

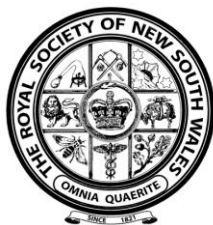


The Royal Society of New South Wales

ABN 76 470 896 415

"for the encouragement of studies and investigations in Science Art Literature and Philosophy"

Annual Report of Council for the year ending 31 December 2014



The Royal Society of New South Wales Annual Report of Council for the year ending 31 December 2014

ABOUT THE SOCIETY

The Society is the oldest learned society in the Southern Hemisphere, tracing its origin to the *Philosophical Society of Australasia*, founded in Sydney in 1821. It became *the Royal Society of New South Wales* by Royal Assent in 1866 and was incorporated by an Act of the NSW Parliament in 1881. The Society exists for ...*the encouragement of studies and investigations in Science Art Literature and Philosophy...*, in particular: publishing results of investigations in its *Journal and Proceedings*; conducting monthly meetings; awarding prizes and medals; and by liaison with other learned societies within Australia and internationally.

Membership is open to any person whose application is acceptable to the Society. The Society welcomes both members and non-members to its activities.

OFFICE-BEARERS

The members of the Council of the Society for 2014 were elected at the Annual General Meeting held on Wednesday 2 April 2014. They hold office from that date until the next Annual General Meeting. They are:

Patrons	Her Excellency the Hon Quentin Bryce AC CVO Governor-General of the Commonwealth of Australia (until 28 March 2014) Her Excellency the Hon Professor Dame Marie Bashir AC CVO Governor of New South Wales (until 1 October 2014) His Excellency the Hon General David Hurley AC DSC (Ret'd) Governor of New South Wales (from 2 October 2014)
President	Dr Donald Hector BE(Chem) PhD (Syd) FICHEM FIEAust FAICD FRSN
Vice Presidents	Mr John Hardie BSc (Syd) FGS MACE FRSN Em. Prof. David Brynn Hibbert BSc PhD(Lond) CChem FRSC RACI FRSN Em. Prof. Heinrich Hora DipPhys Dr.rer.nat DSc FAIP FInstP CPhys FRSN
Hon. Secretary (Ed.)	Prof. Michael Burton BA MA (Cantab) PhD (Edinb) FASA FAIP FRSN
Hon. Secretary (Gen.)	Mr Colin Bradley BBus MA (Bus Res) MHA GAICD
Hon. Treasurer	Mr Shakti Ram BComm (Macq) MBA (Deakin) CPA GAICD (until 31 December 2014) (Vacant) (from 1 January 2015)
Hon. Librarian	(Vacant)
Councillors	Dr Erik W. Aslaksen MSc PhD FRSN Prof Richard Banati MD PhD FRSN Mr David Beale BSc(Tech) (NSW) FIEAust

	Dr Ragbir Bhathal PhD FSAAS
	Ms Margaret Cameron LLB (Syd)
	Mr Brendon Hyde BE(Syd) MEngSc(NSW) MICE (Lon) FIEPak FIEAust CPEng
	Em. Prof Roy MacLeod AB (Harvard) PhD, Litt D (Cantab) FAHA FASSA FRSN
	Dr Frederick Osman BSc(Hons) PhD(UWS) Grad Dip Ed FACE MAIP MRSN SSAI JP
	Ms Judith Wheeldon AM BS (Wis) MEd (Syd) FACE FRSN
Southern Highlands Branch Chair	Mr Hubert Regtop BSc (NSW)
Executive Office	Ms Emma Dallas DipHR BComm (UWS) LLB (UWS) (until 30 September 2014) The Association Specialists (from 1 October 2014)
Honorary Auditor	Mr Richard Wilmott (appointed by resolution of Council in October 2014; to be confirmed at the 2015 AGM)

The Council met eleven times during the reporting period at the Society's Rooms and, in addition, several meetings of Council committees were held. Committees for Awards, Events, Fellows, Finance and Risk and Publications were active during the reporting period. Under the guidance of the current committee, the branch in the Southern Highlands continues to thrive.

OFFICE LOCATION AND SERVICES

The Society occupies premises at 121 Darlington Road, University of Sydney. The Society is grateful to the University of Sydney in making this accommodation available to the Society.

During the first half of 2014, the Council explored options for providing back-office services. The Council determined that it was not possible for a single, part-time executive officer to provide the level of service that the members of the Society require. From 1 October 2014, back-office services have been provided under an outsourcing contract by The Association Specialists, 33-35 Atchison Street, Crows Nest NSW. The Society would like to acknowledge Ms Emma Dallas, who was the Society's Executive Officer for just over two years, for her contribution.

LIBRARY

The Society continues to operate a journal exchange program with a large number of overseas organisations. The exchanged journals are housed in the Dixon Library at the University of New England, which maintains and provides full access to this material. The Society wishes to thank the University for its support of the Society's collection. Further library holdings of the Society continue to be housed in secure warehouse accommodation. The Society thanks Mr Clive Wilmot for this contribution.

PRESIDENT'S REPORT

Continuing the themes established over the last several years, the Council has continued to focus on five strategic programmes: rebuilding the Society's membership; providing a stimulating programme of events that are both important and interesting in the current context; extending the Society's prestigious awards programme to the full range of disciplines; developing the editorial content of the *Journal and Proceedings of the Royal Society of NSW* and substantially modernising and improving the Society's back-office

processes. The Council is pleased to report that in all five of these areas there has been very considerable progress.

The major success for the year has been the enthusiastic embracing of the new Fellowships of the Society. The Fellows Committee, chaired by Em Professor Heinz Hora, undertakes rigorous evaluation of nominations for Fellowship against the criteria in the Society's by-laws. The first group of very accomplished Fellows were presented with their certificates at the annual dinner in May and over the last 12 months, over 80 Fellows have accepted nomination and been elected to the Society. Without exception, the Fellows are acknowledged leaders in their fields and have made major contributions to the intellectual life of NSW. We anticipate that this progress will continue unabated.

The Events Committee, chaired by John Hardie, put together an excellent programme of events for the year and further development of this is planned 2015.

The awards programme continues to attract a very high-calibre nominations and we were particularly pleased with the entries this year. The Awards Committee, chaired by Professor Brynn Hibbert, seeks advice from an advisory panel. This group is chaired by Professor Mary O'Kane, Chief Scientist and Engineer of NSW, and consists of the Deans of Science of the NSW-based universities. The 2014 awards will be presented at the annual dinner in May 2015.

Professor Michael Burton has continued to develop the editorial content of the Journal and Proceedings. It attracts a wide range of interesting papers and invited discourses that are important in promoting the Society both within Australia and internationally.

In the last 12 months the Council has embarked upon a substantial modernisation of the Society's back-office systems, in particular, the membership database and accounting system. This resulted in the decision not to continue to employ a part-time staff member but to outsource back-office services to a third-party. The Association Specialists were appointed in early August, with the transition been completed at the end of October. There were some initial problems with these arrangements but the Council is pleased with the progress to date and believes that most of the problems are now resolved.

The success in these areas over the last 12-18 months has very substantially lifted the position of the Society. In recent months, in collaboration with the NSW-based chapters of the four Australian learned Academies, the Society has been planning a major forum to be held in September 2015. The topic of this seminar will be *The future of work* and is intended to take futuristic look at the technological, social and cultural change that is expected to influence the way work is done over the next 30 years. Planning for this event is well underway and a number of highly accomplished speakers have agreed to participate.

Since the end of 2014, the Council has embarked upon a major strategic planning exercise and has produced a Green Paper for discussion and comment by the membership. This has been circulated to the membership and will be discussed by the membership prior to the commencement of the AGM on Wednesday 1 April 2015.

Acknowledgement is due to the substantial contribution made by Brynn Hibbert, Michael Burton, Heinz Hora, Colin Bradley, Roy MacLeod, John Hardie, Judith Wheeldon and Marty Cameron in the work they have done this year. Thanks are also due to the committee of the Southern Highlands branch, chaired by Hub Regtop, for the excellent programme that they have once again provided.

TREASURER'S REPORT

For many years, Society has been making trading losses largely due to a gradual decline in membership revenue, a lack of large donations and the absence of government funding. In December 2013, Council implemented plans to expand membership through the introduction of the new Fellowship category. This has been very successful with over 80 new Fellows joining the Society. However, during this transition period, together with the cost of moving from having its own employee to contract administrative services, the Society made a loss in 2014.

The decision by Council in 2013 to operate on a cost-recovery model has been successful, with previous losses for publications and some events being substantially reduced in 2014, and in some cases returning a surplus.

In November 2014 Treasurer announced his resignation. The Society has continued to have difficulty in identifying an Honorary Auditor. Fortunately, in late 2014, an Honorary Auditor was identified and at its meeting on 29 January 2015, the Council appointed Richard Wilmott to the position.

Unfortunately, with the role of Treasurer being vacant and the recent appointment of the Honorary Auditor, audited accounts are still not available. Nonetheless, in the last two months there has been significant progress in auditing the accounts from 2011-2014 and it is anticipated that these will be completed by the end of May. Once complete, full set of audited accounts will be presented at the next available general meeting of the Society for discussion by the membership. The Honorary Auditor will be at the AGM on Wednesday, 1 April 2015 to answer questions regarding the progress of the audit.

EVENTS AND LECTURES

The Society's Events Committee comprised:

Chair	Mr John Hardie
	Em. Prof. Brynn Hibbert
	Em. Prof. Heinrich Hora
	Dr Fred Osman
	President (<i>ex officio</i>)
	Honorary Secretary (<i>ex officio</i>)

The Society held a full program of eleven monthly lectures in Sydney, which included the Annual Forum, in addition to special named lectures and events during the reporting period. The monthly lecture series, for the most part held at the Union Universities and Schools Club, 25 Bent Street, Sydney, were as follows:

19 February 2014	Mr Jiangbo Zhao, Mr John Chan and Ms	2013 Scholarship winner presentations
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	Jessica Stanley	
19 February 2014	Assoc Professor Robyn Sloggett	Joint meeting with the Australian Academy of Forensic Sciences <i>Searching for clues: Unmasking art fraud and fraudsters</i>
27 February 2014	Professor Mary O’Kane FRSN	Four Societies lecture <i>Questions of power in NSW</i>
5 March 2014	Professor Hugh Durrant-Whyte FRSN	<i>Big data knowledge discovery: machine learning meets natural science</i>
2 April 2014	Laureate Professor Graeme Jameson AO	<i>The Jameson cell</i>
7 May 2014	Professor Barry Jones AC Dist FRSN	Annual dinner, presentation of 2013 awards and Distinguished Fellows lecture <i>Evidence, Opinion and Interest – the attack on scientific method</i>
4 June 2014	Professor Robert Marks FRSN	<i>What lessons have we learnt from the Global Financial Crisis?</i>
2 July 2014	Professor Graeme Stewart AM FRSN	<i>What causes MS? The impact of the genetic revolution</i>
6 August 2014	Emeritus Scienta Professor Eugenie Lumbers AM Dist FRSN	<i>Saving Australia through science education</i>
3 September 2014	Emeritus Scienta Professor Ian Sloan AO FRSN	<i>The Fourth Dimension and Beyond - the paradox of working in unimaginable worlds</i>
1 October 2014	Dr Peter Coyne	<i>Australia’s most spectacular environmental rehabilitation project: Phillip Island, Pacific Ocean</i>
5 November 2014	Dr Steve Lee and Dr Tri Phan	<i>A drop of optics</i>
20 November 2014	Professor Martin Banwell	The Liversidge Research Lecture (in conjunction with the University of Sydney and the Royal Australian Chemical Institute) <i>Recent studies on the total synthesis of natural products and related systems</i>

9 December 2014	Professor Serge Haroche	The Dirac Lecture (in conjunction with the University of NSW and the Australian Institute of Physics) <i>The beauty and serendipity of blue sky research</i>
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The Society is grateful to the Union Universities and Schools Club for providing an excellent venue for our monthly meetings.

The annual Four Societies Lecture was held on 27 February 2014 in conjunction with the Nuclear Engineering Panel of the Sydney Branch of Engineers Australia, the Australian Nuclear Association and the Australian Institute of Energy. This year's lecture was delivered by Professor Mary O'Kane FRSN, chief scientist and engineer of NSW. The topic was *Questions of power in NSW*, and addressed the issues around energy policy for NSW.

The second Distinguished Fellows Lecture was delivered by Professor Barry Jones Dist FRSN at the annual dinner held at the Union University and Schools Club on 7 May 2014. The topic was *Evidence, Opinion and Interest – the attack on scientific method*.

The Society held the 36th Liversidge Research Lecture in conjunction with the University of Sydney and the Royal Australian Chemical Institute. This year Professor Martin Banwell, of the Australian National University, delivered the lecture on 9 December 2013. His topic was *Recent studies on the total synthesis of natural products and related systems*.

The Society was pleased to hold the Dirac Lecture in conjunction with the University of New South Wales and the Australian Institute of Physics. This year Nobel Laureate Professor Serge Haroche, Collège de France in Paris, delivered the lecture on 9 December 2013. His topic was *The beauty and serendipity of blue sky research*.

The Society held its Christmas Party at the Union Universities and Schools Club on 4 December 2014. The event was preceded by the presentation of the 2014 Jak Kelly Award.

FELLOWS

In the year ending April 2015, the Society's Fellows Committee comprised:

Chair	Em Prof Heinrich Hora FRSN
Secretary	Ms Judith Wheeldon FRSN
	Prof Michael Archer Dist FRSN
	Mr John Hardie FRSN
	Em Prof Brynn Hibbert FRSN
	Dr Fred Osman MRSN
	Em Prof Ian Sloan
	President (<i>ex officio</i>)
	Honorary Secretary (<i>ex officio</i>)

At the beginning of the year Judith Wheeldon took up the position of Secretary of the Fellows Committee and at the end of the year, Emeritus Professor Heinrich Hora retired as Chair. The Council thanked Professor Hora for his energetic and diligent guidance of the

Committee over several years. Emeritus Professor Ian Sloan will take the position from April 2015.

At the annual dinner of the Society on 7 May 2014 the inaugural group of 11 Fellows were presented with the certificates. There are now over 80 extremely accomplished leaders who have been elected as Fellows of the Society.

The Society's recently-retired Patron, Dame Professor Marie Bashir has accepted nomination as a Distinguished Fellow and will be invested with the honour during 2015.

The Fellows Committee had two major projects during the year in addition to the selection of new Fellows. One was to reconsider the procedure of nomination to Fellowship to create a streamlined process that is well documented, consistent and reliable. The centrepiece of the new system is that it is centralised on the Currinda database. This is available to Committee members and Council for ready access and to protect confidentiality. As the Committee worked it became apparent how complex the process is and how carefully it must be implemented in order to meet the high standards of selection and integrity required of a professional organisation today. This task is not complete and will continue during the year and be open to amendment as needed in the future.

The other ongoing project is an examination of the criteria for Fellowship, especially as they apply to potential Fellows in the non-science categories. This discussion continues and progress is being made in both policy formulation and actual invitation to Fellowship of suitable candidates. The goal is fulfilment of the potential of "art, literature and philosophy" categories named in the Society's charter and needed for the enhancement of the conversation the Society has determined to lead in NSW.

AWARDS

The Awards Committee of Council was constituted as follows:

Chairman	Em Prof Brynn Hibbert FRSN
	Mr John Hardie FRSN
	Em Prof Heinrich Hora FRSN
	Assoc Prof Bill Sewell
	President (<i>ex officio</i>)
	Honorary Secretary (<i>ex officio</i>)

As done previously, an Advisory Panel of the Chief Scientist and Engineer of NSW, Prof Mary O'Kane, and the Deans of the Science faculties of NSW universities was invited to participate in the process. The Awards Committee received ten nominations for three awards and five nominations for the three Scholarships to be awarded. When nominations for the awards of the Society were all received, a meeting of the Advisory Panel, with Prof Hibbert in attendance, ranked the candidates and gave advice on their merits. This was communicated to the Awards Committee who made final recommendations to the Council.

At its meeting held on 20 November 2014, the Council made four awards. They were:

Royal Society of NSW Medal	Professor The Hon Dame Marie Bashir AC CVO
Clarke Medal & Lecture (geology)	Professor Robert F. Park
Edgeworth David Medal	Associate Professor Richard Payne

James Cook Medal

Scientia Professor Martin Green

In March 2015, the Council resolved to make an inaugural award of the History and Philosophy of Science Medal to Dr Ann Moyal AM.

The awards will be presented at the Annual Dinner in 2015.

The winner of the Jak Kelly award made by the Royal Society of NSW in conjunction with the Australian Institute of Physics was Linh Tran, who gave a presentation on her work at the general meeting held in December.

The Society's Scholarships for 2014 were awarded to Melanie Laird, Ruth Wells and Stephen Parker. Each of the scholarship winners made presentations on their research work at the general meeting held in February 2015.

JOURNAL AND PROCEEDINGS

Two editions of the Journal and Proceedings of the Society were published in 2014; Volumes 147-1 and 147-2, with a total of 166 pages.

Volume 147, Part 1, published online on 30 June 2014, contained three invited discourses, together with four refereed papers. The invited discourses featured two major public lectures (Professor Barry Jones with the 2014 Fellows Lecture and Professor Brynn Hibbert with the 2014 Mellor Lecture), and a Conversation with Nobel Laureate Professor Peter Doherty. The refereed papers included three of the Society award winners for 2013: Jak Kelly winner Xavier Zambrana-Puyalto, and RSNSW Scholarship winners Jessica Chapman and John Chan, together with a study of the Renaissance writer Georgius Agricola by Society member David Branagan.

Volume 147, Part 2, published online on 31 December 2014, featured two invited discourses and four refereed papers. The discourses came from Society Edgeworth David Medal winner David Wilson on the topic of the role of analysis in informing decision making, together with a response from the Head of the School of Mathematics at UNSW, Bruce Henry. Further articles in this volume also took up the issue of analysis from a variety of perspectives; Brett Gooden in analysing "breathing" in an Ediacaran-era organism, John Page in the field of engineering simulation and John Nichols in the performance of masonry bond wrenches. The final article came from Society James Cook Medal winner, Professor Brien Holden, on the topic of uncorrected refraction error in sight as a public health issue.

Council has entered into an agreement with Informit, part of RMIT Publishing, in order to provide the content of the Journal online through their web portal. In particular, this provides for indexing of the Journal, thereby making its content more readily accessible to a researcher. While individuals need a subscription to access Informit, most higher education and government institutions in Australia have subscriptions with Informit, so for those members in such organisations the Journal can be obtained through Informit without charge. The direct link for accessing the Journal on Informit is <http://search.informit.com.au/browseJournalTitle;res=IELHSS;issn=0035-9173> (and is directly linked from the Journal pages on the Society website). The Journal continues to be freely available through the RSNSW website for those without a subscription to Informit.

Council is also extremely grateful to the Biodiversity Heritage Library in the USA who have taken on the task of scanning all past issues of the Journal (i.e. back to 1862!) and making them accessible via a searchable archive (including the text itself translated through optical character recognition). They have taken on this task gratis, and provide an invaluable resource for researchers interested in past material that the RSNSW has published over its long history. Direct links to the archived Journal on BHL website are given from the Journal pages of the Society website, and are:

<http://www.biodiversitylibrary.org/bibliography/52324/#/summary> (from 1868, for the J&P of the RSNSW) and <http://www.biodiversitylibrary.org/bibliography/29666/#/summary> (from 1862-67, for the preceding Transactions of the Philosophical Society of NSW).

Council started a category of “Invited Discourses” for the Journal in 2014, and was pleased that several authors took the opportunity to expound on subjects of interest in this way. Council encourages further such contributions; please contact the Editor if you have an idea you would like to discuss in this regard.

Council is also keen to encourage further special issues of the Journal devoted to topics of particular interest, such as with the Jak Kelly memorial issue in 2013. For instance, publishing short reviews associated with conferences or workshops. The Journal is also an excellent forum for publishing material associated with the historical development of an area of science within Australia (especially in NSW), and the ways and means of particular Australian contributions to a field of study. The Editor would be happy to discuss any ideas that Society members may have to record such contributions to science and society in the Journal.

The printing of the hard copy version of the Journal during 2014 was undertaken by P3 Printing at the University of New South Wales. There are 54 individual and 60 institutional subscriptions. The electronic copy (pdf files) is also freely available via the Society’s website, at http://www.royalsoc.org.au/publications/journal_2000_on.php.

BULLETIN

The Bulletin and Proceedings of the Society was published monthly during the year, except for December. The Council thanks the authors of short articles and for information submitted to the Bulletin and to members who assisted in its preparation and distribution, particularly the editor of the Bulletin, Ms Marty Cameron.

SOUTHERN HIGHLANDS BRANCH

The Southern Highlands Branch Committee for 2014/2015 was:

Chairman	Mr Hubert Regtop
Vice chairman	Dr John Wright
Hon Secretary	Ms Anne Wood
Hon Treasurer	Dr Mike Jonas
Committee members	Ms Andrea Talbot Mr Ted Smith

The Southern Highlands (RSSH) has had another very successful year. Audiences for lectures have been increasing markedly. Interestingly, although audience size is increasing, the audience from lecture to lecture varies greatly, depending on the topic.

Promotion of the Branch is working very well in the Southern Highlands community. There is excellent great support from a local newspaper, Chevalier College and ABC Radio Illawarra. There are also featured articles from time-to-time in bouquet publications such as *HighLife*. Of huge importance in keeping the community alerted to the Branch's activities is the extensive database of contacts. New attendees to provide email details so that they can kept informed of monthly activities.

The Branch held 10 meetings during the year that were well attended by members and visitors.

20 Feb 2014	Dr James Wallman	<i>Forensic entomology</i>
20 Mar 2014	Prof Paul Cooper	<i>Building sustainability</i>
17 April 2014	Prof Ken Baldwin	<i>Using lasers to create the coldest stuff in the universe</i>
15 May 2014	Dr Christian Heim	<i>Baroque and the brain wave: can music help in dementia care?</i>
19 June 2014	Dr Hugh Mackay	<i>The good life</i>
17 July 2014	Emeritus Prof Clive Probyn	<i>The Royal Society and Gulliver's Travels</i>
14 Aug 2014	Prof Veena Sahajwalla	<i>Green materials and recycling end-of-life polymers in steelmaking</i>
16 Oct 2014	Prof Kevin Varvell	<i>Higgs-Boson particle and CERN</i>
6 Nov 2014	Dr Madeleine Beekman	<i>Bees in the food chain, economy and threats</i>
20 Nov 2014	Dr Catherine Suter	<i>Genes and their relationship with epigenes</i>

Southern Highlands branch held its annual general meeting on Thursday, 26 March 2015 in Mittagong. The branch made a financial surplus for 2014, adding to its existing assets. The Branch determined that it would consider expanding its programme in 2015.

There being no other nominations, the Southern Highlands branch office-bearers for 2014 will continue in the positions in 2015.

ANNUAL GENERAL MEETING

The annual general meeting of the Society will be held on Wednesday 1 April at 5:45 pm at the Union University and Schools Club, 25 Bent Street, Sydney.

A handwritten signature in black ink that reads "Donald Hector". The signature is written in a cursive style with a large initial 'D' and a long horizontal flourish at the end.

Donald Hector

PRESIDENT

On behalf of the Council of the Royal Society of NSW