

A high-resolution, false-colored micrograph of a longitudinal section of a mouse tibia. The image shows the internal structure of the bone, with collagen stained in magenta and bone marrow in turquoise. The tibia is oriented vertically, showing the epiphysis at the top and the diaphysis below. The bone marrow is a dense, textured area in the center, flanked by the bone cortex. The collagen staining highlights the fibrous structure of the bone.

*Issue 5, December 2020*

**ANZBMS**

# **EARLY CAREER INVESTIGATOR Newsletter**

***2020 Annual Scientific Meeting  
Going Virtual  
ECI Spotlights  
B.O.N.E Program***

Cover Image: Longitudinal section of mouse tibia imaged with Second Harmonic Generation imaging (magenta: collagen, turquoise: bone marrow) taken by Martha Blank, (MSc), St. Vincent's Institute of Medical Research, Bone Cell Biology and Disease Unit, The University of Melbourne.



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

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 @anzbms\_ecic

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## ECIC Co-Chairs Report

Welcome to Issue 5 of the ANZBMS ECIC Newsletter, the final one for 2020. I would like to start by giving a huge thank you and acknowledgment to Dr Ayse Zengin who is the outgoing ANZBMS ECIC Co-Chair. Ayse has been a brilliant leader of the ECIC over the last 2 years, contributing to many new initiatives that have helped shaped the success of the ECIC. Ayse was also a member of the Events subcommittee organising events for ECIs as part of the Annual Scientific Meetings as well as the new initiative for 2020 - the Virtual Coffee Catch-Ups.

We are excited to announce that Dr. John Kemp from University of Queensland will take on the Co-Chair role over the next two years. John has done a tremendous role in helping to drive career development initiatives over the last 12 months. Welcome John!

Welcome to our new members who were elected to join the ECIC - Dr. Alex Barker, Dr. Scott Youtlen, Dr. Niloufar Ansari, Dr. Nicolas Hart, and Dr. Jiao Jiao Li. Please see page 3 to learn more about these new members.

In October (12th-14th), we held the first ANZBMS Virtual Annual Scientific meeting which was a huge success. Despite the meeting being in a virtual format there was still a lot of interactions and sharing of knowledge between delegates through the use of the chat function and asking questions. During the meeting the ECIC hosted 3 events - the Career Development session, that focused on improving chances of securing a fellowship with a panel of successful Fellowship holders and those with experience on review panels. This session was a huge success with 105 delegates attending the live session. The Clinical Cases Session held on Monday evening featured talks and discussion on topics including bone health in obesity and weight loss, prescribing exercise for osteoporosis, and bone health in young women with primary or secondary hypogonadism, with 90 attendees. The final day of the conference started with the ECIC Networking breakfast "Stop, Collaborate, and Listen" which allowed ECIs to make new connections and form potential collaborations. Please see pages 12-14 for more details on these events.

The year ended with our final coffee catch-up, held on 27th November, which focused on 'establishing research independence'. This was a well attended session with great discussion and tips shared. Stay tuned for announcements about the 2021 Virtual Coffee Catch-Up series.

Wishing you a fantastic end of year break and a great start to 2021.

Dr. Melissa Cantley  
ECIC Co-Chair



**Dr. Ayse Zengin**



**Dr. John Kemp**





# Meet the 2021 ECIC

The Early Career Investigator Committee (ECIC), formed in 2017, aims to help shape future bone and mineral research in Australia and New Zealand by fostering active engagement of early career investigators within ANZBMS, supporting professional development and facilitating interactions between junior and senior members.



**Dr. John Kemp**



**Dr. Melissa Cantley**



**Dr. Alicia Jones**



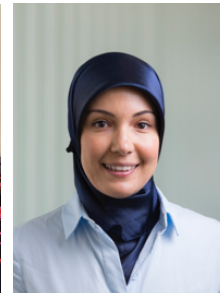
**Dr. Natalie Hyde**



**Dr. Sarah Hosking**



**Dr. Victoria Leitch**



**Dr. Ayse Zengin**

## New Members 2021



**Dr. Alex Barker**



**Dr. Scott Youtlen**



**Dr. Niloufar Ansari**



**Dr. Nicolas Hart**



**Dr. Jiao Jiao Li**

We would like to thank the outgoing ECIC members **Dr. Sabashini Ramchand**, **Dr. Eleanor Thong**, **Dr. Marc Sim** and **Dr. Laura Laslett** for their timeless effort and commitment to the ECIC.

A warm welcome to our new ECIC members - **Dr. Alex Barker**, **Dr. Scott Youtlen**, **Dr. Niloufar Ansari**, **Dr. Nicolas Hart**, and **Dr. Jiao Jiao Li**.

**Dr. Alex Barker**, from University of South Australia, is currently leading and managing the preclinical phase of an industry/CRC funded project, alongside other researchers, to develop antimicrobial orthopaedic devices. Prior to this project which began in 2018, Dr. Barker completed her Ph.D. in Medicine at the University of Adelaide, where she investigated novel bone agents that could improve the rate of bone repair. *Dr. Barker will replace Dr. Cantley on the Communications sub-committee.*

**Dr. Scott Youtlen**, from Garvan Institute of Medical Research, obtained his honors degree in molecular biology before diving into the world of computation biology during his Ph.D. This ignited his passion for skeletal genetics, big beautiful datasets and coffee - he can be seen with a smile on his face whenever these three things coincide. Scott's research is focused on using a system-level understanding of the molecular mechanisms driving skeletal disease to reveal novel therapeutic avenues. *Dr. Youtlen will replace Dr. Laslett on the Career Development sub-committee.*

**Dr. Niloufar Ansari** is a postdoctoral researcher at The Nanomaterials for Biology Group, Monash Institute of Pharmaceutical Sciences. Currently, she works on using nanoparticles for targeted delivery of drugs, and studies the interaction of nanoparticles with cells. *Dr. Ansari will replace Dr. Sim on the Events sub-committee.*

**Dr. Nicolas Hart** is a Senior Research Fellow, and Deputy Lead of the Cancer Survivorship Program at the Cancer and Palliative Care Outcomes Centre (Queensland University of Technology). He researches the mechanobiological basis of exercise medicine to suppress tumour growth and preserve musculoskeletal mass. Dr Hart also researches the pathogenesis of stress fractures in elite athletes and tactical operators and musculoskeletal health in other clinical populations through the Western Australian Bone Research Collaboration. *Dr. Hart will join the Career Development sub-committee.*

**Dr. Jiao Jiao Li (JJ)** is a biomedical engineer, Lecturer and NHMRC Early Career Fellow at the UTS School of Biomedical Engineering, and a chief investigator on the ARC Training Centre for Innovative BioEngineering. She is also an Honorary Associate at the Kolling Institute, University of Sydney. JJ is researching regenerative medicine approaches to treat chronic musculoskeletal conditions such as osteoarthritis and bone loss. She has particular interest in developing stem cell-based therapeutics, as well as biomaterials for tissue engineering of bones and joints. *Dr. Li will replace Dr. Thong on the Clinical Training sub-committee.*

**Dr. Ayse Zengin** has completed her term as Co-Chair. She will replace Dr. Ramchand and remain on the committee as Past Co-Chair and ECIC Representative on the ANZBMS Program Organising Committee.

# ANZBMS ASM Goes Virtual

30<sup>TH</sup> AUSTRALIAN AND NEW ZEALAND  
BONE AND MINERAL SOCIETY  
ANNUAL SCIENTIFIC MEETING  
VIRTUAL 12<sup>TH</sup> - 14<sup>TH</sup> OCTOBER  
[www.anzbmsconference.org](http://www.anzbmsconference.org)



The ANZBMS Annual Scientific Meeting was held in a virtual format from 12-14th October. The meeting was well attended with over 300 registrants from Australia, New Zealand and overseas. A big thank you to the ANZBMS Program Organising Committee for such a fantastic meeting. The POC was chaired by Dr. Michelle McDonald, Dr. Craig Munns and Dr. Christian Girgis who worked with Jim Fawcett and ASN Events team.

## 2020 Program Organising Committee

Basic Science  
Co-chair



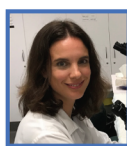
Michelle McDonald

Clinical Science  
Co-chair



Craig Munns

Committee Members



Brya Matthews



Peter Simm



David Scott



Julia Kuliwaba



Tara Brennan  
Sperzana



Rachel Davey

Clinical Science Deputy Co-chair



Christian Girgis

ECIC Committee Members



Melissa Cantley



John Kemp



Ayse Zengin



Sabashini Ramchand

Advisory Committee Members



Rory Clifton-Bligh



David Findlay

## Plenary Speakers



Prof. Harald Jueppner  
MA, USA



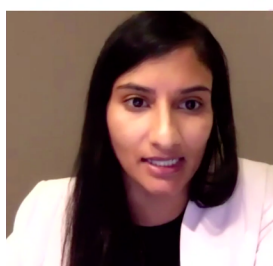
Prof. Jennifer Byrne  
NSW, Australia



Yuki Yoshimoto  
Tokyo, Japan



ANZBMS President Prof. Natalie  
Sims opening the ASM



ASM wrap up - Dr. Sabashini Ramchand (ECIC  
Past Co-Chair and POC rep) thanking the  
ANZBMS ECIC







# ANZBMS ASM Goes Virtual

Thank you to the international and national speakers who presented at the ANZBMS 2020 Annual Scientific Meeting.



**Prof. Harald Jueppner**

Massachusetts General Hospital, USA

**Presentation Title:** "PTH resistance syndrome: genetics and epigenetics"



**Prof. Jennifer Byrne**

NSW Health Pathology

**Presentation Title:** "Tissue bio-banking in research"



**Research Associate Yuki Yoshimoto**

Tokyo Metropolitan Institute of Gerontology, Japan

**Presentation Title:** "The functional role of Scleraxis in enthesis formation"



**Prof. Ego Seeman**

University of Melbourne

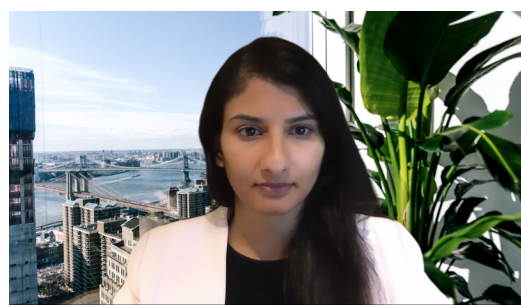
**Presentation Title:** "The pathogenesis and morphological basis of bone fragility"



**Dr. Khoon Lim**

University of Otago Christchurch, NZ

**Presentation Title:** "Engineering the vasculature for bone engineering"



**Dr. Sabashini Ramchand**

University of Melbourne & Harvard University

**Presentation Title:** "Advances in combination therapy for postmenopausal osteoporosis"



**Prof. Mary Bouxsein**

Harvard Medical School

**Presentation Title:** "Non-invasive Imaging in fracture risk assessment"





# Going Virtual in 2020



The 38th Annual Meeting of the Japanese Society for Bone and Mineral Research (JSBMR)  
Oct 09 - 12, 2020 | [kobe, Hyogo](#)   
Organized by: [The Japanese Society for Bone and Mineral Research \(JSBMR\)](#)  
Specialties: [Orthopedics](#)



**Due to the COVID-19 pandemic and the impacts on travel, several conferences converted to a virtual format. We asked some ANZBMS ECIs to share their experiences on attending virtual conferences in 2020.**

**Jakub Mesinovic, PhD Student**  
**Monash University**

## **ANZBMS Annual Scientific Meeting**

The 2020 virtual ANZBMS conference was excellent and the high-quality presentations covered a wide range of interesting topics related to bone and mineral research. My personal highlights included the Roger Melick Young Investigator session, the Amgen Symposium and the ECIC clinical cases in metabolic bone diseases. These presentations led to many thought-provoking questions and a lot of engagement between conference delegates. The virtual format of this meeting had several strengths and I hope that these are integrated into future in-person meetings. Looking forward to ANZBMS 2021!



**Anoohya Gandham, PhD student**  
**Monash University**

## **ASBMR Annual Meeting**

Firstly, the platform used to run the virtual event was very well organised and set out. The addition of the Q&A feature was one of the highlights. Personally, I also found the wide range of oral talks interesting and specifically enjoyed the vitamin D and nutrition oral presentation. It was also great that the posters were easily accessible, and the discussion forum was very useful to connect with the presenters. This event was particularly beneficial for early career researchers like myself as I had the opportunity to make contacts with other researchers who pursued similar interests to me. Overall, it was a very successful event and was one not to be missed.







# Going Virtual in 2020

**Laura Trainor, PhD student**

**University of Adelaide & SAHMRI**

## **ANZBMS Annual Scientific Meeting**

As a first year PhD candidate, 2020 has been for me, like for many others, a year of firsts. A notable first was the ANZBMS Annual Scientific Meeting, which was the first national conference I have attended. As a young investigator, the ANZBMS community was so welcoming, and the virtual format made the normally daunting task of asking questions and talking to speakers easily accessible, both during the oral and poster sessions. A highlight was the networking breakfast, which was a fantastic way to meet other bone researchers in different fields to my own. Whilst I look forward to a (hopefully!) in person meeting next year, this year's meeting was fantastic, and was a great example of a virtual meeting done right.



**Jason Talevski, PhD student**

**University of Melbourne**

## **WCO-IOF-ESCEO Annual Meeting (Aug 20-22)**

With the COVID-19 situation, the IOF had 2 choices: either cancel the 2020 conference or host it virtually. I was personally delighted they chose the second option. I thought the setup of the conference was very clever (having an online virtual lobby) and quite easy to navigate through. I found it very convenient that I also had the option to watch the presentations in my own time for months following the conference. Additionally, as a PhD student, it was very cost-effective not having to pay for flights to Europe and hotels. However, the biggest challenge to the conference was the limitations to potential networking. It is not quite the same connection as being in the same room as someone else, and I found that it was also hard to network at all given the time difference between Europe and Australia.



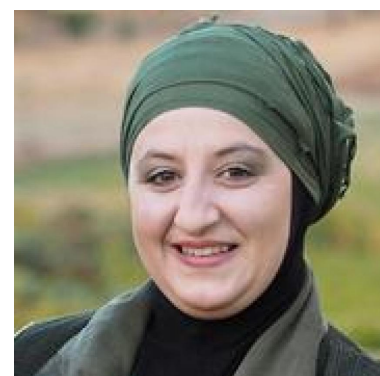
**Dr. Dzenita Muratovic, Postdoctoral Researcher**

**University of Adelaide**

## **ANZBMS Annual Scientific Meeting**

As an early career researcher, I found that the ANZBMS 2020 virtual meeting was a great success and truly learning experience for me. At first, I was afraid that I will miss the opportunity to meet in person with many of my colleagues but instead I was just a click away connecting with new investigators and even working on a few new collaborative ideas. As always, the quality and range of scientific talks and abstracts was on an outstanding level.

I think this year we learned that it would be very beneficial to have both options available in future, in person and virtual as many young scientists are not in a position to attend meetings due to financial constraints or difficulties leaving young kids.





# ANZBMS B.O.N.E. Program

The **Bridging Overseas Networking and Exchange (B.O.N.E) Program** is an ECIC initiative, established in 2018, to address the limited opportunity and funds for invited presentations for early career bone and mineral researchers. It is anticipated that this scheme will boost ANZBMS ECIs track records, increase their exposure, provide travel support and facilitate international networking and collaboration. Each year the respective societies nominate five outstanding early career researchers and the ANZBMS POC invites one early career investigator from an international musculoskeletal society as a speaker at our annual scientific meeting. In a reciprocal agreement, that society's POC will invite one ANZBMS early career investigator to their annual scientific meeting. This year we had the opportunity to collaborate with JSBMR. Specially appointed research associate Yuki Yoshimoto, from Tokyo Metropolitan Institute of Gerontology, was invited by the ANZBMS POC, and presented her work on *the functional role of Scleraxis in enthesis formation*. From ANZBMS, the JSBMR POC invited Dr. Kylie Alexander, from Mater Research, The University of Queensland. She presented her work on *neurogenic heterotopic ossification*.

## Research Associate Yuki Yoshimoto

### Tokyo Metropolitan Institute of Gerontology, Japan



"Congratulations that the 30th ANZBMS annual scientific meeting was held on the web, successfully. I'm grateful for my invitation to this meeting. This time was my first attendance to an international meeting. Thus, it was a memorable experience for me. In the world, now COVID-19 pandemic has been not ended at all. Under the current situation, my presentation, at first planned as a face-to-face ANZBMS-MEPSA-Vitamin D Workshop 2020, was changed to the ANZBMS annual scientific virtual conference. I was a little anxious, because I had to present my research among great researchers of bone biology in this meeting. ANZBMS members and management staff helped me to prepare, register and perform my talk. During my session, I also have meaningful discussions with ANZBMS researchers. It was a great honor for me. I also could attend the ECIC networking breakfast. I was happy to communicate with the young active investigators there. At the same time in my home, my noisy 4-year-old son was still sleeping, I was afraid that he would wake up and disturb me. ECIC members are very bright, we had some discussions, it was a very exciting experience. This time, I realized that there are some differences in research between ANZBMS and The Japanese Society for Bone and Mineral Research, it's interesting. If I have an opportunity to attend ANZBMS meeting again, I'm really looking forward to see ANZBMS investigators in person and to have a discussion, in the near future. Last, I hope an immediate finish of the COVID-19 pandemic and your great happiness from Japan. Thank you so much, again."

## Dr Kylie Alexander

### Mater Research, The University of Queensland



The 38th Annual Meeting of the Japanese Society for Bone and Mineral Research (JSBMR)  
Oct 09 - 12, 2020 | Kobe, Hyogo  
Organized by: The Japanese Society for Bone and Mineral Research (JSBMR)  
Specialties: Orthopedics

"I would like to thank the JSBMR and ANZBMS Early Career Investigator Committees for the 2020 B.O.N.E program award. This award gave me the opportunity to present my research as an invited speaker at the 22nd Annual Meeting of Japan Osteoporosis Society/The 38th Annual Meeting of the Japanese Society for Bone and Mineral Research. While this meeting was virtual and I was not able to directly engage with meeting attendees, this award allowed me to present this work for the first time to these international bone societies which is invaluable for building my research profile. I spoke in the 'Rising stars in skeletal biology' session about our work on neurogenic heterotopic ossification (NHO). We previously developed the first clinically relevant animal model of NHO following SCI in genetically unmodified mice. Using this model, we have been able to unravel fundamental mechanisms linking the original neurological lesion to the development of NHO. We established that (i) monocytes/macrophages are necessary for NHO development, (ii) SCI exacerbates macrophage infiltration into injured muscles with increased and persistent release and accumulation of the pro-inflammatory cytokine oncostatin M (OSM) with increased JAK/STAT3 signalling and (iii) deletion of the OSM receptor gene or inhibition of JAK/STAT3 signalling using a JAK1/2 tyrosine kinase inhibitor significantly reduced NHO development. More recently we established that unlike monocytes/macrophages, neutrophils are dispensable for NHO development following SCI. We are continuing our research to identify systemic factors released in response to SCI which trigger NHO development. Our novel findings also open the opportunity for therapeutic interventions to reduce NHO development in SCI patients. The B.O.N.E program is a fantastic initiative directed at supporting the career development of ECIs in the bone field."





# Highest Ranked Student Abstract Awardee - Lena Batoon

*Ph.D. Candidate*

*Mater Research Institute - University of  
Queensland.*

### What was your research about ?

*My research is focussed on characterising the contributions of osteal tissue macrophages (osteomacs) in bone. Osteomacs were discovered in our lab (Professor Allison Pettit's lab) just over a decade ago. From then until now, we and several labs worldwide have demonstrated their pro-regenerative capabilities. In my Ph.D., I am exploiting this ability with a vision to develop a therapy to improve osteoporotic fracture healing. Excitingly, using an engineered molecule that increases osteomacs on preclinical models of fracture, we've shown that targeting osteomacs can significantly enhance regeneration in both normal and osteoporotic fractures.*

### What did winning this award mean to you?

*I'm really honoured and humbled to win the "Highest Ranked Student Abstract Award". It gave me a great sense of accomplishment knowing that experts in the bone field have acknowledged my research through a 300-word abstract. I also felt a sense of fulfillment knowing that I've conveyed the significance of my work effectively. I'm certain that winning this flattering award will help me on my future endeavours.*

### What was your highlight of the ANZBMS ASM besides winning this award?

*At this year's meeting, I had 3 oral presentations. Winning an award was an amazing achievement but sharing 3 areas of my work and receiving valuable feedback was certainly a great privilege.*

### What are your goals for the future?

*I am hoping to stay in bone research and continue contributing towards improving bone disease patient outcomes. Currently, I am scoping for a postdoctoral position in the bone field. In due time, I'd like to work internationally to expand my knowledge, skillset and network in this field. Ultimately, my dream is to conduct my own research in bone cancer due to a very close personal connection to the impact of bone metastasis.*



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<https://www.anzbms.org.au/grants-and-awards-anzbms-best-rated-student-abstract-award.asp>



# Sol Posen Awardee - Dr. Junjie Gao

*The Perron Institute for Neurological and Translational Science, WA*

**The Sol Posen award is based on the best paper published in the 18 months prior to the closing date of the award.**

Winning the Sol Posen award was a great honor for me. The award winning publication is entitled "Endoplasmic reticulum mediates mitochondrial transfer within the osteocyte dendritic network". It was published last year in the journal *Science Advances* (DOI: [10.1126/sciadv.aaw7215](https://doi.org/10.1126/sciadv.aaw7215)).

This research is about the energy sharing mechanism between osteocytes, by mitochondria-endoplasmic reticulum mediated mitochondrial transfer. Cells in the body have individual tasks and usually work together as a team, sharing resources to repair damage and maintain healthy bodily functioning. The findings are important and could aid the development of improved medical treatments and health benefits for the future. In the next stage, we will further investigate the rescue signal that the stressed osteocyte releases to trigger the transfer of mitochondria.



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<https://www.anzbms.org.au/grants-and-awards-sol-polsen-research-award.asp>

SCIENCE ADVANCES | RESEARCH ARTICLE

### CELL BIOLOGY

## Endoplasmic reticulum mediates mitochondrial transfer within the osteocyte dendritic network

Junjie Gao<sup>1,2,3</sup>, An Qin<sup>4\*</sup>, Delin Liu<sup>1,2\*</sup>, Rui Ruan<sup>2\*</sup>, Qiyang Wang<sup>3</sup>, Jun Yuan<sup>1,2</sup>, Tak Sum Cheng<sup>2</sup>, Aleksandra Filipovska<sup>5</sup>, J. M. Papadimitriou<sup>2,6</sup>, Kerong Dai<sup>4</sup>, Qing Jiang<sup>7</sup>, Xiang Gao<sup>8</sup>, Jian Q. Feng<sup>9</sup>, Hiroshi Takayanagi<sup>2,10†</sup>, Changqing Zhang<sup>3†</sup>, Ming H. Zheng<sup>2,1†</sup>

Mitochondrial transfer plays a crucial role in the regulation of tissue homeostasis and resistance to cancer chemotherapy. Osteocytes have interconnecting dendritic networks and are a model to investigate its mechanism. We have demonstrated, in primary murine osteocytes with photoactivatable mitochondria (PhAM)<sup>flox</sup> and in MLO-Y4 cells, mitochondrial transfer in the dendritic networks visualized by high-resolution confocal imaging. Normal osteocytes transferred mitochondria to adjacent metabolically stressed osteocytes and restored their metabolic function. The coordinated movement and transfer of mitochondria within the dendritic network rely on contact between the endoplasmic reticulum (ER) and mitochondria. Mitofusin 2 (Mfn2), a GTPase that tethers ER to mitochondria, predominantly mediates the transfer. A decline in Mfn2 expression with age occurs concomitantly with both impaired mitochondrial distribution and transfer in the osteocyte dendritic network. These data show a previously unknown function of ER-mitochondrial contact in mediating mitochondrial transfer and provide a mechanism to explain the homeostasis of osteocytes.





# ANZBMS ASM ECIC Events

## Clinical Cases Session, Monday 14th October, 6pm

The Clinical Cases in Metabolic Bone Disease Seminar is now in its third year. In previous years, trainees have presented challenging clinical cases, with the best presentation receiving an award. However, due to the Covid-19 pandemic and virtual ASM, the format of the session was changed this year. Three experts presented a clinical vignette followed by relevant literature pertaining to the case, short expert commentary, and questions and discussion.

The three topics, presenters, and expert commentators were:

**Bone health in obesity and weight loss** (Presented by Prof. Jackie Centre, expert moderator Prof. Debra Waters)

**Prescribing exercise for osteoporosis** (Presented by Prof. Belinda Beck, expert moderator Prof. Robin Daly)

**Bone health in young women with primary or secondary hypogonadism** (Presented by Prof. Bronwyn Stuckey, expert moderator A/Prof. Frances Milat)



**Clinical Training  
subcommittee members Dr.  
Alicia Jones and Dr. Eleanor  
Thong chairing the Clinical  
Cases Session**

The seminar was well attended with 93 attendees joining the live session. There was stimulating discussion after each topic. In 2021, we hope to resume the previous format for the Clinical Cases seminar, to allow trainees more opportunities to present at meetings.



**Prof. Jackie Centre, Prof. Belinda Beck, Prof. Bronwyn Stuckey, Prof. Debra Waters, Prof. Robin Daly and A/Prof. Frances Milat presenting as part of the Clinical Cases Session.**



# Chris & Margie Nordin Young Investigator Awardee - Ruby Oberin

*Ph.D. Candidate*

*Germ Cell Development and Epigenetics,  
Centre for Reproductive Health, Hudson  
Institute of Medical Research*

### What was your research about?

My research involves determining the role of maternal epigenetic inheritance in offspring bone development and disease. Environmental influences such as diet, drugs and chemicals are thought to alter epigenetic programming in oocytes and contribute to maternally inherited disease in the next generation. Exposure of the developing germline to these lifestyle factors can provoke epigenetic alterations in gametes, and thus modify offspring development and phenotype. My work investigates the skeletal phenotype and bone quality in offspring derived from oocytes lacking the functional epigenetic modifier, PRC2. The outcomes of this work will assist in identifying how inherited epigenetic information controls both early life and long-term bone developmental outcomes, which is crucial for understanding how epigenetic mechanisms impact the developmental origins of disease. Hopefully, my research will help unlock the answers to epigenetic questions we don't currently understand, and this will help increase our knowledge about how epigenetic marks are inherited, as well as the impact the environment can play on bone development in the next generation.

### What research skills did you find important?

As I move through my PhD, I am learning how important it is to develop strong communication skills. I believe all scientific research is exciting, interesting and important, however it can be received differently depending on how it is communicated. Being able to communicate my work in a way in which as many people as possible can understand the science and find it interesting is very important to me. In addition to this, I find organisation and planning to be critical in research. I have always been a highly organised person, and I find it so satisfying to plan an experiment and tick off little milestones as I

### What advice do you have for other early career investigators?

I would advise all early career investigators to sign up for things that are out of their comfort zones. Many early career investigators battle with 'imposter syndrome' and the feeling of being underqualified or not 'smart' enough. However, one thing I have discovered is that you need to push through these feelings and give new things a go. When I was signing up for the ANZBMS 2020 conference I was doubtful I would get a talk, and if I did, I was worried that I wasn't going to be qualified enough to discuss my work with the bone research community. However, I pushed through these feelings and I was so glad I did. You will never know what you can achieve unless you try.



**Ruby Oberin with her copy of Prof. David Findlay's book entitled "Good Science, Strong Bones, and The Case for Supporting Discovery".**



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<https://www.anzbms.org.au/grants-and-awards-christopher-and-margie-young-investigator-poster-award.asp>





# Roger Melick Young Investigator Awardee - James Smith

*Ph.D. Candidate*

*Garvan Institute of Medical Research, NSW*

### What was your research about?

My research focuses on leveraging single-cell technologies to better understand the interplay between cells within the bone microenvironment in order to determine how these cells influence skeletal homeostasis. By unravelling this complex intercellular interaction network, we hope to shed new light on the possible causes and origins of various skeletal pathologies and potentially identify novel therapeutic targets for these diseases. To achieve these aims, we have performed single-cell RNA-sequencing of the cells from the endosteal surface and marrow of mice and used this data to generate a cellular landscape of this microenvironment. We have then developed a new bioinformatics pipeline to interrogate this dataset, determining specific cell types that may regulate skeletal cell activity and identifying key genes and pathways that govern these interactions.

### What did winning the Roger Melick award mean to you?

Presenting this work at the ANZBMS ASM was a tremendous opportunity for me, and one that I thoroughly enjoyed. Winning the Roger Melick Young Investigator Award was a huge privilege and gave me great pride, particularly given the outstanding quality of all of the other entries. Hearing feedback and questions from a wide range of experts was a great learning experience and has given me a huge boost in confidence in the early stages of my Ph.D.

### What was your highlight of the ANZBMS ASM, besides winning this award?

The conference as a whole was fantastic and full of fascinating research from such a wide variety of fields, providing a great chance to interact with people from such diverse backgrounds. I particularly enjoyed the talks from the national and international invited speakers.

### What are your goals for the future?

Looking forward, I hope to use this experience and everything I have learned from it to enhance my Ph.D. and develop my understanding of skeletal biology as much as possible, so that I may help to advance the field and lead to better treatments of skeletal diseases.



**James Smith with his copy of Prof. David Findlay's book entitled "Good Science, Strong Bones, and The Case for Supporting Discovery".**



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@JamSmi18



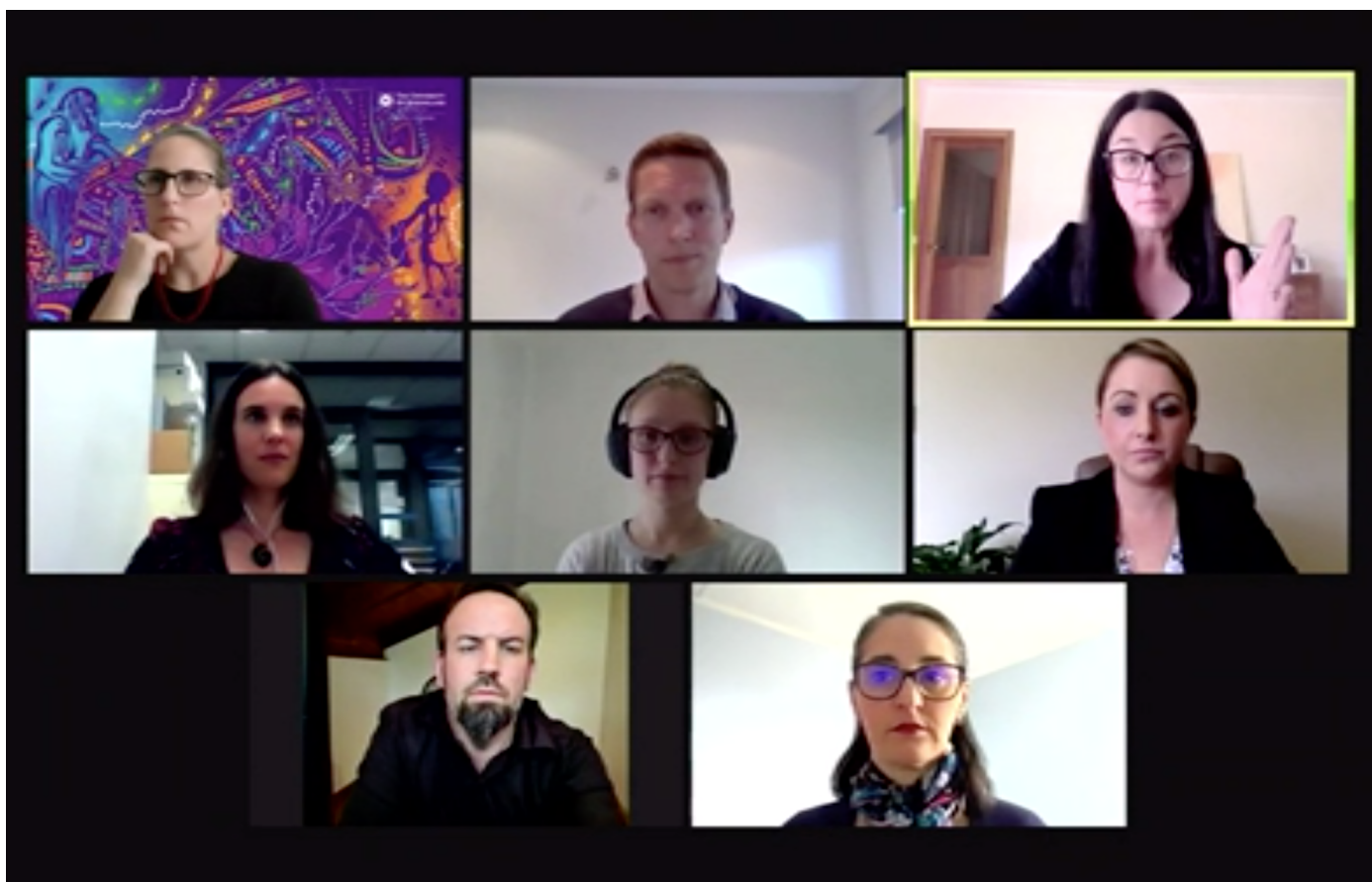
# ANZBMS ASM ECI Events

## *ECIC Career Development Session: Improving your chances of fellowship success*

On Monday 12<sup>th</sup> October, Dr. Sarah Hosking, Dr. Melisa Cantley and Dr. Laura Laslett chaired the first ECIC event of the 2020 ASM focusing on career development and improving your chances of fellowship success. Associate Professor David Scott from Deakin University started the session by giving a myth-busting presentation on the NHMRC Investigator Grant scheme. A/Prof. David Scott mentioned career disruptions, gender, basic vs. clinical research, research impact and leadership. He dispensed strategic advice for prospective fellowship applicants and went through common mistakes to avoid. At the conclusion of his presentation, questions were addressed to a panel of successful Fellowship holders at different levels and those with experience on review panels. The panel composed of Prof. Allison Pettit, Dr. John Kemp, Dr. Brya Matthews, A/Prof. Lana Williams and A/Prof. David Scott. This session was attended live by 105 delegates and was a huge success.



***Invited speaker A/Prof. David Scott - NHMRC EL2, Deakin University (Formerly Monash University)***



*The panel composed of Prof. Allison Pettit (ARC Future Fellowship, University of Queensland), A/Prof. David Scott (NHMRC EL2, Deakin University), A/Prof. Lana Williams (NHMRC EL2, Deakin University), Dr. Brya Matthews (Sir Charles Hercus Fellowship- University of Auckland, NZ) and Dr. John Kemp (NHMRC EL1, University of Queensland).*

*The session was chaired by Dr. Sarah Hosking (Deakin University), Dr. Melissa Cantley (The University of Adelaide) and Dr. Laura Laslett (University of Tasmania).*





## Mid-Career Spotlight

# Kaye Ibbertson Awardee - A/Prof. David Scott

*Bone and Muscle Research Group, School of Clinical Sciences, Monash University*

***This award is based on the productivity of the applicant, in terms of published clinical and/or basic research, in the field of metabolic bone disease. The award will be based on the applicant's best 5 papers, of which the applicant is an author, in the last 8 years.***

### What does winning this award mean to you?

I never had the pleasure of meeting Professor Ibbertson but it's obvious that he was a proud ANZBMS member with a passion for training future leaders in our field. These are characteristics that I like to think we share, so to receive an award in his name is very humbling. I'm also honoured to share this award with the outstanding class of previous winners, many of whom are mentors and collaborators, including Fran Milat, Dawn Aitken, Feitong Wu, Josh Lewis, Tara Brennan-Speranza, Julie Pasco, Roger Zebaze and Tania Winzenberg.

### Could you briefly describe your research?

My research focuses on relationships between sarcopenia, osteoporosis and obesity in older adults. We collaborate on epidemiological studies to explore the effects of sarcopenia, with and without obesity, on outcomes such as bone health, falls and fractures, and also conduct exercise and diet interventions to identify the best strategies for maintaining musculoskeletal health and independence in older adults.

### This award is based on your best 5 papers, so if you had to highlight one of your papers which do you think has had the most impact and why?

I think the paper that has had the greatest impact would be: *Scott D, Seibel M, Cumming R, Naganathan V, Blyth F, Le Couteur DG, Handelsman DJ, Waite LM, Hirani V (2017). Sarcopenic Obesity and its Temporal Associations with Changes in Bone Mineral Density, Incident Falls and Fractures in Older Men: The Concord Health and Ageing in Men Project. Journal of Bone and Mineral Research; 32(3):575-83.* This was my first paper to be published in JBMR which is obviously a nice moment for any ANZBMS member! More importantly, it was the first prospective study to demonstrate that "sarcopenic obesity" (the presence of both sarcopenia and obesity) may increase risk falls and fracture in older men, suggesting that the apparent protective effect of obesity for fracture is potentially dependent on body composition. The paper has been well cited and included in a number of commentaries and meta-analyses related to management of fracture risk in obese populations.

### What was your highlight of the ANZBMS virtual ASM?

I think the quality of the science was as high as any of the face-to-face meetings I've been to which was really impressive, but the greatest highlight for me was how we were all able to come together on the virtual platform and share in a meeting experience that had the usual ANZBMS "feel" in terms of interaction and collegiality.



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# ANZBMS ASM ECIC Events

## Networking Breakfast - Stop, Collaborate & Listen

Wednesday 16th October

Given that the 2020 Annual Scientific Meeting was held on a virtual platform this year, the events team decided to hold a virtual networking event to encourage cross-collaborations across disciplines between early and mid-career researchers. Registrants were asked to prepare a 3 minute "elevator style" pitch and address the following questions: 1) What have you done? *Background/expertise* 2) What are you doing? *Research theme* and 3) What do you want to do? *Collaborations*

There were 39 people who registered, of which approximately 30 attended. Registrants were allocated into one of six groups based on their research theme. Each group was allocated a breakout room and after a brief introduction the groups were separated to present their elevator pitch. The six themes that formed the breakout rooms were: Bone microenvironment, Bone Biology, Bone Imaging, Lifestyle factors, Genetics and rare bone disease, and Population Health.

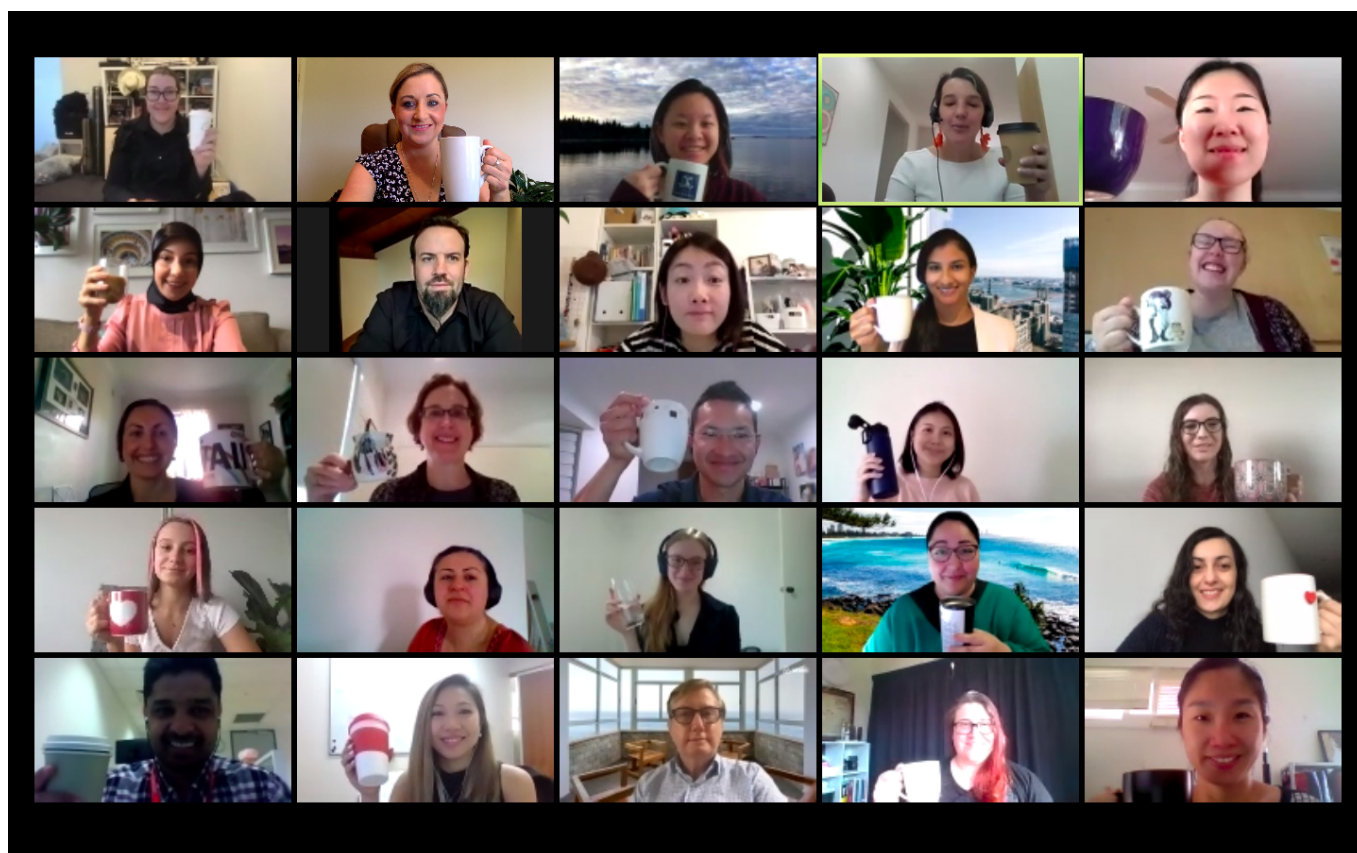
Rooms were chaired by Dr. Melissa Cantley, Dr. Victoria Leitch, Dr. Sabashini Ramchand, Dr. John Kemp, Dr. Natalie Hyde and Dr. Ayse Zengin. Feedback from chairs was positive with everyone agreeing that groups were well matched and productive conversations between registrants took place.

After the discussion and presentations were finished the group reconvened and Dr. Yuki Yoshimoto spoke, as the selected JSBMR delegate for the B.O.N.E exchange program. Yuki presented a five minute pitch and her contact details were provided to the wider group to facilitate collaborations between ANZBMS ECIs and Yuki.

The event was well received and feedback was overwhelmingly positive.



**Dr. Yuki Yoshimoto, B.O.N.E Program awardee, JSBMR**



**Networking Breakfast - Stop, Collaborate & Listen attendees.**





# ECIC Final 2020 Virtual Coffee-Catch up

Our final coffee catch-up was held on Friday 27th November and focused on 'How to establish research independence'. The invited speakers for this session were Dr. Michelle McDonald, A/Prof. Nathan Pavlos, A/Prof. David Scott and A/Prof. Kathy Zhu. There were 29 attendees for this session where there was great discussion and tips shared regarding research independence. Feedback from this session indicated that attendees have found these coffee catch-ups to be a great way to stay connected to the ANZBMS community. Stay tuned for the next next coffee catch-up in 2021 (#ANZBMSCoffeeCatchup). Don't forget to follow us on Twitter and check out some of the great tips shared during this final 2020 #ANZBMSCoffeeCatchup



**Dr Michelle McDonald**

Garvan Institute  
of Medical  
Research



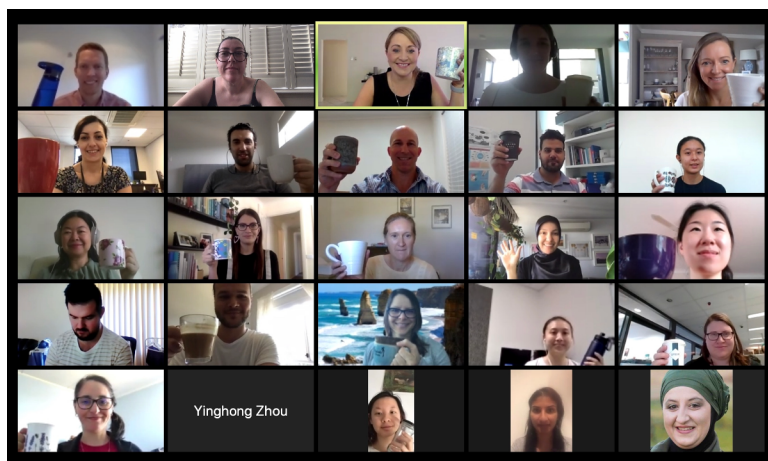
**A/Prof Nathan Pavlos**  
University of Western  
Australia



**A/Prof David Scott**  
Deakin  
University



**A/Prof Kathy Zhu**  
Sir Charles Gairdner  
Hospital



***Thank you to all our featured speakers for the 2020 Virtual Coffee Catch-up series: Prof. Natalie Sims, Prof. Robin Daly, Dr. Agnes Arthur, Prof. Sharon Brennan-Olsen, A/Prof. Paul Baldock, A/Prof. Joshua Lewis, Dr. Michelle McDonald, A/Prof. Nathan Pavlos, A/Prof. David Scott and A/Prof. Kathy Zhu for sharing their wisdom with us!***

Coffee Catch-up #4 (29 attendees)

***'How to Establish Research Independence'***



# ANZBMS ASM Awards

Congratulations to the following members on their amazing achievements!

## **ANZBMS-AMGEN Outstanding Abstract Award**



**Dr. Sandra Iuliano**

University of Melbourne, Victoria

***"Dairy supplementation reduced fractures and falls in institutionalised older adults: a cluster randomised controlled trial."***



**Professor Peter Ebeling**

Monash University, Victoria

***"Subject characteristics and changes in bone mineral density after transitioning from denosumab to alendronate in the Denosumab Adherence Preference Satisfaction (DAPS) Study."***



**Dr. Audrey Chan**

University of Melbourne, Victoria

***"Bone geometry is altered by follistatin-induced muscle growth in adult male mice."***



**Dr. Victoria Leitch**

Royal Melbourne Institute of Technology, Victoria

***"An essential physiological role for MCT8 in bone in male mice."***



**Dr. Tuyoshi Isojima**

St. Vincent's Institute of Medical Research, Victoria

***"Interaction between osteocyte SOCS3-dependent signalling and the bone marrow microenvironment maintains cortical bone integrity."***





# ANZBMS ASM Awards

Congratulations to the following members on their amazing achievements!



## ***AMGEN-OA ANZBMS Research Grant & Kaye Ibbertson Award***

**Associate Professor David Scott**

Deakin University, Victoria



## ***Highest Ranked Student Abstract Award***

**Ms. Lena Batoon**

Supervisor: Professor Alison Pettit

Mater Research Institute, The University of Queensland



## ***Christopher & Margie Nordin YI Award***

**Ms. Ruby Oberin**

Supervisor: Associate Professor Patrick Western

Hudson Institute of Medical Research, Victoria



## ***Roger Melick Young Investigator Award***

**Mr. James Smith**

Supervisor: Professor Peter Croucher

Garvan Institute of Medical Research, New South Wales



## ***Sol Posen Award***

**Dr. Junjie Gao**

Perron Institute for Neurological and Translational Science,  
Western Australia





***We wish you a healthy and happy holiday, and a chance to reflect, recharge, and reconnect with friends and family (whether in person or virtually).***

***Best wishes from all of us for a wonderful festive season and a spectacular 2021!!!***