# MSSANZ NEWSLETTER



## MODSIM2023 CONGRESS

Modelling to support planning for resilience in a changing world

**Darwin Convention Centre in the Northern Territory** 

Sunday 9 to Friday 14 July 2023
Congress Convenors:
Dr Chris Chilcott, CSIRO
Dr Jai Vaze, CSIRO
Prof. Lindsay Hutley, Charles Darwin University

www.mssanz.org.au/modsim2023

**INSIDE THIS ISSUE** 

**MODSIM2023 Update** 

**President's Report** 

Treasurer's Report

**MODSIM2021** Report

2021 Biennial Medallists

**2021 ECRE Awards** 

2021 Student Awards

**2020 MSSANZ Fellows** 

A history of MODSIM

MSSANZ aims to promote, develop and assist in the study of all areas of modelling and simulation.

The society's main activity is organising the MODSIM biennial congresses on modelling and simulation (the first in 1974). These congresses are highly regarded and well attended and attract strong student representation through the award of student prizes and subsidised registration.



## MODSIM2023 Update

Planning for the congress is underway. The Australian Society for Operations Research (ASOR) will be joining us again at MODSIM2023. The International Environmental Modelling and Software Society (iEMSs) is supporting two streams. The theme for the 2023 congress is *Modelling to support planning for resilience in a changing world.* 

We are looking forward to having the opportunity to go back to meeting in person again in Darwin. For those unable to make it the Plenaries and Keynotes will be live streamed and available to watch free of charge. We strongly encourage you to attend in person if you can to take advantage of the collaborative atmosphere of our congresses; networking with other delegates between sessions is often where the best new ideas and partnerships emerge. Please note you must attend in person if you wish to present a paper or poster.

Although the Workshop day on Friday 14 July is optional, you should plan to stay on and participate, we are expecting to have workshops covering a variety of topics. The workshops are another excellent opportunity for more in-depth discussion and networking.

Accommodation in Darwin will be tight in July, so please book early to avoid disappointment, some suggestions are available on the MODSIM2023 website. It is also a good idea to book flights as soon as possible.

Please take note of the key dates on the following page and make sure you submit your extended abstract or full paper on time if you wish to present. Submissions are open now.

We look forward to seeing you in Darwin!

## **MODSIM2023 CONGRESS**

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Sunday 9 to Friday 14 July 2023
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## **Organising Committee**

Dr Matt Gibbs Mrs Jo Owens Dr Melanie Ayre Dr Dylan Irvine Mr Adrian Costar Mr David Waters

## **Program Committee**

Dr Jai Vaze (Chair) Ms Susan Cuddy (Chair)

The Program Committee comprises the Chairs and Stream leaders.

## **Key Dates**

Submission of full papers: 10 March 2023 Notification of acceptance, rejection and any revisions: 21 April 2023

Submission of revised papers: 10 May 2023

**Submission of extended abstracts only:** 5 May 2023

Finalisation of all full papers and extended abstracts: 17 May 2023

**Early bird registration:** 31 March 2023 **All presenting authors to be registered:** 

15 May 2023

Last day to register: 30 June 2023

www.mssanz.org.au/modsim2023/dates.html



#### **MODSIM2023 Streams**

**Applied and computational mathematics** 

Stream leaders: Barry Croke and

Georgy Sofronov **Biological systems** 

Stream leaders: Malcom McPhee and

Val Snow

Computer science and engineering

Stream leaders: Min Chen and Dan Ames

**Economics and finance** 

Stream leaders: Chia-Lin Chang, Hamid Yahyaei and Lurion De Mello

Energy, integrated infrastructure and urban planning

Charana

Stream leaders: John Boland and

Behzad Rismanchi

**Environment and ecology** 

Stream leaders: Stefan Reis and Shawn Laffan

Global change and natural hazards

Stream leaders: Jason Evans and

Christoph Rudiger

Health and biosecurity

Stream leaders: Louise Freebairn and

Irene Hudson

Social systems and modelling processes

Stream leaders: Kate O'Brien and Oz Sahin

**Water Resources** 

Stream leaders: Jai Vaze and Murray Peel

**Hydroclimate** 

Stream leaders: Yongqiang Zhang and

Conrad Wasko

Water quality

Stream leaders: Andrew Western, Danlu Guo

and Anna Lintern

**ASOR** 

Stream leaders: Melanie Ayre and

Simon Dunstall

**Organising Committee** 

**Program Committee** 

**Key Dates** 

**MODSIM2023 Streams** 

Two presentation types will be featured at the congress: oral or poster.

For either presentation type, authors can choose whether to submit a full paper <u>or</u> an extended abstract.

For further information see:

www.mssanz.org.au/modsim 2023/instructions.html



**President's Report** 

**Treasurer's Report** 

## **President's Report**

As you would have seen on p1, preparations for MODSIM 2023 are well underway. I'd reinforce that you should book accommodation early as July in Darwin is a very busy time. Looking back, I am sorry to have missed attending MODSIM 2021 in person. I'd particularly like to thank our four conveners, Willem Vervoort, Jason Evans, Lucy Marshall and Alexey Voinov. From all reports from in-person attendees, it was a great congress and I appreciate the extra effort required from our conveners, stream leaders and session organisers to make it work in its hybrid format. I was there virtually, but it's just not the same as I'm sure many of you discovered and I am looking forward to seeing you all in person at MODSIM2023.

In somewhat more sombre news, it is my sad duty to let the membership know that Professor Michael McAleer passed away on 8 July 2021 at the age of 68. Michael succumbed to a long battle with cancer, but apart from his bald head bobbing about at the MODSIM congresses, you would hardly have known that he was sick. He was always a bundle of energy and a great supporter of the Society and MODSIM congresses. He was instrumental in setting up the Society in its early years, and was awarded the prestigious MSSANZ Biennial Medal in 2011, reflecting not just his service to the Society, but his enormous impact in the fields of economics, finance and econometrics. Further details of Michael's sterling career can be found in his obituary at <a href="https://doi.org/10.3390/sci3040048">https://doi.org/10.3390/sci3040048</a>.

Best regards,

David Post MSSANZ President





## Treasurer's Report

Dear All,

A major activity of MSSANZ during the 2021–22 financial year was running the MODSIM2021 congress at the University of Sydney in December 2021, and finalising the expenses and revenues from the congress. MSSANZ remains in a strong financial position. The society still maintains its regular income sources, mainly the interest gained from our 'sinking fund' term deposit and business online saver account.

The 2021–22 financial records will be fully audited by Les Ellis and Associates Pty shortly.

Please contact me via email (<u>barry.croke@anu.edu.au</u>) if you wish to view the Society's financial statements or to discuss any aspect of the financial management of MSSANZ.

Barry Croke MSSANZ Treasurer





Report on MODSIM2021/24th International Congress on Modelling and Simulation Sydney, 5 December to 10 December 2021



## Report on MODSIM2021

The 24th International Congress on Modelling and Simulation, MODSIM2021 incorporating the 2nd Regional Conference of the International Environmental Modelling and Software Society (iEMSs), was in Sydney. The congress took place from 5 – 10 December at the University of Sydney and the International Conference Centre in Sydney as our first hybrid congress. It was once again held jointly with the 28th National Conference of the Australian Society for Operations Research (ASOR) and the DST Group led Defence Operations Research Symposium (DORS), as well as the International Microsimulation Association. The theme of the congress was 'Modelling for action with a flood of data and a cloud of uncertainty'.

Despite the COVID-19 pandemic there were 190 attendees in person and 530 online at our first hybrid congress, with many of our international members attending online. This included the opportunity to present online or in person and have virtual posters and have hybrid and virtual workshops. Of the attendees 65 were students, and there were 502 talks overall across 13 different streams.

The attendees enjoyed the wide range of invited plenary speakers including the opening plenary on Sunday from Professor Belinda Medlyn from Western Sydney University speaking about climate change and Australian vegetation and where this is headed. On Monday Professor Ganna Progrebna from the University of Sydney discussed anthropomorphic learning, bridging behavioural and data science. On Tuesday we heard from Professor David Hamilton from the Australian Rivers Institute at Griffith University investigating whether our models are keeping up with the data deluge. On Wednesday, Professor Holger Maier (University of Adelaide) led the way to unite and conquer to solve our decision paralysis with all the data and uncertainty. Finally, on Thursday, the President's invited Plenary was given by Dr Matthew Adams (Queensland University of Technology) who talked about the exciting area of bridging mechanistic and statistical models. Speakers' abstracts and their bios are at: <a href="https://www.mssanz.org.au/modsim2021/plenary.html">https://www.mssanz.org.au/modsim2021/plenary.html</a>

The opening session, early career event and welcome reception at the International Conference Centre in Darling Harbour was well attended, given the limitations on travel. The Congress Dinner was back in Darling Harbour with music and plenty of food and a great opportunity to speak with each other. This included a presentation of the MSSANZ awards and fellows to many of our outstanding members.

Report on MODSIM2021

## 2021 Biennial Medallists

#### Emeritus Professor Tony Jakeman, Australian National University, Australia

Tony is Emeritus Professor, Fenner School of Environment and Society and member of the Institute for Water Futures. He is an environmental modeller with over 450 publications, including seminal papers pioneering the development of integrated assessment methods and decision support systems for water and associated resource problems, which have had a profound impact on the global modelling and simulation community. As of September 2022 he has an h-index on Web of Science of 50 and 71 on Google Scholar with 25,000 citations. In 2015, 2017 and 2018 Tony was listed as a Highly-Cited Researcher by Clarivate/Thomson-Reuters (top 1%, computer science). He has been a principal supervisor to over 60 graduated PhD students. Tony has received multiple awards during his career including two lifetime achievement awards, one coming from MSSANZ.

Tony has an outstanding networking record, building bridges between academia, research institutions and stakeholders, and has played significant roles in multiple societies. He has been a major contributor to MSSANZ, serving as President for many years, then Secretary. He has been involved in organising every MODSIM since 1993 and is still a key advisor and mentor for many in the society.

#### Professor Holger Maier, University of Adelaide, Australia

Holger is Professor of Environmental Engineering at the University of Adelaide. His interests are in developing and applying methods that result in sustainable outcomes, especially when dealing with complex systems in an uncertain environment. Examples of this include the development of decision support systems for long-term disaster risk reduction, the development of innovative bottom-up climate impact assessment methods, the development of adaptive approaches to urban stormwater management using smart technologies and the development of approaches supporting the decarbonisation of the gas industry. Holger is the Research Leader of the Economics and Strategic Decisions research cluster of the Bushfire and Natural Hazards Cooperative Research Centre, and leader of a project focusing on development of a decision support system for the assessment of policy and planning investment options for optimal natural hazard mitigation (UNHARMED).

Holger has been co-organising sessions for MODSIMs since 2001 and was recognised as a Society Fellow in 2016. He is also a recipient of the Biennial Medal of the International Environmental Modelling and Simulation Society (iEMSs) and an Editor of Environmental Modelling and Software.

#### Professor Jason Evans, University of New South Wales Sydney, Australia

Jason is a climate scientist who focuses on regional scale climate processes, climate changes and their impacts. He has a particular interest in climate hazards, their changes due to climate change and what this means for risk to various human and natural systems. Jason is an international leader in regional climate science having multiple leadership roles in World Climate Research Programme activities. He has published 195 journal papers and >50 peer reviewed conference papers. Jason has been attending MODSIMs since 1997. He started a session focused on regional climate modelling in 2003, and has been stream leader of the Natural Hazards and Global Change stream since 2017.

Jason received the Australian Agricultural Industries Young Innovators and Scientists Award from the federal Department of Agriculture, Fisheries and Forestry in 2008, gave the MSSANZ mid-career plenary lecture in 2015, was awarded the Priestley Medal by the Australian Meteorology and Oceanography Society in 2017, and is a Fellow of the Royal Society of NSW. Jason has also held a number of editorial roles at various journals most notably as editor of the Journal of Climate.

#### **Biennial Medals**

- In every odd-numbered year, to coincide with the Biennial Congress, the Society may confer a limited number of Biennial Medals for 'exceptional research contributions to modelling and simulation, and for promoting the aims of the Society'.
- 2. Biennial Medallists automatically become Fellows of the Society, and are entitled to use the postnominal 'FMSSANZ'.
- 3. Any member of the Society may be nominated for a Biennial Medal. The proposer and seconder must be members of the Society. Self-nomination is not permitted.



#### **2021 Biennial Medallists**

Prof. Tony Jakeman



Prof. Holger Maier



Prof. Jason Evans



## 2021 Early Career Research Excellence Awards

#### Dr Anna Lintern, Monash University, Australia

Anna is a Lecturer in the Department of Civil Engineering at Monash University. Her research focuses on understanding the key processes influencing stream and lake water quality – and predicting future water quality. She has a background in both experimental research and environmental modelling, with an interest in interdisciplinary research. Anna was an organiser of the Water Quality Modelling session at MODSIM in 2017 and 2019, is the Water Quality Modelling Stream Leader, and also was a convenor of the Early Career Researcher event at MODSIM2021. She is also a co-convenor of the Water Quality Modelling Special Interest Group. Outside of research, she is passionate about the impact of science on policy. She is the Science & Technology Australia STEM Ambassador for the Federal Electorate of Goldstein and is on the Steering Committee for Future Earth Australia.

#### Dr Seokhyeon Kim, Kyung Hee University (KHU), South Korea

Seokhyeon received B.E. and M.E. degrees from Korea University, Seoul, South Korea, in 2001 and 2008, respectively, and his Ph.D. degree from the University of New South Wales (UNSW) in 2017. Prior to joining KHU as an associate professor in March 2022, he had worked in Hyundai Engineering and Construction as an engineer and in the UNSW Water Research Centre as a research associate. Central to research areas has been the role satellite remote sensing retrievals can play in improving hydrologic modelling and assessment, be it in the context of satellite data merging, flood prediction, deciphering climate change impact, or simply assessing and reducing uncertainties to make predictions reliable. Through his research career, he has endeavoured to improve predictions to benefit underprivileged communities. He is an Associate Editor of Frontiers in Water. He has led sessions on hydrological applications of remote sensing data for the past few MODSIMs.

#### Dr Enayat Moallemi, Deakin University, Australia

Enayat's research is focused on computational approaches for scenario modelling and decision analysis in human-natural systems. He advances modelling for sustainability in theory, technique, and application. He uses simulation models to understand the drivers of systems change and to explore transitions to the future. This often involves the integration of newly developed or established models of human-natural system interactions with bespoke scenario/decision tools and participatory/people-focused methods. In all these areas, Enayat has contributed to MSSANZ/MODSIM, organising sessions, creating new collaborations, and writing in the community's technical journals since 2015. He was the recipient of an MSSANZ Student Presentation Award in MODSIM2015.

#### Dr Keirnan Fowler, University of Melbourne, Australia

Keirnan completed his PhD at the University of Melbourne in 2017, developing methods to improve rainfall runoff modelling under a variable and changing climate, with a particular focus on Australia's Millennium Drought. Prior to his PhD, Keirnan was a consulting engineering for six years with Sinclair Knight Merz (now Jacobs), working for a variety of government and industry clients on projects covering water resources management, catchment modelling and flood risk. Keirnan is passionate about enhancing links between industry and academia and developing modelling methods that are tailored to industry needs and decision support. He is currently a senior research fellow with the Environmental Hydrology and Water Resources research group at the University of Melbourne, with research interests spanning hydrological processes under changing climate, hydrological non-stationarity, and decision making under uncertainty.

#### Dr Avril Horne, University of Melbourne, Australia

After working in industry and government for 10 years, Avril returned to academia in 2014 and works on projects developing tools and systems to assist efficient and adaptive environmental water management; allocation mechanisms and institutional arrangements for environmental water; and reallocation policies between water sectors. Avril will finish her DECRA at the end of this year having looked at managing environmental water under variability and climate change. She has also led a Linkage Project examining decision scaling approaches and their applicability to large river systems. Avril is the lead editor for *Water for the Environment: from policy and science to implementation and management*, a book that includes contributions from over 50 leading scientists and practitioners internationally.



**2021 ECRE awards**Dr Anna Lintern



Dr Seokhyeon Kim



Dr Enayat Moallemi



Dr Keirnan Fowler



Dr Avril Horne





## MODSIM2021 Student Awards for Best Presentation

- 1. In every oddnumbered year, to coincide with the Biennial Congress, the Society may confer multiple Student Awards for Excellent Presentation.
- 2. The Convenor of the Biennial Congress and the President will appoint a Student Awards Committee for the Congress.
- Nomination and selection procedure for Student Awards are determined by the Student Awards Committee, in consultation with the Management Committee.

### **MODSIM2021 Student Awards for Presentations**

#### Congratulations to all the awardees!!!

#### Winners

#### Danielle Udy, University of Tasmania

How does salty snowfall in Antarctica help us understand Australian hydroclimate risk? Hamid Yahyaei, Macquarie University

The impacts of the El Niño–Southern Oscillation on global food security: An implied volatility approach

#### Johan Visser, University of New South Wales Sydney

No 'hook' structures in extreme precipitation-temperature scaling

#### Commendations

#### Philippa Higgins, University of New South Wales Sydney

Recent increase in Northern Australian streamflow unmatched over the past 600 years

#### Jacob Simpson, University of New South Wales Canberra

Agile, antifragile, Al-enabled command and control: The dynamics of survival in high-intensity conflicts

#### **Shuang Liu,** University of New South Wales Sydney

Utility of remote sensing for understanding water quality changes in small urban waterbodies

#### Pengcheng Zhao, The University of Melbourne

Extending a joint probability modelling approach for post-processing ensemble precipitation forecasts from numerical weather prediction models

#### Kate Coelli, The University of Sydney

A nationally scalable approach to simulating soil organic carbon in agricultural landscapes

#### Marcela Silva, Monash University

Modelling water fluxes across the Soil-Plant-Atmosphere Continuum using FETCH3

Shirui Hao, The University of Melbourne

Remotely sensed crop biomass model over wheat cropping field for assimilating Sentinel-2 imagery into a crop yield prediction model

#### **MODSIM2023 Student Awards Information**

Students planning to attend MODSIM2023 can find more information on Student Awards on our website at www.mssanz.org.au/modsim2023/students.html



Student Award winner Danielle Udy put her prize money towards new hiking gear and went on an awesome hike to the Walls of Jerusalem National Park in Tasmania. She said it was a great mini adventure to break up her PhD thesis writing.

#### 2020 Fellows

#### Associate Professor Sondoss Elsawah, University of New South Wales Canberra, Australia

Sondoss is the Director of the Capability Systems Centre at University of New South Wales Canberra. She leads a multi-disciplinary group of scientists, engineers, and practitioners who are passionate about the design and use of model-based decision support methodologies. Sondoss is also a dedicated educator who loves to stretch the mental models of her students to think in systems and understand the powerful role of data, models, and stories in driving sustainable and positive changes. Since 2013, Sondoss has been an active member in the MSSANZ community, organising MODSIM sessions and coleading a congress stream. Sondoss served as Treasurer for MSSANZ from 2014 to 2017. In 2019, Sondoss stepped up to convene the 23rd International Congress on Modelling and Simulation. She now serves as the Vice President of the Society. Sondoss is also an editor of the Journal of Environmental Modelling & Software, and co- Editor in Chief of the Journal of Socio-Environmental Systems Modelling.



Jason is a climate scientist who focuses on regional scale climate processes, climate changes and their impacts. He has a particular interest in climate hazards, their changes due to climate change and what this means for risk to various human and natural systems. Jason is an international leader in regional climate science having multiple leadership roles in World Climate Research Programme activities. He has published 195 journal papers and >50 peer reviewed conference papers. Jason has been attending MODSIMs since 1997. He started a session focused on regional climate modelling in 2003, and has been stream leader of the Natural Hazards and Global Change stream since 2017.

#### Dr Tim Peterson, Monash University, Australia

Tim is a Senior Lecturer in Environmental Engineering at Monash University. His research focuses on socially relevant long-term change in streamflow and groundwater processes and drivers. Central to this is making better use of long-term data to understand how the dynamics of our catchments have and may change, understanding if our catchments do recover from distances such as droughts and translating this research into numerical tools that enable others to better answer their own questions about catchments (e.g. his <a href="https://linearch.com/HydroSight">HydroSight</a> groundwater time-series package). Tim has attended every MODSIM since 2005, been a session organiser five times, and was Stream Leader for *Computer science and engineering* from 2013 to 2019 and *Water resources* in 2021. Tim also served as Public Officer for MSSANZ from 2007 to 2013 and received the MSSANZ Early Career Research Excellence Award in 2015.

#### Associate Professor Willem Vervoort, The University of Sydney, Australia

Willem develops and improves models to advance sustainable water management for better decision making at the University of Sydney. He is currently the Director of the ARC Training Centre in Data Analytics for Resources and Environment (DARE). His particular interest is in combining novel data science and remote sensing data into hydrological simulations to provide uncertainty quantified predictions and forecasts. Willem is an active MSSANZ board member and currently the MSSANZ Committee Secretary, as well as being on the Environmental Modelling and Software Editorial board. He led the students award committee between 2017 and 2019 and was the lead convenor of the MODSIM2021 congress in Sydney.

The MSSANZ president emails the Society members a call for nomination for both Biennial Medallists (odd years) and MSSANZ Fellows (even years). When these call for nominations happen, we strongly encourage members to nominate colleagues whom they consider to be worthy of the awards. More information is available at <a href="https://www.mssanz.org.au/awards/criteria.html">www.mssanz.org.au/awards/criteria.html</a>.

The MSSANZ Fellowships recognise the dedication of the awardees to promoting the aims of the Society as well as for their contributions to modelling and simulation. We warmly thank all of the 2020 Fellows for their contributions to the congresses and the Society over the years.



#### 2020 Fellows

Dr Sondoss Elsawah



Prof. Jason Evans



Dr Tim Peterson



Associate Prof. Willem Vervoort





## A history of MODSIM

## The MODSIM congresses of MSSANZ – a short history

(from a talk given by Professor Tony Jakeman at MODSIM2021)

#### Birthplace and numbers

Our Society's birth was in 1974 at Lucas Heights when it was the Simulation Society of Australia whose stalwart was Peter Benyon at CSIRO. We regard it as our first biennial meeting. In those early years our attendees numbered in the few tens, but at that stage modelling was a much more novel endeavour. The Society has twice been renamed to reflect that simulation is only one purpose of modelling and later to embrace our New Zealand colleagues who now have run two biennial meetings, the first at the University of Waikato, Hamilton in 1979 and the second at the University of Canterbury, Christchurch in 2007.

This congress here in Sydney is our 24th Biennial meeting, which are almost always held in odd years and usually in December unless we go north, something we have done in Townsville and Cairns in July.

Our meeting in 1993 was in Perth and that was a milestone event with over 300 attendees, a substantial number being international, and it was also the start of an expanded set of proceedings of four volumes until of course we went digital and published proceedings on our website. Michael McAleer was the convenor but I will say a little more of him later.

At the past four meetings we have been reaching around 800 participants. Part of that success is due to our collaboration with ASOR and the DST Group DORS, which we much enjoy and appreciate. Another is our expanded agenda where modelling of interdisciplinary, societal issues to solve major real-world problems features heavily. Indeed in our program, you will see mention of papers with topics and perspectives for instance around governance and society engagement. But even our more disciplinary papers will include mention of modelling, for example, that is fit-for-purpose and that addresses uncertainty, reflecting the problem-oriented focus and rigour of MSSANZ. We tend to envelop all aspects of modelling.

#### **Awards**

Awards to honour our membership were instituted in 1995 for Biennial Medals and for Fellows. Medallists are researchers who have made sustained and influential contributions to modelling and simulation but who also have been members of the society. Fellows will have given valuable service but are also excellent researchers.

MSSANZ values our students as the next cohort of leaders in modelling. Student Awards have been given to encourage their development since 1997.

But in 2001 we introduced Early Career Research Excellence Awards for researchers up to seven years post PhD. An aim here is to recognise the diversity of our members.

In 2017 the President's Invited Lecture was instituted for mid-career researchers on the rise, thereby filling a remaining niche that warrants recognition.

#### Key people

Our Fellows are our recognised strong contributors to the service of the Society, organising congress sessions regularly, or being on the MSSANZ Executive etc.

Every biennial congress has been organised by members who volunteer their time and they will tell you how demanding it all can be, especially in the lead up to a congress. This is even though we have an excellent paid organiser in Karen Mobbs.

But I would like to mention three people above all.

Susan Cuddy has been working with us since the late 1980s. She has been a major support figure at the registration desk for most of our congresses and a long-term Secretary of the Society who keeps us on the straight and narrow. She has also led many of our Student award assessments.

And there are two others not here. Bob Anderssen, among other things, chaired our Awards Committee for several years and contributed to sustaining the Society by instigating the setup of our Sinking Fund to ensure sustainability of the Society through trying times. He would feel that the current pandemic is just one example of a testing event. Bob, by the way, is arguably Australia's highest honoured, living applied mathematician. Happy 83rd birthday next month to Bob.



A history of MODSIM

But especially I wish to acknowledge Michael McAleer who passed away this last July. He was instrumental in making MSSANZ a venue for international participants, particularly from Japan and China. He also worked closely with me in setting up our Award structures. Vale Michael! We miss you and your crucial contributions to MSSANZ being a healthy Society.

#### The future

Relationships have been developed with several international Journals and Societies and this will continue to strengthen and showcase Australian and New Zealand modelling science. We have had MATCOM (Mathematics and Computers in Simulation) journal special issues through our relationship with the International Association for Mathematics and Computers in Simulation (IMACS). And the high impact journal Environmental Modelling and Software is now underpinned by several MSSANZ members as journal Editors (being Sondoss Elsawah, Lucy Marshall and Holger Maier), and others as Editorial Board members.

MSSANZ is also one of several societies affiliated with the open access free-to-publish journal Socio-Environmental Systems Modelling (SESMO) and has close connections with the International Environmental Modelling and Software Society (iEMSs), many of whose members would normally come to a MODSIM.

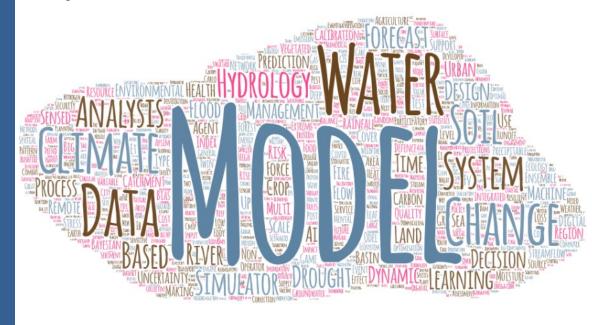
In 2021, the Society became a foundation member of the Open Modeling Foundation (OMF). OMF is an international open science community, with the vision of enabling open and ethical modelling efforts across all domains of human and Earth system sciences and engineering. The emphasis is on openness, transparency, and ethical practices that enable modelling scientists to share knowledge and build on one another's research. More information on OMF is available at https://openmodelingfoundation.github.io/

It is noteworthy that the journal SESMO now has in in place a compendium that entails special issues in *Fundamentals of modelling and good practice*.

#### What would I like to see more of?

More workshops on topics needing multiple perspectives, fundamental papers as outputs, and eventually national courses that deliver fundamental modelling skills for students in Australia and NZ curricula. But in general we can do well to continue to fulfil the MSSANZ aims to promote, develop and assist in the study of all areas of modelling and simulation, through our biennial congresses.

And on a social note, we will undoubtedly continue our very successful gala congress dinners where many friendships and collaborations have been formed. A society is only as strong as its member base.



Word cloud generated from titles of papers submitted to MODSIM2019 Credit: Purvesh Badmera, CSIRO