the randomised controlled trial, the Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) study, detailed clinical and biochemical baseline T2D data were collected. Incident fractures at any site were collected as part of adverse events monitoring. Vascular disease (macrovascular disease HR 1.52 in men, neuropathy HR 2.04 in women), insulin use (HR 1.62 in men, HR 1.54 in women) and HDL-cholesterol (HR 2.21 in men) were independently associated with fragility fracture at any site, over median 5-years follow-up. This is a significant finding as this is the first study to establish that insulin use and

diabetes complications are associated with fragility fractures, independent of clinical confounders such as duration of disease and glycaemic control.

This study extends the current literature to include associates of fractures at all sites, not only the hip, which is significant given that >90% of fractures occurred at non-hip sites in our study. This is also the first study to evaluate younger study participants (aged 50-75 years), which is a more clinically-relevant age group of T2D subjects, given that diabetes is increasingly being diagnosed earlier.



ANZBMS Member Publications

Sheu A, O'Connell RL, Jenkins AJ, Tran T, Drury PL, Sullivan DR, Li L, Colman P, O'Brien R, Kesäniemi YA, Center JR, White CP, Keech AC. Factors associated with fragility fractures in type 2 diabetes: An analysis of the randomised controlled Fenofibrate Intervention and Event Lowering in Diabetes (FIELD) study. *Diabetes Metab Res Rev.* 2023 Jul;39(5):e3631. doi: [10.1002/dmrr.3631](https://doi.org/10.1002/dmrr.3631).

What is an application of your finding?

This study provides clinically-relevant markers to flag high-risk patients. We have previously shown that T2D is associated with increased post-fracture mortality, thus this study highlights which T2D patients may benefit from closer monitoring of their bone health, and provides impetus for interventional studies to be conducted.

Did you face any challenges during the study?

During the COVID lockdowns, I could not go on site to analyse the dataset and remote access was not possible, so there were some delays in completing the analyses.

ANZBMS Researchers: We want to share & celebrate your wins!

We are on the lookout for members who have celebrated success (awards and publications) to be highlighted in the Spotlight or Publication sections for the upcoming editions of the newsletter. If you know of someone or want to self-nominate, please email us at newsletter@anzbms.org.au



**WE WANT
YOU!**

***The ANZBMS Newsletter Editorial Board is
searching for new members!***

Open to all ANZBMS members at any stage in their career. For more information and to apply, please e-mail newsletter@anzbms.org.au with up to 150 words explaining why you would be a good addition to the newsletter team.



Calendar of Events

33rd Australian & New Zealand Bone and Mineral Society Annual Scientific Meeting

SAVE THE DATE **October 22 – 25, 2023**
Newcastle City Hall, New South Wales



ANZBMS/RACP Webinar

9 October 2023 (6pm AEDT/8pm NZDT), virtual
A/Prof Josh Lewis - Abdominal Aortic Calcification and Cardiovascular Disease
Register [here](#)

ASBMR Annual Scientific Meeting

13-16 October 2023, Vancouver, Canada
Abstract submission: closed
More information [here](#)

SIOMMS-IFMRS International Fellow Day

26 October 2023, Sicily, Italy
Offering accommodation and registration fee waivers to ECIs, more information [here](#)

OIFE Online Investigator Meeting 2023

17 November 2023, virtual
Abstract submission deadline: 9 October 2023
More information [here](#)

October 20 is World Osteoporosis Day!



Wednesday 22 November 2023

18:30 - 20:15

Light refreshments from 17:50

*Location: St. Vincent's Institute (SVI)
9 Princes Street, Fitzroy*

Please join us for drinks afterwards at The Workers Club (Gertrude St, Fitzroy)

Melbourne Bone Group Committee: *Prof Natalie Sims, A/Prof Kathryn Stok, Prof Liesbeth Vandenput, Dr Ali Ghasem Zadeh, Dr Ayse Zengin and Dr Martha Blank*