

Annual Fellows' Christmas Reading List 2016

Title of book	Author's name	Suggested By	The book in three sentences
The Silk Roads: A New History of the World	Peter Frankopan	Dr Ian Allison	An expansive reassessment of world history arguing that societal development until about the 15th Century was driven by empires in the heart of Asia and their "global" trading networks, rather than by Europe. The centre of power shifted with the "discovery" of the new world, but is shifting back to Asia again today.
Pluto's Republic	Peter Medawar	Dr Cyril Appleby	A recent reviewer, Tim Radford, described this out-of-print book as "a time capsule of scientific preoccupations of the early 1980s". Having re-read and enjoyed it very much, I offer my copy as a gift or loan. (Contact Cyril through the Academy at fellowship@science.org.au)
Parkinsons's Law	C. Northcote Parkinson	Professor Rod Boswell	How administrative structures actually work.
Being Mortal	Atul Gawande	Professor Alan Carey	This year a family member was diagnosed with cancer. We found this book to be indispensable for understanding the consequences of such an event. Should be on the reading list for all oncologists this Christmas.
A Fortunate Universe: Life in a Finely Tuned Cosmos	Geraint F. Lewis & Luke A. Barnes	Professor Matthew Colless	If the Universe had even slightly different properties, life as we know it - and life as we can imagine it - would be impossible. The authors, two Australian astrophysicists, explore what this fine-tuning means for the future of physics and the search for the ultimate laws of nature.
Wolf Hall	Hilary Mantel	Professor David Day	A detailed and brilliantly believable account of the life of Cromwell in the service of Henry VIII. Superbly written and a Booker Prize winner.
Nobel Prizes and Notable Discoveries	Erling Norrby	Professor Derek Denton	I would suggest Fellows might be very interested in Erling Norrby's 3rd volume of his series on the award of the Nobel Prize and deliberation of the Committees (revealed after the 50 year embargo).

Lords of Finance: The Bankers who broke the world	Liaquat Ahamed	Professor Mike Dopita	Traces the evolution of financial world from the 1st to the 2nd world wars, and the gives insight into the four men who precipitated the 1920s world economic collapse. Some lessons for our own generation here!
40 Years of Evolution: Darwin's Finches on Daphne Major Island	Peter R. Grant and B. Rosemary Grant	Professor John A. Endler	This is a wonderful description of documented evolutionary events in one population of Darwin's finches over 40 years. One of the most interesting results is how much environmental fluctuation affects the birds' traits; natural selection is variable in strength and sometimes in direction. It is very unusual to have such a long-term data set. And very well written.
Against Elections: The Case for Democracy	David Van Reybrouck	Professor Tim Flannery	Democracy is in bad health. <i>Against Elections</i> offers a new diagnosis – and an ancient remedy. Fear-mongering populists, distrust in the establishment, personality contests instead of reasoned debate: these are the results of the latest elections.
Fred Hoyle: A Life in Science	Simon Mitton	Prof Ken Freeman	This book is about the career of Fred Hoyle (1915-2001) who wrote ground-breaking scientific papers and caused bitter disputes in the scientific community with his revolutionary theories.
Snowy Campbell: Australian Pioneer Investigator of the Brain	Malcolm Macmillan	Professor John Furness	A brilliant biography of a fascinating Australian scientist. Great also for illustration of the times of Campbell, late 19th - early 20th Century
Finding Sanity: John Cade, Lithium and the Taming of Bipolar Disorder	Greg de Moore and Ann Westmore	Professor John Furness	John Cade, Australian psychiatrist, discovered lithium, the first effective treatment for any mental disorder. He was imprisoned and served as a medical superintendent in the notorious Changi prisoner of war camp. A compelling story.
God's Undertaker: Has Science Buried God?	John C. Lennox	Professor Peter Gill	The author, an Oxford mathematician, carefully analyses some of the arguments that have been mounted recently against the Christian worldview. His approach is refreshingly non-confrontational and is designed to be accessible to anyone with a basic scientific education. This book is stimulating and challenging for those who are interested in life's deepest questions.
The Strangest Man: The Hidden Life of Paul Dirac, Quantum Genius	Graham Farmelo	Professor Peter Hannaford	Paul Dirac is a famous physicist sometimes called the British Einstein. He was one of the leading pioneers of the greatest revolution in twentieth-century science: quantum mechanics and was the youngest theoretician ever to win the Nobel Prize for Physics.
Giving Up the Ghost: A Memoir	Hilary Mantel	Dr TJ Higgins	Beautiful writing. I missed it when it came out over a decade ago. I am very glad I found it now (as an audiobook).

The Private Science of Louis Pasteur	Gerald L. Geison	Professor Eddie Holmes	Using his lab notebooks as the primary source, Geison paints a far darker picture of Louis Pasteur than the usual model of the heroic lone scientist. No less a genius, but more devious, ruthless and ultimately fascinating. The chilling description 'the [rabies] case of John Linsay' from 1807 is worth the purchase price alone.
Antarctica: A Biography	David Day	Professor Andrew Holmes	The book is written in an engaging style and reveals the early history of the discovery of the Antarctic continent. The early indifference of many nations was transformed into intense rivalry between British, American and French explorers in the mid-19th century. Academy Fellow Sir Douglas Mawson played an enormous part in establishing Australia's role in Antarctica; this has developed into both a strategic and scientifically important commitment.
The Youth Pill: Scientists at the Brink of an Anti-Aging Revolution	David Stipp	Professor David James	This book describes attempts by researchers to develop drugs that halt the ageing process. One of the major characters is our very own David Sinclair now at Harvard. It is a great read as not only does it do the science justice but it also gives some real insights into the human side of the research/discovery process.
Secrets of the English War Bow	Hugh D. H. Soar	Professor Philip Kuchel	Evolution of the bow and arrow with emphasis on the technology (and science) at the time of the battle of Agincourt...which wood was used for the bows and arrows, and why. The metallurgy and stone masonry of the arrow heads. The politics of supply of materials for weapons, e.g., wine from Portugal had to be accompanied by a specified number of yew staves for bows...a bit like the indirect 'policy contrivances' we see today with 'carbon tax'!
A Woman of No Importance	Oscar Wilde	Professor Trevor Lithgow	In our new world that is so judgemental, and yet wishes it wasn't and tries not to be, this very short read is perfect. Take it into your garden, sit with it quietly, read some pages. You can savour where our language comes from, and see how much it has changed (and yet hasn't). Or you can reflect on what was or wasn't possible then ... depending on your gender, class or ability to not say out loud what you felt to be true.
The Patient Will See You Now: The Future of Medicine is in your Hands	Eric Topol	Professor John Mattick	A glimpse into the massive cultural, technological, digital and operational changes coming down the pipeline in medicine and healthcare - every chapter is an epiphany.
The Last Voyage of Columbus	Martin Dugard	Professor John Mattick	A compelling account of the life, voyages and fortunes of Christopher Columbus. History brought alive - a great story, from the seduction of the great houses to adventure, betrayal and tragedy - one of the best books I have read in many years.

Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity	Banu Subramaniam	Dr Oliver Mayo	A different take on diversity, given to me by my daughter, who is a print-maker.
How to Teach Quantum Mechanics to your Dog	Chad Orzel	Professor Ross McPhedran	A book I recommend for any non-expert who wants to learn about modern physics. Written in a light style, but technically correct.
The Mandibles: A Family, 2029-2047	Lionel Shriver	Emeritus Professor Michael Hynes	Readable novel about a family in a future dystopian USA. Includes a majority Hispanic population and president and ends with POTUS Chelsea Clinton. Entirely suitable for happy reading at the end of the horror of 2016 world politics.
Lab Girl: A Story of Trees, Science and Love.	Hope Jahren	Emeritus Professor Neville Nicholls	How could any scientist resist a book that starts with "There is nothing in the world more perfect than a slide rule"?
Fulbright: The Dissenter	Haynes Johnson and Bernard M. Gwertzmann	Professor Ian Petersen	The book is a biography of Senator J. William Fulbright. It covers his early years as a Rhodes Scholar and President of the University of Arkansas. It then moves on to his founding of the Fulbright Educational Exchange program and his opposition to the Vietnam war as chairman of the Senate Foreign Relations Committee.
The Silk Roads: A New History of the World	Peter Frankopan	Professor Harry Poulos	This is an innovative view of world history that I really enjoyed reading.
The Sabotage Diaries	Katherine Barnes	Professor Cheryl Praeger	Based on the wartime diaries of allied soldier Tom Barnes, the book traces the lives of a group of allied soldiers behind enemy lines in Greece during World War 2. Tom Barnes had been parachuted into Greece in October 1942 for a special mission, but after completion he was forced to remain in Greece for several years cooperating with the local Greece resistance. Tom Barnes died in a car accident shortly after his son Chris (Kathy's husband) was born. Chris is a mathematician with CSIRO.
Bird Minds: Cognition and Behaviour of Australian Native Birds	Gisela Kaplan	Emeritus Professor Lesley J. Rogers	This book about cognition in Australian birds received a Whitley Award in behavioural zoology this year. Covering brain size, tool use, play, mimicry, vocal learning, emotions and a number of other topics, it will appeal to bird watchers and readers interested in the science of complex behaviour in animals. I read it again recently and, like many others, found it most enjoyable and full of fascinating factual information on a topic not previously discussed in one volume.

A God in Ruins	Kate Atkinson	Professor Louise Ryan	Fictional account of the life of a former English Bombardier from WWII. Atkinson is a wonderful Canadian writer and this is the second book of hers I have read. I found this book very touching since my late father was also a bombardier (RAAF) serving in England during the war.
The Big Picture: On the Origins of Life, Meaning, and the Universe Itself	Sean Carroll	Professor Evan Simpson	A thoughtful discourse by a theoretical physicist at CalTech, which provides a refreshing insight into these issues which we continue to wrestle with.
From Eternity to Here: The Quest for the Ultimate Theory of Time	Sean Carroll	Professor Evan Simpson	The mystery of 'The arrow of time' has for long been a topic of philosophical debate. Dr Carroll provides a theoretical physicist's perspective which is both novel and understandable to those who are interested in the mysteries of the universe but who lack a physicist's mathematical background.
The Quantum Universe: Everything that can happen does happen.	Brian Cox and Jeff Forshaw	Professor Evan Simpson	This is an engaging and accessible account of the mysteries of the quantum universe. It is highly relevant to those grappling to understand what the physicists are talking about but who lack the physicists' mathematical background.
Encountering Terra Australis: The Australian Voyages of Nicolas Baudin and Matthew Flinders	Jean Fornasiero and John West-Sooby	Professor David Smyth	Baudin and Flinders independently explored the southern coast of Australia between Eyre Peninsula to Bass Strait in 1802, filling in the last gap of European knowledge and unexpectedly meeting half way at Encounter Bay. This historical analysis of their achievements integrates excerpts from their logs, and sketches from the published records. It is a fascinating comparison of their personalities, and the reader can judge if history is right in emphasizing Baudin's failures and Flinders' successes.
The Best Australian Science Writing 2016	Jo Chandler (editor)	Professor Fiona Stanley	If you are depressed about the state of Australian science, this book will lift your mood. It is a wonderful collection of essays from all areas of science from astronomy to evolution, ecology to climate change, how to assess risk, from how eels migrate to how an orchid pretends to be a female wasp to entice a male wasp to come inside! I have to confess I wrote the forward, but apart from that the essays are terrific!
The Unlikely Voyage of Jack de Crow: A Mirror Odyssey from North Wales to the Black Sea	A. J. Mackinnon	Emeritus Professor Stewart Turner	This is an amusing book. It will be enjoyed by anyone interested in sailing or travel. It begins in England, the author travels across the English channel and through Europe, and finishes in the black sea.

The Reef: A Passionate History: The Great Barrier Reef from Captain Cook to Climate Change	Iain McCalman	Dr Hugh Tyndale-Biscoe	Twelve fascinating stories about the Great Barrier Reef in three parts, beginning with Cook's near disaster at Endeavour River and Flinders later voyage. Two wonderful stories of castaways taken in by the local people with whom they happily lived for years. Other chapters deal with the scientists who have struggled to understand the Reef and activists, such as Judith Wright and Len Webb who saved it from destructive exploitation a generation ago.
A passion for exploring new countries' Matthew Flinders & George Bass	Josephine Bastian	Professor John Veevers	Another excellent book from Australian Scholarly Publishing on the voyages that changed the map of the place Flinders called Australia. I especially liked the account of the Encounter Bay rendezvous with Baudin's Geographe.
Sapiens: A Brief History of Humankind	Yuval Noah Harari	Dr Brian Walker	A good account of how humans evolved and developed into the variety that exists today, and very interesting, technology-driven projection of what humans will be in the near future
The Silwood Circle: A History of Ecology and the Making of Scientific Careers in Late Twentieth-Century Britain	Hannah Gay	Professor Mark Westoby	How some really bright alpha-male researchers formed a coterie (aka "mafia", "mob") that was more than the sum of its parts. They set much of ecology's research agenda 1970s-1990s, and several went on to top government roles. Written with deep understanding of the science itself and of the science process; fair and insightful about the personalities, wherever I could judge.
The Philosophical Breakfast Club: Four Remarkable Friends who Transformed Science and Changed the World	Laura J. Snyder	Professor Robert C. Williamson	A gripping tale of four remarkable scientists from the 19th century, one who invented the very name "scientist", one who was most renowned astronomer of the day, one the progenitor of the modern computer and reformer of the royal society and one the father of modern political economy. A remarkably timeless and exciting story of how eminent scientists struggled, and dealt with, many of the same problems we do today, including all the institutional inertia and impediments which it is easy to think are unique to our time. Their fearlessness in crossing what we would think of as large disciplinary boundaries is an inspiration to budding polymaths today.
Birds and Frogs: Selected Papers of Freeman Dyson, 1990–2014	Freeman J. Dyson	Professor Howard Wiseman	Freeman Dyson is the last of the generation of physicists who created modern quantum field theory in the 1940s, and is widely regarded to have deserved a Nobel Prize for his contributions. More recently he has become famous for his incisive, often controversial, and sometimes wrong (e.g. on climate change) views on all manner of scientific and social subjects. This book is a collection of some of his fascinating essays.