# newsletter

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## President's Report

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Australian

Society for

Medical

Research

It is a great honour and privilege to once again have the opportunity to lead the ASMR, and represent the health and medical research sector as the 2018 ASMR President. Established in 1961, the ASMR is the oldest peak body representing the entirety of health and medical research across Australia. Since its humble beginnings at the Royal Prince Alfred hospital in Sydney, the ASMR has evolved to become a political force in health and medical research advocacy. The ASMR was the first organisation in Australia to commission independent data from Access Economics in 2003, which, for the first time, quantified in dollar terms the health and economic value of investing in health and medical research.

Since this first report, the ASMR has been a trailblazer, leading health and medical research advocacy and commissioning a further six reports from Deloitte Access Economics. This arsenal of evidence has been quoted by scientists, media outlets and politicians around the country when arguing for increased and sustainable investment to the sector. Additionally, the ASMR has taken the lead in surveying the health and medical research workforce, quantifying not only the job insecurity experienced by researchers around the country, but also the altruism of the scientific community, who are simply seeking a stable and well supported research ecosystem in which to deliver the best gains in knowledge and health.

As ASMR President, I have already held meetings this year with Finance, the Treasury, and several government ministers and their advisors from both major parties, delivering key messages on the health and medical research sector, and the need for sustainable and balanced investment across the sector.

The health and medical research sector is currently experiencing an unprecedented level of instability and uncertainty. Over the last five or so years, several issues have dominated the sector, first and foremost amongst them, the MRFF. First announced in 2014, the MRFF has been a welcome addition to health and medical research funding in Australia. Over the last 6 months, the Government has made several positive announcements regarding the first MRFF disbursements, allocating several millions of dollars to initiatives that include rare cancers, brain cancer, indigenous and



Dr Roger Yazbek

rural health and anti-microbial resistance. Whilst the government is to be commended on its commitment to supporting the health and medical research sector, there remains a significant level of concern that there is no clearly defined, open and transparent expert review related to disbursements of the funds. The best science and subsequently, the best health outcomes, are underpinned by independent, transparent expert review. The ASMR has been and will continue advocating for clear guidelines of competitive review for the MRFF, with a proven model already defined within the NHMRC.

Since 2011, investment into the NHMRC Medical Research Endowment Account (MREA) has declined in real terms, placing significant strain on the health and medical research workforce, and the health outcomes they are poised to deliver. The NHMRC is an integral part of the health and medical research ecosystem, supporting a large part of the fundamental science that will deliver translational health outcomes. The ASMRs pre-budget submission outlines a request to Government to immediately boost investment to the NHMRC, establishing a baseline for continuous and sustainable growth within the sector.

Additionally, the health and medical research sector has had to contend with a restructure to the NHMRC funding schemes, a revision of NHMRC expert review processes and an impending overhaul of the online grants management system, replacing the existing NHMRC RGMS. The ASMR has been representing its membership throughout all of these consultations,

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### Mentoring Program

## Looking for a career boost?

## Between 5 and 12 years post-PhD?

ASMR's online mentoring program has 29 of Australia's leading researchers ready to help you with one-toone professional help and advice.

Take advantage of this free program now!

http://www.asmrfiles. org.au/mentorprogram/ and will continue to report back key updates as they become available.

ASMR Medical Research Week<sup>®</sup> and the ASMR Medallist Tour are flagship events of the society, representing an opportunity for the public to acknowledge the work of health and medical researchers. More importantly, it is an opportunity for researchers to engage with members of the non-scientific community (including politicians), informing and educating about how their research will change health care. The theme of my presidency this year is to 'excite and inspire' and it is through ASMR events throughout the year, that I hope to achieve this aim.

I am delighted to announce the 2018 ASMR Medallist, Prof Hope Jahren from the University of Oslo in Norway. Prof Jahren is a geobiologist whose research is crossing interdisciplinary boundaries, using her knowledge and expertise in stable isotope chemistry to develop new tools to better understand dietary sugar intake and sugar metabolism. In 2016 Prof Jahren was named by Time Magazine as one of the world's "100 Most Influential People". Prof Jahren is a passionate advocate for science, and in 2016 published the critically acclaimed 'Lab Girl' that detailed her journey through a career in science. Prof Jahren will speak at gala dinners around Australia during ASMR MRW<sup>®</sup>, and I look forward to seeing you all there.

The beauty of health and medical research is its diversity across all facets, blending together in a giant melting pot to drive better health solutions for society. It is this cultural, gender and disciplinary diversity that fosters creativity and innovation. The health challenges of tomorrow will only be addressed by embracing diversity and inclusiveness, fostering a constant flow between knowledge and practical action.

The 2018 NSC, entitled "Inspired Creativity — When Art Meets Science", is an opportunity to celebrate the diversity of science. The meeting will explore the nexus of art and science and the way both scientists and artists view the world to improve the pursuit of scientific discovery and communication. From the experience of artists, we hope to enrich scientific thinking with new ways of seeing, understanding, and creating. We believe this exchange of perspectives will help to innovate research and improve social engagement.

I am very excited to announce the 2018 Edwards Orator as Prof. Paul Torzillo, Head of Respiratory Medicine at the Royal Prince Alfred Hospital and co-director of Healthabitat, a housing for health initiative that has delivered better health outcomes for people around the world. I am also thrilled to announce the 2018 Firkin Orator as Ms Honor Harger, curator and Executive Director for Art-Science Museum at Marina Bay Sands.

2018 is building up to be exciting year and I look forward to working with a dynamic board of ASMR directors, and the ASMR State committees in representing the ASMR members and the Australian health and medical research sector.

**Dr Roger Yazbek** 

## Why Science Thrives with Independent Expert Review

Since the formal announcement of the MRFF in 2014, there has been active debate in the scientific community about the need for formal competitive review processes for MRFF disbursements. In 2015, ASMR past-President, A/Prof Phoebe Phillips told the Senate Community Affairs Legislation Committee's inquiry into the MRFF:

"We do a lot of work with the community and I think that taxpayers really want to know that their money is going towards funding the best possible high-quality research that delivers health outcomes. All the evidence based on peer review in this country — and we have done a lot of this work in this space with independent commissioned reports — suggests that NHMRC peer review has actually been very successful in delivering better outcomes.

Again, I think what we do not want to happen is the loudest speaker being able to approach the Minister for Health and say, 'I have this problem, let's get some money here.' It needs to be peer reviewed so that rigorous questions are asked to actually determine whether it is a feasible study, whether it is a clinical trial or whether it is basic research leading to a discovery trial. As pointed out, how is an individual, group or a team going to measure the outcomes and have an accurate time line which can be judged? I think that is the expectation of taxpayers."

Independent expert review (or "peer review") is one of the cornerstones of scientific endeavour, subjecting research to constructive critique in order to consistently improve, avoid duplication and stimulate rigorous debate. Peer review serves two main purposes: (i) to act as a form of quality control, in particular to flag mistakes and misguided, flawed and even false reports (primarily manuscript review), and (ii) to judge the quality and merit of one proposal against others (primarily grant review).

The use of independent expert review by funding agencies to judge the scientific quality and merit of one proposal against others has previously come under attack. One of the main criticisms put forward is the considerable investment of time and resources that

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go into writing grant applications, most of which will not attract funding. Similarly, from the perspective of the funding agencies, a large demand on resources is making grant review panels financially and managerially untenable.

However, what are the alternatives? Those most commonly proposed are based around a 'block funding' model, where medical research institutes, universities and hospitals are given an allocation of research funding and allowed to decide the best way to use it. This model has a number of inherent weaknesses. Firstly, there is a lack of transparency and accountability — who decides which projects are supported and on what grounds? What safeguards are put in place to ensure that these decisions are not subject to the whims of organisational powerbrokers? Secondly, how are the size of allocations to different institutions decided and what safeguards are put in place to ensure that this process is equitable? After all, great ideas are born from both large and small institutions. Finally, assuming that sufficient safeguards are put in place, is this model really the time-saver it purports to be? One would imagine that, in an environment of very limited funding, some internal competitive process would still be needed to assess the merit of research proposals from different groups; the only viable alternative to this would be for organisational powerbrokers to dictate research directions, limiting innovation.

Independent expert review is not an infallible practice it relies on human judgement, meaning its effectiveness depends to a large extent on the integrity and competence of the people involved. The scientific community is a collective of individuals, each with their own expertise, theories and biases; while most referees will make a conscious effort to remain objective, there will naturally always be some level of subjectivity in the review system — the goal is to minimise subjectivity and its impact. This subjectivity may arise from deep-held beliefs based on some scientific dogma of the time. But review panels are also an intensely social environment that give rise to the opportunity for debate — provided this debate remains open, transparent and free from intimidation, dogma can be challenged and new ideas supported.

#### **Room for Improvement**

Ensure that people involved in the review process are adequately trained for whatever role they might play. The provision of training for reviewers (and authors) of proposals varies greatly across the spectrum of funding bodies and research institutions; in many cases training is off-the-cuff or not provided at all. Encouraging these bodies to work together to develop standards, applicable across the health and science sector, will help ensure researchers have a better understanding of the independent expert review process and are well equipped for any role within this process.

Strengthen the policy and standards of the grant review system. Strong policies and standards at all points of the review pipeline are paramount to creating an equitable and transparent expert review system.

Improve the efficiency of the review processes. Improved efficiency is important for all involved: the applicants, reviewers and funding agencies. The NHMRC is acutely aware of the need for change, as evidenced by their extensive consultation in developing a revised peer review pipeline soon to be announced.

#### Conclusions

Independent expert review, in one form or another, has always been regarded as crucial to the reputation and reliability of scientific research. The expert review process is not designed to remain static; it should be sufficiently flexible to evolve as innovative approaches, new perspectives and technology arise and societal and governmental values and priorities change. As an organised mechanism for evaluating the credibility and merit of scientific work, independent expert review must be viewed as fundamental to the institution of science and the quest for truth and integrity.

> Dr Sarah Meachem and Dr Daniel Johnstone

### ASMR Medical Research Week® 2018 31 May – 8 June #MRW2018 — TO EXCITE AND INSPIRE

#### #MRW2018 — TO EXCITE AND INSPIRE

Celebrating health and medical research around Australia

Major highlight of the Australian health and medical research calendar, bringing the message of the benefits of health and medical research to the Australian public.

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Featuring the ASMR medalist tour, public outreach

events (including cinema events, meet a scientist dinners and community lectures), career events for high school and tertiary students, schools visits, an on-line schools quiz, scientific meetings and professional development programmes for medical researchers held across the country.

Please see our website for all the activities in your state: https://asmr.org.au/asmr-mrw/national-program/



## 2018 ASMR Medallist Announcement



"The beautiful part of science to me is how we absorb it naturally" - Hope Jahren The ASMR is excited to announce acclaimed scientist and award winning author, **Professor Hope Jahren**, as the **2018 ASMR Medallist**.

Professor Jahren is a geobiologist whose research is crossing interdisciplinary boundaries, using her knowledge and expertise in stable isotope chemistry to develop new tools to better understand dietary sugar intake and sugar metabolism.

Completing her PhD at the University of California, Berkley, Professor Jahren became a Wilson Professor at the University of Oslo's Centre for Earth Evolution and Dynamics in 2016. Her laboratory investigates how stable isotopes of carbon, nitrogen, hydrogen and oxygen can provide information about metabolism and environment, both in the human environment, and through geologic time.

Professor Jahren has received three Fulbright Awards in 1992, 2003 and 2010 to undertake research across Norway, Denmark and the Arctic. In 2001, Jahren won the Donath Medal, awarded by the Geological Society of America and in 2005, she was awarded the Macelwane Medal, becoming the first woman and fourth scientist overall to win both the Macelwane Medal and the Donath Medal. Professor Jahren was recognised by *Popular Science* magazine in 2006 as one of its "Brilliant 10" scientists and in 2016, Time Magazine named her as one of the world's "100 Most Influential People".

Professor Jahren is a passionate advocate for science, and in 2016 published the critically acclaimed 'Lab Girl' that detailed her journey through a career in science. Professor Jahren's story of the triumphs and challenges of a career in science will resonate with many.

## **National Stocktake** of Genetic and Genomic Testing

A National Stocktake of all medical genetic and genomic testing of patient samples during the 2016/17 financial year has been commissioned by the Australian Government Department of Health on behalf of the Australian Health Ministers' Advisory Council.

The purpose is to provide information about local genetic/genomic testing services currently available to Australian patients for disease diagnosis, monitoring, treatment, disease prevention, prediction or predisposition assessment.

A final report of key findings, including comparisons with the earlier survey results, will be provided to the Commonwealth Department of Health in June 2018. A Survey Tool based on the 2011 Survey Instrument has been developed and is about to be piloted by a small group of service providers representing all sectors. The Stocktaking Survey will be open to all Laboratories for an eight week period commencing in mid-February and ending in mid-April.

Enquires about the Stocktake can be directed to

Ms Vanessa White (vanessaw@rcpa.edu.au),

**Professor David Ravine** (david.ravine@uwa.edu.au)

and **Dr Sarah Nickerson** (sarah.nickerson@health.wa.gov.au).

### 5 May 2018



## What does Medical Research mean to an Environmental Scientist?

Medical research is truly more of a calling than an occupation. It is a field of human inquiry perennially tasked with understanding the maladies that cause human suffering and disability, and as such, it will never run out of subjects. The work of helping people to make healthy choices can be daunting: intervention programs may succeed in the short-term, yet ultimately fail due to the larger environment. Diet-related illnesses can be especially challenging to address as the everyday features of our society — processed foods, large portion sizes, television and automobiles — can exacerbate the issues involved. It's enough to make one as discouraged and pessimistic as, say, an environmentalist upon learning that carbon dioxide levels have increased by twenty-five percent just in the last fifty years, resulting in a Greenhouse atmosphere the likes of which the Earth has not experienced for at least eight hundred thousand years.

Thus the environmental scientist and the medical researcher share the experience of calling for change against nearly insurmountable odds, armed with everything from shocking statistics to common sense. But the similarities don't end there; pedagogically speaking, asking the research question "What happens when an excess of sugar is eaten?" is not unlike asking "What happens when an excess of carbon dioxide is added to the atmosphere?" Research of the last ten years has brought unexpected answers to both questions; we've seen that seemingly unrelated processes are actually linked. For these reasons, I've found that an interdisciplinary systems-approach can be usefully applied to medical research. Part of this is applying the tools (such as stable isotope biogeochemistry — that's my field) that were developed to follow Earth's elements through complex cycles and feedbacks, to questions of processes, and their misregulation, within the human body.

My group has begun to pursue the idea that the unusually heavy carbon stable isotope signature of corn might propagate into human tissues in proportion to consumption, allowing us to follow this controversial compound High Fructose Corn Syrup (HFCS) through metabolic sugar-regulation, and misregulation, processes. There's a wealth of work to be done: what's the carbon isotope variability in foods and food additives? Across human tissues? Across humans of similar diet? Can a short-term administration of HFCS be seen in human



tissues? Can we expect to see a change due to longterm administration of HFCS? One thing environmental scientists are good at, is dealing with the samples that we have instead of the ones we want. Our group has focused on learning what the carbon isotope composition of blood can tell us about an individual's integrated diet, not because blood is necessarily the best long-term indicator of diet, but because it is accessible and renewable, and is standardly drawn and often archived. We need new collaborations with research doctors, epidemiologists and nutrition experts in order to test our ideas through clinical studies involving human subjects, but more importantly, we need to be introduced to medical researchers who are open to new ways of thinking.

Developing solutions to many of today's societal challenges, particularly those in the realm of public health, requires the collaboration of scientists from different disciplines who may not have worked together historically. Interdisciplinary research teams have the potential to achieve scientific innovations and advances which are not possible to achieve working as a lone investigator in a single discipline. Although the challenges facing interdisciplinary research teams can be significant, the potential rewards in the form of new solutions to long-standing challenges is not only worth the effort, it's part and parcel of the calling that we have answered with our careers.

**Professor Hope Jahren** 



### Vale Professor Stephen Hawking 8 January 1942 – 14 March 2018

The ASMR acknowledges the passing of one of the greatest theoretical physicists of the modern era. Professor Hawking inspired millions around the world to be excited by science. His legacy will live on forever.

For up-to-date news and information about what is happening with ASMR —

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## **An ASMR** Reflection



Professor T. John Martin FRS

#### ASMR Awards opening soon ASMR Research Awards

Awards supporting a postgraduate student member of the ASMR nearing completion, or a recently graduated (3 years maximum), to undertake a period of research in a laboratory outside of Australia (\$5,000) or in a distal laboratory (\$2,000) within Australia.

#### ASMR Peter Doherty Leading Light Award

Award to recognise the outstanding work of mid-career researchers (5 to 12 year postdoctoral) in Australia. Assessment is based on the impact of a single outstanding publication within the past 5 years.

For more information see https://asmr.org.au/ research-awards/

In the early years of the Society the major aim was to make the Annual Scientific Meeting one of high scientific quality. The standards and pace were to be set and adjudicated by young people, free from the pressures that might come from constantly presenting among senior colleagues. Nevertheless it was pleasing to see, and of quite some value, that a recurring group of more senior people would come regularly to the annual meetings.

We wanted people to present their best original work, whether basic or clinical, and to have it discussed in a broadly based forum. We hoped that by doing this the activities of the Society would encourage everyone to learn from the mix of disciplines. The philosophy was that this approach should be good especially for young people, and personally I remember very well the benefits that came from this ethos that developed around the scientific meetings of the Society. I have no doubt that in those early years, certainly in the early 1970s, THE scientific meeting above all others to go to in medical research in Australia was the ASMR Annual Scientific Meeting.

The Society was aimed at being broadly based in medical science, where anyone involved in research in any specialty could feel comfortable in presenting, and have their work subject to constructive criticism and discussion. For these reasons we were always actively recruiting new members to the society. Although there were a few special societies beginning in the 1960s and more in the early 1970s, they were by no means as competitive with the ASMR as the special societies are today. Only the immunologists were well enough organized already to limit immunology at the ASMR meetings, which always seemed to be strong in the early years in many aspects of cell biology, in basic and clinical haematology and endocrinology.

The spirit of the Society in the early years owed much to a number of individuals who did a great deal to spread the news of the Society and to encourage people to be involved. It is an interesting commentary on the peculiarly Australian custom of rivalry between States of the Commonwealth, that in the six or seven years after the establishment of the ASMR, the organisation seemed to be looked upon in Victoria with some level of suspicion, so much so that uptake by Victorians was slow until almost the mid-1970s. Some of the most active of these early founders in the 1960's were Barry Firkin, Alan Skyring, Tony Edwards, Marc Playoust, Paul Nestel, Peter Castaldi, John Turtle. The common practice which developed was for such people to identify individuals whom they regarded as being suitable directors of ASMR and push them to offer themselves as candidates. In that sense, "patronage" was rife, but patronage of the young by the young, and the system seemed to work, because each year the Directors and office bearers carried out the tasks of the Society extremely well. Membership of the Society and its Directors were largely derived from University Departments, clinical and non-clinical. Many

Directors and office-bearers of the ASMR went on to careers in which they served Medical Research very well.

The early 1970s began the ASMR efforts to improve the lot of medical research in Australia. I cannot remember it as being a specific decision made at any point in time by any group of directors or individual. I know that 1971, the year in which I was president-elect, we began to exert quite some activity in the area which increased considerably in 1972. Some years ago I came across a file of newspaper cuttings and copies of correspondence from 1971 and 1972 on exactly this point. We had extensive correspondence and face-to-face meetings with senior politicians in Canberra, including meeting with Bill Hayden when leader of the opposition, and with members of the Labour health group. These were the first such meetings between ASMR officers and politicians — at that time it was a Liberal government but we felt it was important to relate to the opposition because the Liberals had been in for so long. I do not recall or claim that anything specific came out of these early meetings, but they were certainly the forerunner of many which then became routine for the Society.

Perusal of those newspaper articles reminds me that we were inclined in those days as "young Turks" to use fairly intemperate language from time to time, or at least to be quoted in this way. Nowadays people are tending to be more diplomatic and political. I do remember being called on the day of one such newspaper article by a very senior Australian medical scientist who very gently suggested that I might be a little more diplomatic in my discussions with journalists.

Anotable recorded event from those years was a Symposium the Society held in Sydney in 1970, on "The Economics of Medical Research". It documented and deplored the parlous state of research funding in Australia. The Medical Research Endowment Fund grant through the NHMRC for research in 1969–70 was \$1,764,827. Remarkable things were achieved with a level of support that looks unappealing even when corrected to 2018 dollars.

In my own year as president — 1972 — I remember with great sadness the tragic deaths during the annual scientific meeting at the Gold Coast of Marcus Ma, Clare Campion and Marc Playoust. I was one of about 10 at the table at dinner with them on the evening when several of the table decided after dinner to swim in the surf opposite the hotel. The scientific meeting continuing the following day after the deaths of our colleagues, but you can imagine the effect that this tragedy had on the gathering of young people. The Society was built around strong personal relationships, aimed at helping one another as a community. This sad event cemented those plans, and the Society continues to play an important role in Australian science and medicine.

#### **Professor T. John Martin FRS**

## 7 May 2018





Seach Inspired Creativity When Art Meets Science

### **Firkin Orator**

Honour Harger Executive Director ArtScience Museum, Singapore *Forging new synergies between art and science* 





Edwards Orator Prof Paul Torzillo Co-Director Healthhabitat & Clinical Professor, University of Sydney Transforming health outcomes in remote and developing communities through intelligent housing design

## Inside the Scientist's Studio

Prof Joseph Penninger, Scientific Director of the Institute of Molecular Biotechnology, Vienna Delve into the life and mind of one of the world's great scientists



## AUSTRALIAN SOCIETY FOR MEDICAL RESEARCH NATIONAL SCIENTIFIC CONFERENCE

NOVEMBER, 21-23 2018

ELDER HALL MUSIC CONSERVATORIUM ADELAIDE, SOUTH AUSTRALIA



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