

## Curriculum Vitae

**Name** Geoffrey Ian McFadden *PhD FAA*

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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

2007-	ARC Federation Fellow, Howard Hughes International Scholar School of Botany, University of Melbourne
2002 -6	ARC Professorial Fellow, Howard Hughes International Scholar School of Botany, University of Melbourne
1996 - 2001	Associate Professor & Reader, Howard Hughes International Scholar School of Botany, University of Melbourne
1995	Guest Scientist Institute for Marine Biosciences, National Research Council Halifax, Canada
1991-1994	ARC Senior Research Fellow School of Botany, University of Melbourne
1990	Research Fellow, Grade 2 with Professor J. Pickett-Heaps, School of Botany, University of Melbourne
1986-1989	ARC Queen Elizabeth II Fellow, with Professor A. Clarke, Plant Cell Biology Research Centre, University of Melbourne
1984-1986	Post-Doctoral Fellow, with Professor M. Melkonian, Botanisches Inst, Universität Münster, Münster, Germany.

### Affiliations

**Associate** - Canadian Institute for Advanced Research, Program in Evolutionary Biology [www.ciar.ca](http://www.ciar.ca)  
**International Research Scholar** – Howard Hughes Medical Institute [www.hhmi.org/grants/international/](http://www.hhmi.org/grants/international/)  
**Faculty member** – Biology of Parasitism Course, Woods Hole Marine Biology Lab, 2001-2006, [www.mbl.edu](http://www.mbl.edu)  
**Past President** – International Society of Evolutionary Protistology (2005-6)  
**Fellow** – Australian Academy of Sciences [www.science.org.au/](http://www.science.org.au/)

### Most important scientific honours & prizes

1979	McBain Research Scholarship in Botany.
1979/80	Selected to participate in two Australian National Antarctic Research Expeditions.
1980-4	Commonwealth Postgraduate Research Award
1983	<i>Best Student Paper Award</i> VIth Australian Society for Phycology & Aquatic Botany Meetings.
1986	Queen Elizabeth II Research Fellowship Award (3 years tenure)
1987	Travel grant for the "Outstanding Young Botanist", from the International Botanical Congress Committee, to attend the XIVth IBC in Berlin, Germany.
1989	Best Poster Prize, Australian & New Zealand Society for Cell Biology Meetings (Melbourne).
1990	Goldacre Medallist (Australian Plant Physiology Society's Award for Scientific Excellence)
1991	Awarded Australian Research Council Senior Research Fellowship (5 years tenure)
1998	Awarded Australian Academy of Science's Frederick White Prize
1998	Elected as an Associate of Canadian Inst. of Advanced Research (CIAR) Programme in Evolutionary Biology
2000 & 2005	Howard Hughes International Research Scholar
2001	David Syme Research Prize (Best Australian Research in previous 2 years by scientist beneath the rank of full Professor)
2002	Australian Research Council Full Professorial Fellowship (5 years tenure)
2002	Miescher-Ishida Prize, International Society of Endocytobiology
2003	Woodward Medal (best paper of the year, Univ. of Melbourne)
2005	Fellow – Australian Academy of Sciences
2006	Julian Wells Medalist, Lorne Genome Conference
2007	Australian Research Council, Federation Fellowship

### Most important scientific positions of trust held

- Delegate on DITARD Biotechnology Collaboration Mission to France (1989)
- Referee numerous competitive grants in the ARC scheme, Wellcome Trust, US Dept of Agriculture (USDA) and NSF (USA)
- Referee numerous papers for various major international journals. Typical load is about 30 papers per year. (eg. Nature, Science, Proc Natl. Acad Sci USA, Mol. Micro. Molecular & Biochem Parasitol, J Cell Biol, Appl Phycology, Aust J Plant Physiol, Eur J Phycol, Eur J Cell Biol, Histochemical J, Int. J. Parasitol, J. Cell Biol., J Cell Sci, J Histochem & Cytochem, J Molecular Evol, J Phycology, Mol. Biol. Evol., Nova Hedwigia, Phycologia, Plant Physiol, Acta Tropica, Drug Review Update)
- Organise workshops on advanced application of microscopy and molecular biology for scientific societies
- Host visits by researchers from Australia and overseas (Germany, Japan, France) to learn *in situ* hybridization techniques in which I specialize.
- Present public education lectures on biotechnology in various forums.
- Consultant to AMRAD (Australian Medical Research & Development Organisation) on Natural Products Resources.
- Invited participant to "Grouputer" medical/scientific forum for the Multiple Sclerosis Society of Victoria
- Councilor-at-large for International Society of Evolutionary Protistology (ISEP) 1996-1998
- Newsletter editor for International Society of Evolutionary Protistology (ISEP) 1998-2002
- President Elect for International Society of Evolutionary Protistology (ISEP) 2002-2004
- President for International Society of Evolutionary Protistology (ISEP) 2005-2006
- Faculty member - Molecular Evolution Summer Course, Woods Hole Marine Biology Lab, 1997
- Faculty member – Biology of Parasitism, Summer Course, Woods Hole Marine Biology Lab, 2001-2006
- International Scholar for Howard Hughes Medical Institute (2000-2010)
- Invited to make nominations to Nobel Foundation for Nobel Prize in Chemistry (2002-2009)
- Invited to make nominations to the International Prize for Biology (2006)
- Member of the Canada Research Chairs Program College of Reviewers
- Management Committee for ARC & NHAMRC Network for Parasitology
- Chair of selection committee (Plant Sciences & Microbiology) for Australian Academy of Sciences (2007-2011)

### Stewardship of the Literature

- Associate Editor – Marine Genomics (2009-)
- Associate Editor - Genomic Biology & Evolution (2009-)
- Associate Editor - Molecular Biology & Evolution (1999-2008)
- Editorial Board - Biology Image Library, BioMed Central (2005-)
- Editorial Board - Today's Life Sciences (1998-2003)
- Editorial Board - European Journal Phycology (2000-)

I am associate editor for three journals and an online image library. In 2008 I reviewed 56 papers either in my editorial capacity or as an *ad hoc* reviewer for various journals. My key role was with *Molecular Biology & Evolution*, which is the leading evolution journal (impact factor 6.0). I had editorial responsibility for 30 *MBE* papers per year. I have now stepped down from *MBE* moved to the editorial boards of two new genomics journals. I am also a member of the editorial boards for the *European Journal of Phycology*, *Journal of Eukaryotic Microbiology* and the *BioMedCentral Image Library*. I review *ad hoc* for a wide range of journals and have handled 26 manuscripts in the past 12 months for *Nature*, *Science*, *Cell*, *PNAS*, *Mol Micro*, *Molecular & Biochem Parasitol*, *J Phycol* and *J Cell Biol*.

#### Invited seminars, lectures, keynote addresses & plenary lectures (2004-9)

- Invited Lecture, Molecular Approaches to Malaria, Lorne Feb 2004
- Invited Lecture, Current Trends in Drug Discovery Research, Lucknow India Feb 2004
- Invited Seminar, International Centre for Genetic Engineering & Biotechnology Delhi India 2004
- Invited Seminar, Botany Dept, LaTrobe Univ, invited lecture May 2004
- Invited Lecture, Systematics Group, Museum of Victoria, Melbourne, July 2004
- Invited Lecture, Gene Technology Access Centre, Secondary School Teachers' Forum, WEHI Melbourne, July 2004
- Invited Lecture, Science Summer School, University of Melbourne, Dec 2004
- Invited Lecture, Japanese Academy of Science, Emperor's Prize Symposium Dec 2004
- Invited Symposium Lecture, International Photosynthesis Congress, Montreal, Canada (declined)
- Invited Symposium Lecture, Ehrlich Symposium, Nürnberg, Germany (declined)
- Invited Lecture, Biology of Parasitism Course, USA Aug 2004
- Invited Seminar, Tokyo University, School of Biochemical Medicine, Japan Dec 2004
- Opening Lecture, FEBS Chloroplast & Mitochondria Conference, Bavaria March 2005
- Invited Lecture, World Summit of Evolution, Symposium lecture Galapagos June 2005
- Invited Lecture, HHMI Conference Mexico 2005
- Invited Lecture, The Origin of Plastids & Mitochondria: Mereschkowsky Commemorative Marburg Germany 2005 (declined)
- Symposium Lecture, ESF-EMBO Symposia -Comparative genomics of eukaryotic microorganisms Costa Brava Spain (declined) 2005
- Invited Lecture, Parasitology Network Meeting, Symposium Lecture (WEHI July 2005)
- Invited Lecture, Planning for the Future: Achieving the UN Millennium Goals. *UniSummit* University of Melbourne, 2005
- Invited Lecturer, Victorian Certificate of Education Teachers' Forum, University of Melbourne 2005
- Julian Wells Medal Lecture, Lorne Genome Conference, Feb 14<sup>th</sup> 2006
- Invited Seminar, Walter & Eliza Hall Inst. Of Medical Research, April 19<sup>th</sup> 2006
- Invited Seminar, Harvard School of Public Health, June 21<sup>st</sup> 2006
- Invited Lecture, Biology of Parasitism Course, Woods Hole, June 23<sup>rd</sup> 2006
- Invited Symposium Lecture, Gordon Research Conference on Parasitology, Rhode Island USA, June 23<sup>rd</sup> 2006
- Grant proposal presentation, Medicines for Malaria Venture, Washington DC July 11<sup>th</sup> 2006
- Plenary Lecture, Combio meeting of Australian Biochemistry and Molecular Biology Society, Brisbane September 2006 (declined)
- Invited Seminar, Univ. of Technology Sydney, July 18<sup>th</sup> 2006
- Invited Lecture, ARC/NHMRC Parasitology Conference, Gold Coast, July 2006
- Invited Seminar, John Curtin School of Medical Research, Nov 2<sup>nd</sup> 2006
- Invited Lecture, Science Café, Heart of Philosophy Society, Oct 16<sup>th</sup> Melbourne 2006
- Panel Member, Media Forum, "Scientists and the Media – Partnership or Parody?" Univ of Melbourne, Nov 30<sup>th</sup> 2006
- Occasional Address, Graduation Ceremony, Univ. of Melbourne, Dec 19<sup>th</sup>, 2006
- Invited Lecture, New Frontiers in Cellular Interactions in Cnidarian/Dinoflagellate Symbioses", Heron Is, Australia, Jan 2007 (declined)
- Invited Lecture, Federation of European Biochemical Societies, Chloroplast & Mitochondria Workshop, Italy March 2007
- Keynote Lecture, BioMalPar (European Union Malaria Research Network, EMBL, Heidelberg 10 - 12 April 2007
- Invited Lecture, Gordon Research Conference on Protein Organelle Targeting, Italy March 2007
- Invited speaker, Molecular Approaches to Malaria 2008, Lorne Aust Feb 5<sup>th</sup> *The relict plastid of malaria parasites*
- Invited Seminar, Genetics Dept, Univ of Melbourne, 4<sup>th</sup> March 2008 *The relict plastid of malaria parasites*
- Plenary Lecture, Australian Society for Parasitology & ARC/NHMRC Research Network for Parasitology, July 9<sup>th</sup> Glenelg *The relict plastid of malaria parasites*
- Invited Seminar, Peter Macallum Cancer Research Centre Melbourne Australia, July 31<sup>st</sup> *Can we treat malaria with herbicides?*
- Evening Presenter, Science Issues Cafe, 4<sup>th</sup> August 2008. Carlton *Malaria: the plant connection.*
- Invited Seminar, Evolution: the Event, Melbourne Australia, Feb 2009 *Can we treat malaria with herbicides?*
- Invited Seminar, Evolution: the Event, Melbourne Australia, Feb 2009 *Can we treat malaria with herbicides?*
- Invited Seminar, School of Botany, Univ of Melbourne Australia, march 2009 *Mosquitoes in Botany?*
- Invited Seminar, Inst. Molecular Biosciences, Univ Queensland, Sept 11 2009. *The relict plastid of malaria parasites.*
- Plenary Speaker, 19<sup>th</sup> St Vincent's & Mater Health Sydney, Research Symposium, Garvan Inst. 18<sup>th</sup> Sept 2009. *Malaria: the plant connection.*

- Invited speaker, Organelle Biogenesis & positioning in plants, Biochemical Society, Univ Chester 16-18 Dec 2009, *The relict plastid of malaria parasites*.
- Invited Speaker, Joint Symposium German Academy of Sciences Leopoldina, Berlin Sept 2009, *The relict plastid of malaria parasites: origin, biogenesis and function*.
- Invited Seminar, School of Botany, Univ of Melbourne Australia, march 2009 *Mosquitoes in Botany?*

### Conference organizing

- Organized symposium entitled Tree of Life for International Genetics Congress Melbourne 2002. Liaise with editor of *Science* re production of special Tree of Life issue to coincide with symposium.
- Organized symposium entitled “Genomics of chloroplasts and mitochondria” for Combio Congress Melbourne 2003
- Member local organizing committee for Molecular Approaches to Malaria Lorne 2004 (Key responsibility - web site implementation).
- Organizing committee for XV International Society of Protistology Meeting Melbourne Jan 2005
- Organizing committee for ARC/NHMRC Research Network for Parasitology Conference July 2005
- Organizing committee for the 2nd ARC/NHMRC Network for Parasitology Meeting, Surfer’s Paradise (2006).
- Member local organizing committee for Molecular Approaches to Malaria Lorne 2008

### Coverage of my research in popular media and textbooks

Media coverage of the work includes a front page story in *The Australian* (June 1<sup>st</sup> 1996), feature articles in *The Bulletin*, interviews on *Radio National* (May 31<sup>st</sup> 1996) and items on the evening television news on all four free-to-air stations for subsequent breakthroughs (October 3<sup>rd</sup> 2002 and January 31<sup>st</sup> 2003). My work is also featured in the following textbooks: *Recombinant DNA* 2<sup>nd</sup> edition (Watson, J et al 1992 pg 448), *Biology* (Knox et al 2004), *Algae* (Graham LE & Wilcox LW 2000 pgs 135, 138, 149, 178), *Biology Two* 4th Edition. (Evans et al 2005 Box 17.7), *Phycology* 3<sup>rd</sup> edition (Lee RE 1999 pg 377), and *Discovering Genomics, Proteomics and Bioinformatics* 2<sup>nd</sup> ed. (Campbell AM and Heyer LJ 2006).

### National and local responsibilities

- Management committee of ARC/NHMRC Australian Parasitology Network
- Program director (2004) for NHMRC Program in “Molecular Basis of Host/Pathogen interactions. 2005/6
- Chair of selection committee (Plant Sciences & Microbiology) for Australian Academy of Sciences (2007-9)

### Departmental responsibilities

- Supervision of three research assistants
- Supervision of five postdoctoral fellows
- Supervision of one Fullbright Fellow
- Present lectures in 600-131, 600-132, 606-205 and 606-302
- Supervise practical classes in first year Biomedical Biology 600-131, 600-132 and 606-302
- Supervise laboratory placement for 521-308 Genome Science (B. BioMed)
- Chair of Departmental Equipment Committee
- Chair of Departmental Microscopy Committee
- Chair of Botany Safety Committee
- Research & Postgraduate Studies Committee
- Dept Grant Shepherd (assist staff with grant proposals)

### Postgraduate supervision:

<i>Student</i>	<i>status</i>	
Dr Frank Udovicic (joint with Prof Ladiges_	PhD 1995	Now PRF at Royal Botanical Gardens
Dr Paul Gilson	PhD 1997	Now RF at Burnett Institute
Dr James Deane	PhD 1998	Now RF at Monash Medical Centre
Dr Ross Waller	PhD 2000	Now Lecturer (level C) U of Melbourne
Dr Louise Phillips (joint with Dr Kraft)	PhD 2002	
Dr Stuart Ralph	PhD 2003	Now Lecturer (level C) Bio21
Dr Bernado Foth	PhD 2003	Now postdoc at Nanyan U. Singapore
Mr Chris Tonkin	PhD 2004	Now CJ Martin Fellow at WEHI
Mr Giel van Dooren	PhD 2006	Now CJ Martin Fellow at U Georgia
Mr Ming Kalanon	completed 3rd year of PhD project	
Ms Liting Lim	completed 3rd year of PhD project	
Ms Catherine Kirby	completed 2nd year of PhD project	

Mr Russ Johnson

MSc 2009

Now studying Medicine at U Minnesota

**Postdoctoral fellows supervised and current status**

1997-8	Dr David Orlovich (postdoc on ARC funds now Lecturer, University of Otago)
1997	Dr Claudia Hoffman (postdoc on ARC funds now working in industry – Eppendorf Pty Ltd)
1998	Dr Patrick Keeling (postdoc recruited on NSERC Canada funds) now a Burroughs Wellcome Young Investigator, UBC Canada
1999	Dr Agnes Germet (postdoc on ARC funds, now Tenured Scientist, CNRS France)
2002-	Dr C Dean Goodman (postdoc recruited from Stanford on HHMI funds now in McFadden lab)
2002-9	Dr Kylie Mullin (postdoc recruited from McConville lab, now passed away)
2002-9	Dr Tim Spurck (postdoc recruited from Pickett-Heaps lab, now passed away)
2005	Dr Oliver Kilian (Postdoctoral Fellow recruited from Germany on DAAD funds, now at Stanford University)
2005	Dr Ellen Nisbet (postdoc recruited from Cambridge, now Lecturer at Univ of Adelaide)
2005-8	Dr Noriko Okamoto (postdoc recruited from Tsukuba University on Japan Society for Promotion of Science funds, now in Keeling Lab at UBC)
2006	Dr Attila Regos (postdoc recruited from Swiss Tropical Institute on Swiss National Research Council funds, now with Merck)
2008-	Dr Cyrille Botte (postdoc recruited from Grenoble on Endeavour Fellowship & Marie Curie Award)
2009-	Dr Giel van Dooren (postdoc returning from Univ Georgia on CJ Martin Fellowship)

**Grants Received (recent)**

I secured my salary from competitive funds from 1986 to 2011. I currently hold three five year grants (ARC, NHMRC & HHMI), a three year grant (ARC) and a five year EU FP7 consortium grant (€12m). All up, I have funds supporting the lab, infrastructure and salaries totaling AUD\$ 1,563,000 per annum.

	Year	Amount (AUD)
ARC, Ladiges & McFadden	1994	\$64,000
<i>Phylogeny of Callistemon &amp; Melaleuca.</i>	1995	\$61,403
	1996	\$61,000
Science Faculty, Univ of Melbourne, McFadden Funds for Automated DNA Sequencer	1995	\$160,000
ARC, McFadden <i>Localisation of a novel genome in malaria parasites</i>	1995	\$20,000
ARC, McFadden <i>Complete nucleotide sequences of a miniaturized eukaryotic genome.</i>	1996	\$61,000
	1997	\$61,000
	1998	\$61,000
National Science & Engineering Council (NSERC) Canada Cavalier-Smith, Douglas, Maier & McFadden <i>Sequencing the smallest eukaryotic genomes</i>	1996-8	\$750,000
ARC Grant McFadden <i>Function of the plastid in parasites of humans</i>	1997	\$17,000
Medical Research Council (Canada) Fellowship Grant Keeling & McFadden <i>Function of the plastid in parasites of humans</i>	1996	\$28,590
National Science & Engineering Council (NSERC) Canada Keeling & McFadden, <i>Function of the plastid in parasites of humans</i>	1997	\$27,000
ARC International Research Fellowships Scheme McFadden & Hofmann, <i>Protein targeting in algae</i>	1997	\$70,469
ARC Grant, McFadden & Cowman	1998-2000	\$75,000/year

ARC International Research Fellowships Scheme McFadden & Germot <i>Identifying the mitochondrion of Microsporidia</i>	1998	\$62,309
Science Faculty, Univ of Melbourne, McFadden Funds for high sensitivity digital camera	2000	\$35,000
HHMI, McFadden The relict chloroplast of malaria parasites	2000-2004	\$141,000/year
ARC, McFadden Biogenesis of the relict chloroplast in the malaria parasite	2001-	\$70,000
NHMRC McFadden & McConville Fatty acid biosynthesis in the relict chloroplast of malaria parasites	2001	\$130,000
ARC (Professorial Fellowship), McFadden Post-genomic investigation of the relict plastid and mitochondrion of malaria parasites	2002-2006	\$140,000/year
NHMRC (Program Grant), Cowman Batchelor Billman-Jacobe, Brown, Crabb, Handmann, McConville, McFadden, Schofield & Speed. Molecular basis of host-pathogen interactions	2002-2006	\$2,300,000/year
Rowden White Foundation (UoM), McFadden, Confocal microscope facility support	2003	\$130,000
ARC, McFadden & Tilley, Parasitology/malaria network seed funding	2004	\$20,000
NHMRC (Program Grant), Cowman Brown, Crabb, Handmann, McConville, McFadden, Schofield & Speed. Host parasite interaction: disease, pathogenesis & control	2006-2010	\$2,580,000/year
HHMI, McFadden, The malaria parasite apicoplast as a drug target	2005-2009	\$128,000/year
ARC, Drug targets in malaria parasites, Federation Fellowship, McFadden	2007-2011	\$300,000/year
UoM, Federation Fellowship, McFadden	2007-2011	\$700,000/year
ARC, McFadden & Waller, Infrakingdom Alveolata, ARC, Discovery Project Grant	2006-2010	\$95,000/year

## Publications and impact

### Impact

Since entering the field 12 years ago, I have established myself as a world-renowned malariologist. I have made very high profile contributions focused around the discovery of a relict chloroplast in malaria parasites and have expanded into the area of mitochondrial metabolism, evolution and molecular genetics of malaria parasites. I have authored six papers in *Nature*, three papers in *Science*, three papers in *PNAS* and three papers in *EMBO J* on malaria-related topics. I have published 167 papers. My publications have been cited 6,425 times by other authors (ISI Web of Science, June 2009), and I have 14 papers with more than 100 citations including two with >200 citations, one with >300 citations and one with 1,365 citations. My papers average 49 citations each over my career, and my *h*-index is 42. I have published with 237 co-authors from 12 different countries in 63 different institutes, demonstrating a highly effective ability to collaborate at home and abroad. I am asked regularly to write comment pieces and reviews for top journals including *Nature*, *PNAS*, *J Cell Biol.* and *Current Biology*.

My papers have been featured as the journal cover illustration twelve times [*Adv Bot Res* 19 1993, *Today's Life Sci* 9(12) 1997, *Phycol Res* 47(1) 1999, *Genome Biology* 1(4) 2000, *Today's Life Sci* 14(8) 2002, *Nature* 414(6906) 2002, *Mol Biochem Parasitol* 137(1) 2004, *Curr Issues Mol Biol* 7(1) 2005, *Mol Micro* 57(2) 2005), *Mol Microbiol* 61 2006, *Trends Parasitol* 23 2007, *Int. J Parasitol* 2006]. Media coverage of our work includes a front page story in *The Australian* (June 1<sup>st</sup> 1996), feature articles in *The Bulletin*, interviews on *Radio National* (May 31<sup>st</sup> 1996) and items on the evening television news on all four free-to-air stations for subsequent breakthroughs

Edition. (Evans et al 2005 Box 17.7); *Phycology* 3<sup>rd</sup> edition (Lee RE 1999 pg 377); *BIOLOGY: The dynamic science*, P.J. Russell, et al., Editors. 2008, Brooks/Cole Cengage Learning, Belmont CA. p. 571; and *Discovering Genomics, Proteomics and Bioinformatics 2<sup>nd</sup> ed.* (Campbell AM and Heyer LJ 2006).