

## Curriculum Vitae

**Name** Professor Geoffrey Ian McFadden *PhD FAA FASP FAAM*  
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**Academic Qualifications** 1980-1984 PhD, University of Melbourne,  
Supervisor - Dr. R. Wetherbee.  
1976-1979 BSc Hons (First Class Honours),  
University of Melbourne.

### Academic Appointments

2017-2022 ARC Laureate Fellow, School of BioSciences, Univ. of Melbourne  
2012-2017 Professor, School of BioSciences, Univ. of Melbourne  
2007-2011 ARC Federation Fellow, Howard Hughes International Scholar  
School of Botany, Univ. of Melbourne  
2002 -6 ARC Professorial Fellow, School of Botany, Univ. of Melbourne  
2000-2010 Howard Hughes International Scholar  
1996-2001 Associate Professor & Reader, School of Botany, Univ. of Melbourne  
1995 Scientist, Institute for Marine Biosciences, National Research Council,  
Halifax, Canada  
1991-1994 ARC Senior Research Fellow, School of Botany, Univ. of Melbourne  
1990 Research Fellow, School of Botany, Univ. of Melbourne  
1986-1989 ARC Queen Elizabeth II Fellow, with Professor A. Clarke,  
Plant Cell Biology Research Centre, Univ. of Melbourne  
1984-1986 Post-Doctoral Fellow, Universität Münster, Germany.

### Current Affiliations

**Fellow** Australian Academy of Sciences (2005-) [www.science.org.au/](http://www.science.org.au/)  
**Convener** Australia/Europe Malaria Research Cooperative (2009-) [www.ozemalar.org](http://www.ozemalar.org)  
**Fellow** Australian Society for Parasitology (2014-) [www.parasite.org.au](http://www.parasite.org.au)  
**Fellow** American Academy of Microbiology (2015-) [www.academy.asm.org](http://www.academy.asm.org)

### Scientific honours, awards & prizes

1979 McBain Research Scholarship in Botany, University of Melbourne  
1979 & 80 Selected to participate in two Australian National Antarctic Research Expeditions  
1980-4 Commonwealth Postgraduate Research Award, Australian Federal Government  
1983 Best Student Paper Award, 6<sup>th</sup> Australian Society for Phycology & Aquatic Botany Meetings  
1986 Queen Elizabeth II Fellow, Australian Research Council  
1987 Outstanding Young Botanist Grant, International Botanical Congress Committee, Berlin  
1989 Best Poster Prize, Australian & New Zealand Society for Cell Biology Meeting, Melbourne  
1990 Goldacre Medallist, Award for Scientific Excellence, Australian Plant Physiology Society  
1991 Senior Research Fellow, Australian Research Council  
1998 Frederick White Prize, Australian Academy of Science  
1998 Elected Associate of Canadian Inst. of Advanced Research (CIAR) Program in Evolutionary Biology  
2000 Howard Hughes International Research Scholar, Howard Hughes Medical Institute, USA  
2001 David Syme Research Prize, Best Research by Australian scientist beneath the rank of full Professor  
2002 Full Professorial Fellow, Australian Research Council  
2002 Miescher-Ishida Prize, International Society of Endocytobiology  
2003 Woodward Medallist, Best Research of the Year, University of Melbourne  
2005 Fellow, Australian Academy of Sciences  
2005 Howard Hughes International Research Scholar, Howard Hughes Medical Institute, USA  
2006 Julian Wells Medallist, Lorne Genome Conference  
2007 Federation Fellow, Australian Research Council  
2009 Royal Society of Victoria Research Medallist, Scientific Research in Biological Sciences  
2009 Ramaciotti Medallist, Excellence in Biomedical Research, Ramaciotti Foundation  
2014 Fellow, Australian Society of Parasitology  
2015 Fellow, American Academy of Microbiology  
2017 Laureate Professorial Fellow, Australian Research Council  
2018 Woodward Medallist, Best Research of the Year, University of Melbourne  
2019 Ralph Slatyer Medallist, Research School of Biological Sciences, Australian National Univ.

## Most important positions of scientific trust held

- President of the International Society of Evolutionary Protistology (ISEP) 2005-2006
- Invited by the Nobel Foundation to make nominations (two successful) for the Nobel Prize in Chemistry (2002-2010)
- Invited by the Japan Society for Promotion of Science to make nominations for the International Prize for Biology (2006)
- Invited by Royal Swedish Academy of Sciences and the Crafoord Foundation to make nominations for the Crafoord Prize in Biosciences 2015
- Chair of selection committee (Plant Sciences & Microbiology) for Australian Academy of Sciences (2007-2011)
- Convener of Australia/Europe Malaria Research Cooperative [www.ozemalar.org](http://www.ozemalar.org)
- International Scientific Advisory Board, Wellcome Centre for Molecular Parasitology, Glasgow, UK

## Stewardship of the literature

- Editorial Board *Microorganisms* (2013-)
- Editorial Board *Protist Genomics* (2013-)
- Associate Editor *Marine Genomics* (2009-2012)
- Associate Editor *Genomic Biology & Evolution* (2009-)
- Editorial Board *Journal of Phycology* (2012-14)
- Editorial Board *Biology Image Library, BioMed Central* (2005-2014)
- Editorial Board *European Journal Phycology* (2000-2010)
- Associate Editor *Molecular Biology & Evolution* (1999-2008)
- Editorial Board *Today's Life Sciences* (1998-2003)

## Mentoring

I have trained 21 postgraduate students (primary supervisor for 17) and 17 postdoctoral fellows. My mentees have received numerous prestigious awards, and nearly all of them now lead their own research teams at renowned Australian and international universities or companies. I have lectured in 1<sup>st</sup> year biology and biomedicine at University of Melbourne since 1982. My student ranking for 1<sup>st</sup> year biomedicine in 2018 was 4.73 out of 5.

## Grants received

I secured my salary from the Australian Research Council from 1986 to 2022 (with a single 5-year gap) working my way up through a QEII Fellowship, Senior Research Fellowship, Professorial Fellowship, Federation Fellowship, and a Laureate Fellowship. I have had three consecutive, 5-year Program Grants from the National Health & Medical Research Council (NHMRC), nine Project Grants from the NHMRC, and eleven Discovery Projects from the ARC (continuous since 1986). I have also had two 5-year Howard Hughes Medical Institute International Scholar Grants and an EU Framework Program 7 consortium grant (€12m) with 45 European, African and Indian malariologists. I have raised \$43 million dollars in externally funded grants listed as a PI in the last 5 years.

## Publications and impact (full list of papers and PDF files available at [www.geoffmcfadden.com](http://www.geoffmcfadden.com))

I have authored eight papers in *Nature*, four papers in *Science*, eleven papers in *PNAS*, seven papers in *Current Biology*, three papers in *EMBO J*, and one paper in *Cell*. I have published 251 papers. My papers have been cited >21,700 times by other authors (Google Scholar), and I have 48 papers with more than 100 citations including seven with >400, plus the malaria parasite genome paper with >4,000 citations. My papers average 86 citations each, and my Google Scholar *h*-index is 74. My papers featured as the journal cover illustration 21 times. I am ranked 12th in the world for 'malaria' and 5th in the world for 'symbiosis' on Google Scholar. I am in the 98th percentile of 15 million ResearchGate subscribers.

## Originality and depth of my research effort

I discovered that malaria parasites are related to plants. I was the first to identify a structure known as the *apicoplast* in malaria parasites [McFadden, *Nature* 1996]. Apicoplasts are evolutionary homologues of plastids, which are the site in plants and algae where photosynthesis occurs. My discovery revealed that malaria parasites evolved from photosynthetic predecessors but had lost their photosynthesis and switched to a parasitic lifestyle. Not only did my discovery overturn everything what we knew about parasite origins, it reoriented our approaches to fighting the diseases caused by these parasites. Google Scholar now lists 9,680 papers referring to the *apicoplast*.

Malaria is a major global health problem. More than 200 million people in ~100 countries get malaria every year. Nearly half a million of these victims succumb and die annually. There is no effective malaria vaccine, and drug resistance severely hampers our ability to control the disease. I recognised that the apicoplast I identified in malaria parasites is an ideal drug target, and my subsequent research focused on discovering drugs that kill malaria parasites by inhibiting the plastid. One such drug, doxycycline, is now given to millions of people to control malaria. Doxycycline targets the gene (plastid 16S small subunit ribosomal RNA) first localised by me 23 years ago. Thus, my research has not only revolutionised our understanding of deadly parasites but has contributed to saving many thousands of lives.