

Franklin Women

June 2017 Newsletter

June has been a crazy month for Franklin Women. Last week we launched the inaugural year of the Franklin Women cross-organisational [Mentoring Program](#), which was pretty spectacular. But I have gone on about that enough previously. So, instead, I would like to go on a bit about another big FW event in June – our [cocktail event](#) at the [Museum of Applied Arts and Science](#) on debunking innovation in health research. One of our quickest events ever to reach max capacity, it shows there is an appetite among researchers to think outside the box and do big things with our work to make sure it has impact.

I was recently reminded of the importance of encouraging and supporting researchers to push boundaries when I was judging the first round of applications for the [Australian Technologies Competition](#). The MedTech category had such an amazing range of technologies – like recently named [semi-finalists](#) MyGolgi, Livac, Iris Biomedical and BCAL Diagnostics – which all started as research projects and are now on the road to commercialisation. Unfortunately, women are [under-represented among start-up founders](#), so I am hoping that our event may have helped plant a seed that in the years to come grows into a healthtech start-up that changes the world...

I hope you enjoy this month's newsletter. Our contributors (you HAVE to read Justyna's career profile) and their work are simply fascinating and inspiring. Happy reading!

Melina and the FW Team



What happened this month

- Big congratulations to all the talented health and medical researchers acknowledged in the [Queen's Birthday 2017 Honours list](#).
- Our founder Melina joined the panel at the Heart Foundation Women & Heart Disease Workshop to discuss how gender bias in research can impact the diagnosis, treatments and outcomes of disease in women (see Julie Anne's article below!)
- The long awaited [STEM skills report](#) was released, which aims to improve student participation in STEM through school and industry collaboration.
- *Nature* released a supplement edition on [careers in science in Melbourne](#).
- Johns Hopkins Bloomberg School of Public Health curated this list of [100 objects that shaped public health](#) (it may not be new, but it's very cool and worth a share!)



Career Profile

Meet ***Justyna Miskiewicz***, a Lecturer in Biological Anthropology at the ***Australian National University (ANU)***, researching and teaching in skeletal biology with bioarchaeological, forensic and biomedical applications. Outside of the lab, she is a self-confessed thrill seeker who loves to skydive and bungee jump!



What is your training in the health or medical science field? I am one of those scientists who chose to specialise in a technical skill that can be used to answer a variety of inter-disciplinary research questions. I wanted to undertake a PhD, because I love the idea of being an expert in ‘something’, and so I became a hard tissue histologist. Having said that, I struggle to define a specific (sub)field my training relates to the closest! Broadly speaking, I’m interested in skeletal biology, which I fell in love with whilst training in biological anthropology. I’ve always been fascinated by human biology and anatomical variation, but somehow could not satisfy my scientific curiosity when taking courses in pure biology or medicine.

Biological anthropology broadened my horizons and made me see, really clearly, that as humans we are unique animals whose cultural and environmental context of existence influences our health, disease and biology. It is thanks to biological anthropology that I got to handle authentic, archaeological, human skeletal remains for the first time back in 2008. The plethora of information I learnt to reconstruct from preserved skeletal tissue really touched me. However, given that we are animals, I knew I needed to study human tissue in a comparative framework of other species. So I did a PhD in Biological Anthropology (University of Kent, UK), as part of which I trained in producing thin sections of bones and teeth, using both ancient and recent human and non-human animal specimens, and the rest is history... Some of my current research is in bioarchaeology, as part of which I reconstruct palaeometabolism from bone cells preserved in ancient samples. My work also has forensic applications, investigating how we can reconstruct a deceased individual’s age using microstructure of their teeth or fragmented bone remains. I also regularly publish in clinical/biomedical journals, reporting variation in bone renewal/growth rates in ancient and modern human and non-human skeletal animal samples, which has implications for our current understanding of osteoporosis. Hard tissue histology, as a technique, unites all these endeavours.

Tell us about your role and how you got to be a lecturer at the ANU? I currently work as a Lecturer in Biological Anthropology. I took up my post in January 2016 (time really does fly when you’re having fun!), having come straight from a research group in medicine

at Imperial College London. I love research, and I love teaching, and so a lectureship really suits my personality and work ethic. I find teaching rewarding (especially when I receive hand written 'thank you' letters from students, who inspire me and expose me to a broad range of thinking styles!). I get to teach and research in skeletal biology with bioarchaeological, forensic and biomedical applications. I feel very lucky to have this job, because I can deliver research-led teaching (which is also what attracted me to ANU – a research intensive university), meaning that I genuinely enjoy running lectures and labs, and can keep up-to-date on literature that pertains to my research questions. Most importantly, I get to continue working in hard tissue histology and have my own research group. Since my move to Australia, I have been working on bringing in equipment money with the aim of setting up a lab. I launched our Ancient Skeletal Histology (ASH) facility this year, which is the first of its kind in the whole of Australasia (also the main reason why I applied for my lectureship!). It is ongoing hard work, but I receive great mentorship from senior colleagues in my School, and, ultimately, my research goals drive me.

What is one of your favourite projects you are currently working on? One of my ongoing research veins is investigating the effect of socio-economic stratification on skeletal health in human societies. As a biological anthropologist, my biggest contribution in this area so far has been focused on studying human skeletons retrieved from European medieval cemeteries, because they often come with documented (e.g. historical) information on distinct social status groups (e.g. royalty and peasants). I also currently reconstruct bone palaeometabolism for ancient human skeletal samples from the Philippines, Indonesia, Tonga and the Solomon Islands – I never EVER imagined I'd get to do this.

What are some of the major 'outputs' from your work? I would probably say that, as above, my work on the effect of social status on skeletal health has been of major importance. My research in this area has indicated that human skeletons from lower socio-economic backgrounds experience more frequent events of physiological stress disruption in childhood, develop adult bone of lower density, and have shortened longevity when compared to individuals from higher status backgrounds. Two key outputs I am mostly proud of in this regard are my [2016 paper in the Anatomical Record](#), and this year's special symposium (organised by my colleagues at the University of Melbourne) at the World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (Italy) which was devoted entirely to the concept that bone health may be reflecting social factors.

How do you think your work contributes to the field and/or the overall health of the community? Most of my skeletal biology work centres on looking at bone quality in ancient human populations with implications for osteoporosis and osteopenia research in modern populations. My findings have been recently compared and discussed in relation to osteoporosis prevalence in Australia, and globally. For example, the Italian symposium mentioned above investigated the relationship between skeletal health and social factors. We presented medieval, contemporary and epigenetic evidence indicating that an increase in risk of developing osteoporosis seems to be underlain by a mosaic of social and biological determinants. Our combined data from ancient and modern humans helped identify this pattern spanning the past 800 or so years. I honestly believe that we ought to study humans from the past to understand humans in the present, and so it is a real honour that my colleagues in medicine recognise the importance of incorporating biological

anthropology work into their explanations of human skeletal health.

Who do you collaborate with and how did those work relationships come about? I

have several ongoing collaborations across the globe, and primarily work with colleagues in the Skeletal Biology Research Centre at the University of Kent in the UK (where I did my PhD). This includes my PhD supervisor, who has been a great support throughout my academic career ever since. It is incredible to work with him now as a colleague rather than a student (though, who are we kidding – I continuously learn from these giants!). My most recent collaboration is with colleagues at the University of Melbourne (in the Dental and Medical Schools), some of which (believe it or not) I met through Twitter! As for the others, a simple meeting of minds at a Gold Coast conference developed into an ongoing collaboration...

Do you have any side interests or passions that you are looking to develop? I would love to see my findings make their way ‘officially’ into policy/practice. I am also keen to set up a science imaging group in Canberra where amateurs and professionals who are passionate about their disciplines can showcase images where art and science meet... watch this space!

What food have you eaten too much of in your life? Sushi! Huge weakness of mine since I was a teenager! Also, for some reason, wherever I work, there always seems to be a great sushi place near my office/lab...

Making the invisible visible

‘Making the invisible visible’ is the Heart Foundation’s annual June [Women and Heart Disease campaign](#). Below [Julie Anne Mitchell](#), National Heart Foundation Spokesperson on Women’s Heart Health, writes on her reflections following the inaugural cross-disciplinary Women and Heart Disease Forum in Sydney on 14 June.



It’s less than 24 hours since our Forum finished, yet I am still riding the adrenalin high. Warning! A crash is imminent.

For over 10 years the Heart Foundation has championed a program to raise women’s awareness of heart disease, but it’s been a hard slog, when we know that most women fear breast cancer and heart disease is often categorised as a male only concern. Yesterday, however, it felt different. It felt like the cavalry had finally arrived to help us amplify this issue.

Heart disease in women is complex. Women are physically and hormonally different to men in various ways and this creates a unique set of challenges which in the past have largely been ignored. This has to a large extent rendered women virtually invisible when it comes to heart disease and we now need to right this wrong.

A large part of the problem rests with female under-representation in clinical trials used to

determine the best way to diagnose and treat heart conditions. Historically much of the evidence has been based on data from men and then extrapolated to women. This has obscured differences and has characterised the male heart disease pattern of crushing chest pain and large coronary artery blockages as the default image of what heart disease looks and feels like.

Of course, there are obvious reasons why female participation in clinical trials has been traditionally lower, related to age, pregnancy, child bearing, the presence of other conditions or simply just not having the time to participate. However, this disparity is borne out in women by the fact that less than 4 in 10 women see heart disease as personally relevant, more women are likely to ring a friend or family member than call Triple Zero if they think they are having a heart attack, and health professionals can be slower in diagnosing heart problems in women. And even after hospital discharge, women are less likely to attend cardiac rehab, take medication as prescribed or make the lifestyle changes needed as they prioritise the needs of their family and others over themselves.

There is a clear path for action. Firstly, we need to achieve more female representation in clinical trials to understand the subtle but significant gender differences that exist in heart disease. Secondly, we need to draw on other disciplines of medicine, to improve our gaps in knowledge, particularly in the fields of obstetrics, oncology, endocrinology, midwifery, general practice and research. Thirdly, we need more dedicated investment in gender-specific research. We have seen the benefits that this focus has had on survival rates for breast cancer and we are confident that similar insights could be applied to benefit heart health outcomes for women. Fourthly, we need to recognise that gender disparity in heart disease is not only a health concern but also a social concern with rates higher among Aboriginal, rural and lower SES women.

This brings me to an explanation of why I am feeling so euphoric. Yesterday for the first time we brought together 170 of the country's leaders in cardiology, obstetrics, emergency medicine, oncology and public health to address gender disparities in heart disease from a multi-disciplinary perspective. Case studies were presented and debated from a range of viewpoints. The global and local nature of heart disease in women was described. Attention was paid to the vascular complications of gestational diabetes and hypertension in pregnancy and how this can be a clarion call for heart disease risk later in life. Focus was paid to the cardiotoxic nature of some breast cancer treatments and how this can increase heart failure risk. Health system improvements were debated and workforce issues were discussed. We also heard of community initiatives to raise awareness of heart disease amongst rural women, Aboriginal women, female refugees and migrant women who fight social, physical and cultural isolation in many aspects of their lives, which in turn impacts on their heart health.

The day was stimulating, challenging and ultimately energising, where connections were made, ideas were shared and an enthusiasm for working more closely together was freely expressed. We may only be a few steps ahead of where we were 2 days ago, but in holding this inaugural event it feels like something has fundamentally shifted – that the role to make heart disease in women a visible issue has just got marginally easier.

Act for Peace Ration Challenge

In our line of work it's vital for researchers to gain a holistic understanding of the many influences on people's health, choices and barriers. So this month nutritionist [Sinead Boylan](#) talks about her experience of the [Ration Challenge](#), as she sought to gain a small insight into some of the struggles people face with food access.



As a public health nutritionist, I need to understand what challenges and opportunities exist throughout our food system. This system faces multiple threats from marketing of junk foods, lack of resources, poor planning – the list is endless. I, like you, am exposed to these threats every day, and even though you might not realise it, they

have a direct impact on how and what we eat. There are of course bigger challenges, so called 'wicked challenges' at play. These challenges are much scarier; they are sometimes hidden and unpredictable and cause unsurmountable trauma and malnutrition.

Environmental, political, economic and social instability are but a few of the overarching major threats facing today's food system. This instability is becoming more and more frequent and intense. Just one ongoing example is the uprooting of millions of Syrians from their beautiful homeland, to what I can only imagine being hell on earth. For these individuals, eating was a ritual, a social occasion, where family and friends shared a bountiful and beautiful mezza. Imagine going from that, to having access to only these daily meagre rations: 420g of rice, 170g lentils, 85g dried chickpeas, 125g tinned sardines, 400g kidney beans and 300ml of vegetable oil. That's it.

I could not comprehend the impact this shift in diet could have on an individual's physical and mental well-being. So to get some insight, I decided to undertake the [Act for Peace Ration Challenge](#). Act for Peace aims to empower people to work together to achieve safety, justice and dignity in communities threatened by conflict and disaster. The aim of the Ration Challenge was to eat the same rations as a Syrian refugee in Jordan during Refugee Week (June 18–24 2017).

I gained a minute insight into what it physically and emotionally feels like to live on such small rations. These feelings can only be exacerbated by the inhumane and hopeless surroundings which refugees often call their home. I had the freedom to go to work and return to my heated home, a minute walk from one of the world's most pristine beaches. I had access to an unlimited supply of safe, fresh water, good storage, cooking equipment, and supportive friends and family. I had access to distractions such as reading, watching documentaries, social media, yin yoga, steam rooms and a massage. I used to take access to fresh, affordable food 24/7 for granted. Not anymore.

Thanks to generous donations, I have raised almost \$1180 – just \$1000 can provide food rations for three refugees for an entire year. It can also give access to a community medical day, including diagnosis and treatment, for four at-risk refugee families. It's not too late to

[donate](#), or even better consider signing yourself up for Ration Challenge 2018!

[Sinead](#) is a public health nutritionist and Executive Officer of the newly established Human Health and Social Impacts Node at the Charles Perkins Centre, University of Sydney. She is also a water baby and 100% a cat person.

We are loving right now...

Winter skin care!! The cold weather is definitely upon us, and our skin is starting to feel it! To combat that [dry skin we all notice in winter](#), here are some of our favourite skincare tips and products:

- Start off with these [11 essential skin care tips for winter](#).
 - As a lifelong eczema sufferer this [face \(hero\) oil](#) has changed my life, plus it smells amazing – honestly can't say enough good things about this wonder product!
 - Here are some suggestions on how to switch up your [skincare routine for winter](#).
 - Banish the [microbead](#) from your bathroom by using a friendly [scrub](#), or maybe try washing your face with a [cloth](#) instead?
 - Don't forget those lips! Here are some [lip balms](#) that are perfect for winter.
 - We just learnt that it's not wise to [hold your face under a hot shower](#), so try splashing water on your face instead.
 - Or if your skin just isn't working for you today, refer to some [emergency kittens](#).
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We want to include your contributions in our newsletter. If you are doing something, or know about something, that you think other women in our field would be interested in, drop us a [line](#). We are all about sharing, promoting and collaborating between women in our field. Don't be shy, it might bring about a great opportunity! Want to receive our newsletters directly to your in-box? [Subscribe here](#).