

## Editorial: The invention of Wi-Fi in Sydney

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Editor

### Introduction

I am very glad to announce a paper in this issue that we have labelled as “Great Inventions in NSW 2.” It is the account of the invention of Wi-Fi in Sydney by a team at the CSIRO’s Division of Radiophysics in the 1990s. I have wanted to include a paper about this invention — now used all over the world in billions of devices, computers, and phones — for some years. This year I came across the transcript of a 2016 interview at the Australian National Museum, obtained permission to publish an edited version of it, and contacted John O’Sullivan, the leader of the team. Wi-Fi was a team invention, and so it is appropriate that Terry Percival, another team member, was also involved in the 2016 interview. The occasion for the interview was the 2016–2017 exhibition in Canberra of “A History of the World in 100 Objects” from the British Museum (see MacGregor, 2012), to which was added the CSIRO’s prototype Wi-Fi equipment to be the 101<sup>st</sup> object in the exhibition. I should also mention that Google Maps, a pervasive phone app, was also invented in Sydney. (See the reference in the Wi-Fi paper.)

The CSIRO team was competing with many overseas computer companies to develop wireless local area networks, and the CSIRO was sued in a Texas court before its intellectual property over Wi-Fi was legally established. The computer companies had apparently been seeking to improve their

existing very slow speeds incrementally. The CSIRO team had two advantages: first, their background and experience in radio astronomy (dealing with some of the same issues); and, second, their impressive goal: to allow computers to communicate wirelessly at the much higher speed of at least 100 megabits per second. This and more they achieved. Before the patent expired, their invention earned the CSIRO (and the Australian taxpayer) over \$500 million in licensing payments from the computer companies, all of whom adopted Wi-Fi.

Today, it is disheartening to see the Australian government, and the CSIRO, continuing to cut the agency’s budget: 350 scientists will lose their jobs, and this is in addition to earlier budget and job cuts under governments of both persuasions. Could a future CSIRO team invent such technology? The prognosis does not look promising.

### Other papers in this issue

It is customary for each President of the Society to write a paper for the *Journal* at the end of their term. Immediate past president, Susan Pond FRSN, has written on “Biotechnology: a revolution in progress.” As she says, this is a topic that has consumed her professional career. From the serendipitous discovery of penicillin to the discovery of the double helix of DNA<sup>1</sup>, recombinant DNA technologies<sup>2</sup>, and the AIDS epidemic,

1 On the last day of February 1953, Francis Crick is reputed to have boasted in The Eagle, my old pub in Cambridge, that he and Watson had just discovered the “secret of life.”

2 Discussed in 1975 at another old stamping ground of mine: Asilomar, in California.

she recounts her experiences. Susan Pond concludes with the possible future of biotechnology, including the role of AI.

Robert Clancy FRSN and his wife Christine have written a description of a tour sponsored by the Royal Society of NSW, and the State Library of NSW, of Society members and others they led to Europe in the southern spring of 2019, visiting Italy, France, and Britain, as they trod in footsteps of pioneering scientists. Also included is a piece by Robert Clancy entitled, “28 Moments in a history of western science.”

Two economists, Steven Hamilton and Richard Holden FRSN, wrote a book (Hamilton and Holden, 2024) that criticised the Australian government’s public health responses during the COVID pandemic. There are several chapters that I thought were eminently suitable as papers, and I chose one chapter which describes and critiques the government’s actions in procuring vaccines for Australia. I sought and received permission to reprint the chapter as an edited paper. Another chapter critiques the policy on testing individuals for possible infection during an epidemic. The book is well worth reading, as the authors bring their view as economists to the issues of dealing with pandemics. Public health professionals do not possess all the answers to policies to deal with pandemics.

Tim Stephens is a law professor at Sydney who presented a paper at *Ideas@TheHouse* in October 2024, entitled, “The Big Thaw: who governs Antarctica’s ice?” Will this discussion about international disagreements in Antarctica prove to be a prediction of future activities in Antarctica?

David Hush FRSN continues his occasional pieces on Mozart. His paper in this issue examines the second movement of Mozart’s Piano Sonata No. 2 in F to argue that the number 3 manifests itself on multi-

ple levels in the movement, a phenomenon he labels as Mozart’s Secular Trinity.

Sadly, the issue includes two obituaries. Thomas Julius Borody (1950–2025) FRSN is written about by Robert Clancy FRSN. Benno Paul Schoenborn (1936–2025) is remembered by Robert Knott MRSN.

There are 13 abstracts of recent PhD theses at universities in NSW and the ACT. How are these chosen? As the Editor, I approach the universities (usually the Deputy Vice Chancellor Research) to ask for their best theses in the recent past. I do not myself attempt to choose between them; I do however choose the universities to approach for each issue.

### **An on-line index of the 3,880 papers we have published since 1862**

Almost ten years ago, when I was working on making the papers published in the *Journal & Proceedings* since 1867 accessible to us, on-line at the Biodiversity Heritage Library, I hoped that one day a complete index of the pieces would appear.

Has the Society ever published a paper about the poet, John Keats? To answer this question (or any others about papers we have published since 1862), go to the new on-line index, (alphabetical by first author), at [https://www.royalsoc.org.au/wp-content/uploads/2025/09/RSNSW\\_Journal\\_Index\\_20250903.html](https://www.royalsoc.org.au/wp-content/uploads/2025/09/RSNSW_Journal_Index_20250903.html) and search by author, title, or date.

For almost all of the papers there is a DOI, a Digital Object Identifier, pointing at a permanent on-line location of the paper. This is an on-line index to all 3,880 papers published by the Royal Society and its antecedents since 1862, in their journals, with their DOIs, which have been supplied by BHL Australia, using the metadata I derived for each paper, at the Journal Archive. We wish to thank BHL Australia for their

generosity. The final 156 lines of the index are recent papers (2022–2025) that do not yet have DOIs. We can hope that the BHL can overcome its current funding woes to continue its indexing. The information for each paper includes: Author, Given Names [other authors] (Year) Paper Title, Journal, Volume: Start Page–End Page, DOI/URL.

Using the information (the metadata) in the Journal Archive, BHL Australia has provided DOIs for almost all the papers we have published since 1862, which makes finding any paper very easy. The new index includes these DOIs. The index includes Author's name, other authors (if any), year, title of the paper, journal title, volume number, pagination, and DOI.

Davina Jackson's *RSNSW Bicentennial Bibliography* appeared earlier this year, at [https://www.royalsoc.org.au/wp-content/uploads/2025/03/RSNSW\\_Bicentenary\\_Bibliography\\_20250304.pdf](https://www.royalsoc.org.au/wp-content/uploads/2025/03/RSNSW_Bicentenary_Bibliography_20250304.pdf), but it does not include DOIs.

The paper on Keats can be found at its DOI, <https://doi.org/10.5962/p.361341>.

### The printed version of the *Journal*

To those of you who are reading this in your printed copy of the *Journal*: thank you. We continue to print copies and mail them out to both subscribers and institutions with which we have an exchange agreement; we receive copies of their journals and they ours. The journals we receive by exchange are deposited in the Dixon Library at the University of New England, Armidale, NSW, and UNE pays us for them, which

helps to defray our costs of printing and postage. Our Editorial Board, the members of whom are listed on the inside front cover, have been strong in their support for our continuing to print copies of the *Journal*, even as some other journals stop printing. The main reason, as I understand it, for their support is the archival value of the printed page. There is no way of knowing about the future availability, reliability, and cost of on-line archives, but printed copies, in libraries, will almost certainly continue to be available. And the annual subscription prices are not excessive: from \$76 for Australian members of the RSNSW, to \$156 for overseas non-members (which is very much less than other similar journals charge their overseas subscribers). Indeed, if the cost of printing and mailing the *Journal* is not covered by the subscription revenues, then we can always raise the subscription prices.

### Housekeeping

As always, I wish to thank Jason Antony MRSN for his assistance in producing this issue. I also thank the Editorial Board for their support, assistance, and suggestions.

### Bibliography

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MacGregor N (2012) *A History of the World in 100 Objects*. London: Penguin Books.

Robert Marks, Editor  
Balmain, 28 November 2025

