

CURRICULUM VITAE

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Place of birth: Melbourne, Australia

Citizenship: Australia and USA

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Citations: 19839 (not counting patents) **H-factor:** 71

Education:

<u>Year</u>	<u>Degree</u>	<u>Field of Study</u>	<u>Institution</u>
1982	M.B., B.S.	Medicine	The University of Melbourne, Victoria, Australia
1988	D.P.M. (Dipl. Psychological Medicine)	Psychological Medicine	The University of Melbourne, Victoria, Australia
1989	F.R.A.N.Z.C.P.	Psychiatry	Fellow, Royal Australian and New Zealand College of Psychiatrists
1993	Ph.D.	Pathology	The University of Melbourne, Victoria, Australia

Postdoctoral Training:

<u>Year</u>	<u>Title</u>	<u>Specialty/Discipline</u>	<u>Institution</u>
1983	Intern	General medicine, general surgery	Austin Hospital, Heidelberg, Victoria, Australia
1984-1986	Registrar	Psychiatry	Willsmere and Austin Hospitals, Victoria, Australia

1986-1987	Senior registrar	Psychiatry	Royal Melbourne Hospital, Victoria, Australia
1988-1989	Senior registrar	Psychiatry	Royal Park Hospital, Victoria, Australia
1988-1989	Postdoctoral research fellow	Neuroendocrinology	Mental Health Research Institute of Victoria, Melbourne, Australia
1989-1992	National Health and Medical Research Council Postgraduate Medical Scholar	Neuropathology	The University of Melbourne, and Neuropathology laboratory, Mental Health Research Institute of Victoria
1992-1993	Postdoctoral research fellow	Neurology	Laboratory of Genetics and Aging, Massachusetts General Hospital, Boston

Academic Appointments:

<u>Year</u>	<u>Academic title</u>	<u>Institution</u>
1988-1989	Research Fellow in Psychiatry	University of Melbourne, Victoria, Australia.
1992-1993	Research Fellow in Neurology	Harvard Medical School, Boston, MA.
1993-1994	Instructor in Neurology	Harvard Medical School, Boston, MA.
1995-1999	Assistant Professor of Psychiatry	Harvard Medical School, Boston, MA.
1999-2004	Associate Professor of Psychiatry	Harvard Medical School, Boston, MA.
1999-2004	Honorary Principal Research Fellow with the title of Associate Professor of Psychiatry and Pathology	University of Melbourne, Victoria, Australia.
2004	Federation Fellow	Australian Research Council (ARC)
2005-	Lecturer in Psychiatry	Harvard Medical School, Boston, MA.
2005-	Professorial Fellow in Pathology	University of Melbourne, Victoria, Australia.
2005-	Honorary NHMRC Research Fellow	Mental Health Research Institute of Victoria, Australia
2005-	Adjunct Professor of Neuroscience	Cornell University Medical College, New York
2009-	Elected Fellow	The Australian Academy of Technological Sciences and Engineering (ATSE)
2011-	Australia Fellow	National Health and Medical Research Council (NHMRC), Australia
2013-	Kenneth Myer Fellow	Florey Institute of Neuroscience and Mental Health, Australia

Hospital Appointments:

<u>Year</u>	<u>Hospital title</u>	<u>Hospital</u>
1989-1992	Visiting associate in psychiatry	Royal Melbourne Hospital, Victoria, Australia
1993-2004	Clinical assistant in psychiatry	Massachusetts General Hospital, Boston, MA
1993-1996	Clinical assistant in neurology	Massachusetts General Hospital, Boston, MA
1995-1999	Assistant Psychiatrist	McLean Hospital, Belmont, MA
1999-2004	Associate Psychiatrist	McLean Hospital, Belmont, MA
2005-	Courtesy Staff appointment in Psychiatry	Massachusetts General Hospital, Boston, MA
2005-	Director of Research, and Neuropsychiatrist, Delmont Memory Clinic	Melbourne, Australia

Other Professional Positions and Major Visiting Appointments:

<u>Year</u>	<u>Position/ title</u>	<u>Institution</u>
1995-1998	Visiting Scientist	Massachusetts Institute of Technology, Cambridge, MA.
1996- 2000	Visiting Senior Scientist	Mental Health Research Institute of Victoria, Australia
1997- 2012	Founding scientist and scientific advisory board member	Prana Biotechnology Ltd, Melbourne, Australia
1998-2004	Director	Laboratory for Oxidation Biology, Massachusetts General Hospital, Boston, MA
1999-2003	Founder and Scientific Consultant	Cogstate Ltd, Melbourne, Australia
2004-	Head, Oxidation Biology Laboratory	The Florey Institute of Neuroscience and Mental Health
2006-	Co-Director, Biomarker Development	The Australian Imaging, Biomarkers and Lifestyle Study of ageing (AIBL)
2007-	Founder, Chairman and Chief Scientific Officer	Eucalyptus Biosciences Ltd, Melbourne, Australia; Eucalyptus Ltd, San Francisco, CA, USA
2011-12	Member, Scientific Advisory Board	Adeona Pharmaceuticals Inc., USA
2011-	Chief Scientific Officer	Brighton Biotech, Ltd, Brighton, MI, USA
2011-	Chief Scientific Officer	Cooperative Research Centre for Mental Health, Parkville, VIC, Australia

2012-	Member, Advisory Council	Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART)
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Major Administrative Leadership Positions:

<u>Year</u>	<u>Position/ title</u>	<u>Institution</u>
2003-	Ad hoc member	CDIN (Cell Death in Neurodegeneration) Study Section, NIH.
2008-	Reviewer	Loan Review Panel, NIH

Committee Service:

<u>Year</u>	<u>Position/ title</u>	<u>Institution</u>
2000-2004	Member	Genetics and Aging Research Unit Executive Committee
2002-2004	Member	Department of Psychiatry, MGH, Research Committee
2006-	Executive Committee Member	The Florey Institute of Neuroscience and Mental Health (formerly MHRI)

Professional Societies:

<u>Year</u>	<u>Society Name</u>	<u>Role</u>
1984-1992	Australian Writer's Guild	Member
1989-1992	Australian Medical Association	Member
1989-	Royal Australian and New Zealand College of Psychiatrists	Fellow
1993-	American Academy for the Advancement of Science	Member
1993-	Society for Neuroscience	Member
1995-	American Medical Association	Member
2003-	The American Society for Biochemistry and Molecular Biology	Member
2009-	The Australian Academy of Technological Sciences and Engineering	Fellow

Editorial Activities: (Ad hoc reviewer for 42 journals)

<u>Year</u>	<u>Role</u>	<u>Name of Journal</u>
1992-	Ad hoc reviewer	Journal of Biological Chemistry

1993-	Ad hoc reviewer	Biochemistry
1994-	Ad hoc reviewer	Journal of Neurochemistry Neurochemistry International
1994-	Ad hoc reviewer	Brain Research Brain Research Bulletin
1998-	Ad hoc reviewer	Archives of Neurology
1998-	Ad hoc reviewer	European Journal of Biochemistry
1998-	Ad hoc reviewer	European Journal of Clinical Investigation
1999-	Ad hoc reviewer	Journal of Structural Biology
1999-	Ad hoc reviewer	Cellular and Molecular Biology
1999-	Ad hoc reviewer	Journal of Alzheimer's Disease
1999-	Ad hoc reviewer	Archives of General Psychiatry
2000-	Ad hoc reviewer	Proceedings of the Royal Society
2000-2010	Associate Editor	Journal of Alzheimer's Disease
2000-	Ad hoc reviewer	Biological Psychiatry
2000-	Ad hoc reviewer	Proceedings of the National Academy of Sciences USA
2000-	Ad hoc reviewer	Nature Cell Biology
2000-	Ad hoc reviewer	Journal of Neuroscience
2000-	Ad hoc reviewer	Neurology
2000-	Ad hoc reviewer	Journal of Pharmacology and Experimental Therapeutics
2001-	Ad hoc reviewer	Neuroscience Letters
2001-	Ad hoc reviewer	New England Journal of Medicine
2001-	Ad hoc reviewer	Free Radical Research
2001-	Ad hoc reviewer	Nature Neuroscience
2002-	Ad hoc reviewer	Nature Medicine
2002-	Ad hoc reviewer	Journal of the American Chemical Society
2002-	Ad hoc reviewer	Science
2003-	Ad hoc reviewer	FASEB Journal
2003-	Editorial Board	Journal of Biological Chemistry
2003-	Ad hoc reviewer	Lancet

		The Lancet Neurology
		The Lancet Global Health
2003-	Ad hoc reviewer	American Journal of Pathology
2003-	Editorial Board	Drug Design Reviews
2003-	Ad hoc reviewer	Journal of Clinical Investigation
2003-	Ad hoc reviewer	Neurobiology of Aging
2003-	Ad hoc reviewer	Annals of Neurology
2003-	Ad hoc reviewer	EMBO Journal
2003-	Ad hoc reviewer	Drugs and Aging
2004-	Ad hoc reviewer	Neurobiology of Disease
2007-	Ad hoc reviewer	Journal of Neurology, Neurosurgery and Psychiatry
2007-	Ad hoc reviewer	PLoS Medicine
2007-	Editorial Board	PLoS ONE
2007-	Ad hoc reviewer	Angewandte Chemie
2008-	Ad hoc reviewer	Trends in Pharmacological Sciences (TIPS)
2008-	Ad hoc reviewer	Neuroimage: Clinical
2009-	Editorial Board	International Journal of Alzheimer's Disease
2009-	Editorial Board	The Scientific World Journal
2009-	Ad hoc reviewer	Journal of Molecular Neuroscience
2009-	Ad hoc reviewer	Brain Pathology
2010	Associate Editor	Frontiers in Neurodegeneration
2010-	Editorial Board	Neurotherapeutics
2011-	Senior Editor	Journal of Alzheimer's Disease
2011-	Editorial Board	Current Psychopharmacology
2013-	Editorial Advisory Board	Current Alzheimer Research

Current reviewer of Grant Applications: National Health & Medical Research Council (including Australia Fellowship assessor), Australian Research Council (ARC), Department of Veterans' Affairs, New Zealand Neurological Foundation, Alzheimer's Association, National Institute on Aging (NIA), Wellcome Trust, American Federation for Aging Research (AFAR), American Health Assistance Foundation (AHA), The Research Grants Council of Hong Kong, Alzheimer's Research Trust of Great Britain, Biotechnology and Biological Sciences Research Council.

Membership of NHMRC Project Grant Review Panels (GRP): Molecular Neuroscience (2007), Neurology and Brain Imaging (2008-9), NHMRC Research Fellowships Peer Review Panel (2009-11).

Judging panel: Centenary Institute Lawrence Creative Prize 2011.

Honours and Prizes:

<u>Year</u>	<u>Name of Award</u>
1986	Victorian Medical Postgraduate Foundation Research Award
1989-1992	National Health & Medical Research Council Postgraduate Medical Scholarship
1992-1993	Harkness Fellowship, Commonwealth Fund of New York.
1994	Organon Award for Psychiatric Research
1994	National Down Syndrome Society Scholars Award
1994-1995	Ellison Scholarship, Massachusetts General Hospital
1995-1998	Paul Beeson Physician Faculty Scholar in Aging
2000-2003	Alzheimer Association Senator Mark A. Hatfield Award for Clinical Research in Alzheimer's Disease
2003	Potamkin Prize, American Academy of Neurology
2004	Federation Fellow, Australian Research Council
2004	Zenith Fellow, Alzheimer's Association
2007	Bethlehem Griffiths Research Foundation Award in Neurology
2007	Flagship Fellow, CSIRO
2009	Fellow, The Australian Academy of Technological Sciences and Engineering
2010	The Royal Australian and New Zealand College of Psychiatrists Schering-Plough Senior Research Award
2010	NHMRC Senior Principal Research Fellowship
2011	NHMRC Australia Fellowship

Report of Funded and Unfunded Projects**Funding Information for PAST grants:**

<u>Year(s) funded</u>	<u>Role on project</u>	<u>Funding Source/Granting agency</u>	<u>Grant type and grant number</u>	<u>Title of the Grant</u>
1992-93	PI	Commonwealth Fund of New York	Harkness Fellowship	APP metabolism in Alzheimer's disease
1993-94	Co-PI	Molecular Geriatrics Corporation	Research Grant	The Role of Cerebral Zinc Metabolism in Alzheimer's disease
1994-96	PI	Alzheimer Association	Project Grant IIRG-94-110	The Role of Zinc in A β Amyloidosis

1995-2000	PI	NIH/NIA	Project Grant 5R29AG12686	The Role of Zinc in Alzheimer's disease Pathophysiology
1995-98	PI	International Life Sciences Institute	Research Grant	Zinc exposure: role in the induction of Alzheimer's disease
1995-98	PI	American Federation of Aging Research & Alliance for Aging Research	Paul Beeson Physician Faculty Scholars in Aging Research Program	Zinc exposure as a risk factor for Alzheimer's disease
1997-1999	PI	Prana Corporation	Project Grant	A β Redox Pathways
1998-2001	CI	NHMRC	Project Grant 981724	Alzheimer's disease amyloid: a corrupted antioxidant?
1999-2001	PI	American Health Assistance Foundation	Research Grant	Oxidation and zinc in models of Alzheimer's disease
2000-2005	PI	NIH/NIA	RO1AG12685	Brain metal interactions in Alzheimer's disease
2000-2003	PI	Alzheimer's Association	Senator Mark A. Hatfield Award for Clinical Research in Alzheimer's disease	A phase 2 clinical trial of a zinc/copper selective chelator for the treatment of Alzheimer's disease
2001-2003	PI	ALS Association	Research Grant	Glutathione supplementation in the treatment of ALS
2001-2005	PI	NH&MRC	Project Grant 145655	Interdiction of copper and zinc as a therapeutic for Alzheimer's disease
2001-2004	PI	Alzheimer's Association	Research Grant	Therapeutic Interdiction of Brain Hydrogen Peroxide in Alzheimer's disease
2001-2004	Co-PI	The Stanley Medical Research Institute	Treatment Trial Grant	N-acetyl cysteine in schizophrenia: A double-blind, randomised, placebo- controlled trial
2001-2004	CI	NH&MRC	Project Grant 170201	Novel therapies for alzheimer's disease based on a-beta- metal interactions
2002-2006	CIC	NH&MRC	Program Grant 208978	Neurodegenerative diseases of the aging brain: diagnosis and

				therapy based on the study of aggregated protein depositions
2004-2007	PI	Alzheimer's Association	Zenith Award 5002	Novel Imaging Agents for Alzheimer's disease
2005-2007	PI	American Health Assistance Foundation	Research Grant 5440	Copper/cholesterol interactions in Alzheimer's disease
2006-2007	CI	Bethlehem Griffiths Research Foundation	Equipment Grant	Novel Targets for the Prevention and Treatment of AD
2007	PI	CSIRO Flagship Collaboration Fund	Flagship Fellowship	The Biochemical Causes of Alzheimer's disease
2006-2008	CI	Australian Research Council	Discovery Project Grant DP0664068	The Role of Amyloid Protein Precursor in Mammalian Copper Transport
2004-2010	PI	Australian Research Council	Federation Fellowship FF0458331	Metals and neurodegenerative disease
2006-2010	CI	NH&MRC	Program Grant 400202	Diseases of the aging brain
2007-2010	PI	Alzheimer's Association	Project Grant IIRG-07-58260	Modulation of toxic A β species by novel therapeutics
2008	CI	Marian & EH Flack Trust	Equipment Grant	Fluorescence imaging of neurodegeneration in <i>C.elegans</i>
2009	CI	Bethlehem Griffiths Research Foundation	Project Grant	Determining the role of copper in a transgenic Amyotrophic Lateral Sclerosis mouse model
2009-2010	CI	Heart Foundation	Project Grant G 08M 3848	The drug aprotinin may regulate iron in blood and cardiovascular tissue.
2009-2011	CI	Australian Research Council	Discovery Project Grant DP0985963	Neural Copper Homeostasis: the role of the Alzheimer Amyloid-beta Precursor Protein
2009-2012	CI	NHMRC	Project Grant	Amyloid precursor protein aids iron

			566827	efflux from neurons
2012	CI	Bethlehem Griffiths Research Foundation	Research Grant	Investigating nitric oxide as the cause of iron accumulation in Parkinson's disease

Funding Information for CURRENT Funding:

<u>Year(s) funded</u>	<u>Role on project</u>	<u>Funding Source/Granting agency</u>	<u>Grant type and grant number</u>	<u>Title of the Grant</u>
2011-2015	CI	NHMRC	Program Grant 628946	Neurodegeneration in the aging brain: how the pathways leading to aggregated protein cause disease.
2010-2013	PI	ARC	Linkage Grant LP100200254	Single cell imaging of trace elements by laser ablation – inductively coupled plasma mass spectrometry
2011-2015	CI	NHMRC	Senior Principal Research Fellowship APP1002222	Metals in Alzheimer's and Parkinson's Diseases
2011-2015	CI	NHMRC	Australia Fellowship GNT1037234	Translational Therapeutics and Diagnostics for Alzheimer's Disease
2012-2013	CI	Perpetual	Research Grant FR2012/1199	Zinc-targeting therapy for lysosomal storage disorders
2012-2013	CI	Michael J. Fox Foundation for Parkinson's Research & Shake It Up Australia Foundation	Research Grant	Alpha synuclein as a major regulator of iron homeostasis
2013-2016	CI	NHMRC	Project Grant GNT1044542	Iron export protein failure in parkinsonism and dementia
2013-2015	CI	ARC	Discovery Project DP130100357	Iron accumulation in the nematode C.elegans: a model of ageing

Local Teaching and Training

Laboratory Advisory, Supervisory and Training Responsibilities:

<u>Years performed</u>	<u>Description of responsibilities</u>	<u>Hours per year</u>
1995-	Supervision of laboratory efforts of PhD students and post-doctoral research fellows	400

Names of Formally Supervised Advisees or Trainees

<u>Duration of training</u>	<u>Name</u>	<u>Current position</u>
1995-1996	Xudong Huang, PhD	Assistant Professor, Department of Radiology, Harvard Medical School
1995-1996	Craig S. Atwood, PhD	Research Director: Wisconsin Alzheimer Institute, Wisconsin Comprehensive Memory Program Associate Professor, Department of Medicine, University of Wisconsin-Madison
1995-1997	Marianne Findler, PhD	New York University, post-doctoral fellow
1997-1999	Lee E. Goldstein, MD PhD	Associate Professor of Psychiatry, Neurology, Ophthalmology, Pathology and Laboratory Medicine, & Biomedical Engineering, Boston University
1997-8	Cathy O'Malley, PhD	Instructor, Harvard Medical School
1997-2000	Math Cuajungco, PhD	Assistant professor of Biological Science California State University, Fullerton
1998-2002	Jacinta Legg	Commercial scientist, Hobart Tasmania.
1998-2001	Toni Lynch, PhD	Senior Research Officer, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
1997-1999	Danielle N. Gray-Singh, PhD	Associate Professor of Biology, Tuskagee University, Department Head, Neuroscience and Alzheimer's Neuropathology
1998-1999	Aleister J. Saunders, PhD	Associate Professor, Associate Department Head, Dept. of Biology, Drexel University Associate Professor, Depts. of Biochemistry & Molecular Biology, Drexel University College of Medicine Associate Professor, Neurobiology and Anatomy, Drexel University College of Medicine
1999-2001	Julien Muffat, PhD	Post-doctoral Fellow, Whitehead Institute, Massachusetts Institute of Technology
2000-2001, 2002-2004	Carlos Opazo, PhD	Associate Professor of Neuroscience, University of Concepcion, Chile
2001-2003	Seiichi Nagano, MD PhD	Section Chief, Dept of Peripheral Nervous System Research National Institute of Neuroscience, National

2001-2004	Avi Friedlich, MD PhD	Center of Neurology and Psychiatry Instructor in Psychiatry, Harvard Medical School
2001-2004	Christa Maynard, PhD	Post-doctoral Fellow, Karolinska Institute, Stockholm, Sweden
2003-2007	Olivia Dean, PhD	Postdoctoral Research Fellow, Department of Psychiatry, University of Melbourne
2004-2005	Hassan Siddiqi	Undergraduate student, Neurobiology Program, Harvard University
2005-2009	Simon James, PhD	Post-doctoral Research fellow, CSIRO Synchrotron Division
2005-	YaHui Hung, PhD	Post-doctoral research fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2005-2010	Michael Cater, PhD	Post-doctoral Research fellow, PeterMac Cancer Institute, Melbourne
2005-	Paul Adlard, PhD	Senior Research Fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2005-2009	Simon Wilkins, PhD	Post-doctoral research fellow, Monash Medical Research Institute
2005-2009	Susan Harding, PhD	Maternity Leave
2006-2012	Kathryn Cimdins	Postdoctoral fellow, St Vincent's Hospital, Melbourne
2006-	Rachel Blake	PhD candidate, Center for Neurosciences, The University of Melbourne
2006-	James Duce, PhD	Senior Research Fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2006-2009	Su San Mok, PhD	Research Support Coordinator, the Royal Australian College of General Practitioners (RACGP).
2006-2010	Chris Lim, PhD	Post-doctoral Research fellow, Deakin University
2007-	Yifat Biran	PhD candidate, Pathology, The University of Melbourne
2007-	Gawain McColl, PhD	Research Fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2008-	Alan Rembach, PhD	Post-doctoral research fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2008-	Blaine Roberts, PhD	Postdoctoral Fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria

2008-2012	Peng Lei	Postdoctoral Fellow, Oxidation Biology Laboratory, Florey Institute of Neuroscience and Mental Health
2008-2009	Lu Jin	Visiting PhD student, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2008-2009	Eloise Kok	Visiting PhD student, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2009-2010	Elisa Arthofer	Visiting PhD student, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2009-	Adam Gunn	PhD candidate, Centre for Neuroscience, The University of Melbourne
2009-	Mark Greenough	PhD candidate, Department of Genetics, The University of Melbourne
2010-2011	Daniela Zuser	Visiting PhD student, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2011-	Fernanda Yévenes	PhD candidate, Centre for Neuroscience, The University of Melbourne
2011-	Olivia Xu	PhD candidate, Centre for Neuroscience, The University of Melbourne
2011-	Bruce Wong, PhD	Postdoctoral Fellow, Oxidation Biology Laboratory, The Mental Health Research Institute of Victoria
2012-	Sara Hancock	PhD candidate, Centre for Neuroscience, The University of Melbourne
2012-	Rebecca Worthing	MSc candidate, Centre for Neuroscience, The University of Melbourne
2012-	Shih Min Chiu	MSc candidate, Centre for Neuroscience, The University of Melbourne

Student Awards:

2013, PhD student, Peng Lei (supervised from 2008-2012) was awarded the Chancellor's Prize for Excellence for his PhD thesis entitled: *"Ironing out the involvement of tau protein in neurodegenerative diseases"*.

Regional, National or International contributions

INVITED PRESENTATIONS

<u>Year</u>	<u>Type of Presentation</u>	<u>Title of Presentation, Organization extending invitation, Location</u>
1991	Lecture	27th Annual Beattie-Smith Lecture symposium, University of Melbourne, Australia
1993	Lecture	VII International Study Group on the Pharmacology of Memory Disorders Associated with Aging, Zurich, Switzerland
1993	Lecture	<i>Amyloid Protein Precursors in Development, Aging and Alzheimer's Disease</i> , Fondation IPSEN, Lyon, France
1994	Lecture	<i>Cerebral Zinc homeostasis in Alzheimer's disease</i> , Grand Rounds, Massachusetts General Hospital, Boston, MA USA
1994	Symposium	<i>The role of cerebral zinc metabolism in Alzheimer's disease</i> , Lederle, New Jersey USA
1995	Symposium	<i>The role of cerebral zinc metabolism in Alzheimer's disease</i> , SmithKline Beecham Pharmaceuticals, Harlow, UK.
1995	Symposium	<i>The role of cerebral zinc metabolism in Alzheimer's disease</i> , Merck, Rahway, New Jersey USA
1995	Lecture	<i>Amyloid in Inclusion Body Myositis</i> , First International Conference on Inclusion Body Myositis, Palm Beach, Florida USA
1995	Lecture	<i>The role of cerebral zinc metabolism in Alzheimer's disease</i> , Cell and Molecular Training Grant Student-organized Symposium on Alzheimer's disease, University of Pennsylvania, Philadelphia, PA USA
1996	Symposium	<i>Cerebral Zinc Metabolism: Pathogenic potential in Alzheimer's disease</i> , 35th annual meeting of the Society for Toxicology, Anaheim, CA USA
1996	Lecture	<i>Zinc exposure as a risk factor for Alzheimer's disease</i> , Beeson annual conference, Arlington, VA USA
1996	Symposium	<i>Abnormal Cerebral Zinc Metabolism: the prelude for Alzheimer's disease amyloid</i> , AFAR Grantee Conference, Harriman, NY USA
1996	Symposium	<i>Abnormal homeostasis of pH and zinc: the prelude for Aβ amyloid formation in Alzheimer's disease?</i> 20th Collegium Internationale Neuropharmacologicum, Melbourne, Australia.
1996	Lecture	<i>Cerebral zinc metabolism in Alzheimer's disease: Sites of potential therapeutic intervention</i> , Bayer Pharmaceuticals, New Haven, CT USA
1996	Lecture	<i>The Molecular Biology of Alzheimer's disease: an update</i> , Fifteenth Annual St Louis GRECC Symposium on Geriatrics and Gerontology, St Louis, Missouri USA
1996	Symposium	<i>Neurochemical events affecting Aβ aggregation in Alzheimer's disease</i> , Department of Pharmacology, University of Washington, Lecture Series, Seattle, WA USA
1997	Lecture	<i>Aβ Redox Mechanisms</i> , Department of Molecular Biology, Harvard Medical School, Massachusetts General Hospital, Boston, MA USA

1997	Symposium	<i>Oxidation Stress in Neurodegenerative Disorders</i> , Lundbeck Pty Ltd, Copenhagen, Denmark.
1997	Symposium	<i>Oxidation Stress in Neurodegenerative Disorders</i> , Bristol-Myer Squibb Pty Ltd, New Haven, CT USA
1998	Lecture	<i>Metallobiology and Oxidative Stress in Alzheimer's disease</i> , Grand Rounds, Austin Hospital, Heidelberg, Australia.
1998	Lecture	<i>Latest developments in Alzheimer's disease research</i> , American Geriatrics Society, Annual Meeting, Seattle WA USA
1998	Lecture	<i>Alzheimer's disease and Metal –dependent oxidation injury</i> , IBC 7 th Annual Conference on Alzheimer's disease, Boston, MA USA
1998	Lecture	<i>Metal-mediated oxidation injury in Alzheimer's disease and protein aggregation disorders</i> , Merck Pty Ltd, Rahway, NJ USA
1998	Lecture	<i>Metal-mediated oxidation injury in Alzheimer's disease and protein aggregation disorders</i> , MicroFab Pty Ltd, Dallas, TX USA
1998	Lecture	<i>Aβ redox activity</i> , SIBIA Pty Ltd, La Jolla, CA USA
1998	Lecture	<i>Alzheimer's disease, β-amyloid and zinc</i> , Zinc and Health: Current status and future directions. NIH closed workshop, Bethesda, MD
1998	Lecture	<i>Aβ and oxidative stress in Alzheimer's disease</i> , Center for Molecular Biology, ZMBH, University of Heidelberg, Germany.
1999	Lecture	<i>β-amyloid and oxidation in Alzheimer's disease</i> , University of Connecticut Health Center, Geriatric Grand Rounds, Farmington CT, USA
1999	Symposium	<i>Latest views on the pathogenesis of Alzheimer's disease</i> , American Association of Geriatric Psychiatry, Annual Meeting, New Orleans
1999	Lecture	<i>Is Aβ a corrupted antioxidant?</i> Neuroscience seminar series, Neuroscience Department, Tulane Medical School, New Orleans USA
1999	Lecture	<i>Neurochemical factors in Aβ aggregation and clearance</i> , IBC 8 th Annual Conference on Alzheimer's disease, Boston, MA USA
1999	Lecture	<i>Oxidation pathways in Alzheimer's disease</i> , Gordon conference on Oxidation in Disease prequel, Waterville Valley, NH, USA
1999	Lecture	<i>Is Aβ a corrupted antioxidant?</i> International Brain Research Organization 5 th annual conference, Jerusalem, Israel
1999	Lecture	<i>Superoxide dismutase properties of Alzheimer Aβ</i> , Seminar series, Neurobiology Department, Weizmann Institute, Rehovot, Israel.
1999	Lecture	<i>Is Aβ a corrupted antioxidant?</i> Seminar series, Florey Institute of Experimental Physiology and Medicine, Parkville, Australia.

1999	Lecture	<i>What is Alzheimer's disease?</i> Annual Geriatric Psychiatry Symposium, Frankston, Australia
1999	Lecture	<i>Evidence that Aβ is a corrupted antioxidant,</i> Science Lecture Series in Psychiatry, Tufts University, Medford MA, USA
1999	Lecture	<i>Evidence for superoxide dismutase activity of Aβ,</i> Membrane Sciences Colloquium, Chemistry Department, University of Kentucky, Lexington KY USA
1999	Lecture	<i>Redox properties of Alzheimer Aβ,</i> Grand Rounds, Boston University Medical Center USA
2000	Lecture	<i>Redox properties of Alzheimer Aβ,</i> 4 th International Symposium on Medicinal Chemistry of Neurodegenerative Diseases, Cancun, Mexico
2000	Lecture	<i>Metal chelation therapy for Alzheimer's disease,</i> Zurich IX meeting on Alzheimer's disease and Related Dementias Zurich, Switzerland
2000	Lecture	<i>Specific protein oxidation reactions in Alzheimer and other age-related degenerative diseases,</i> Novartis Foundation Symposium No. 235. Ageing vulnerability: causes and interventions. London, UK
2000	Lecture	<i>Specific protein oxidation reactions in Alzheimer and other age-related degenerative diseases,</i> The Wellcome Trust Open Meeting. Ageing vulnerability: causes and interventions. London, UK
2000	Lecture	<i>Evidence that Aβ is a corrupted antioxidant,</i> 6 th International Stockholm/Springfield Symposium on Advances in Alzheimer Therapy. Stockholm, Sweden
2000	Lecture	<i>Redox properties of Alzheimer Aβ,</i> Seminar series, Buck Center for Aging Research, Novato, CA USA
2000	Lecture	<i>β-amyloid in Alzheimer's disease: a corrupted antioxidant,</i> Second International Congress on Hormones, Brain and Neuropharmacology Rhodes, Greece
2000	Plenary Lecture	<i>Metals and Oxidative Stress in Alzheimer's disease,</i> The Dorothy Dillon Eweson Lecture on Advances in Aging Research, Sponsored by the American Federation for Aging Research, First International Conference on Metals and the Brain, Padua, Italy
2000	Lecture	<i>Metallochemical properties of Alzheimer Aβ,</i> Biomedical seminar series, CSIRO, Parkville, Victoria, Australia
2000	Lecture	<i>Effects of clioquinol on Alzheimer transgenic mice,</i> University of Gotenburg, Sweden
2000	Lecture	<i>Metals and Oxidative Stress in Alzheimer's disease,</i> Grand Rounds, Quincy Medical Center, MA, USA
2001	Lecture	<i>Alzheimer's disease: a metal-mediated oxidation disorder,</i> George W. Raiziss Biochemical Rounds seminar series, University of Pennsylvania Medical Center USA
2001	Lecture	<i>Alzheimer's disease: a metal-mediated oxidation disorder,</i>

Gordon Research Conference, Ventura CA USA

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| 2001 | Plenary Lecture | <i>Aβ metalloprotein as a therapeutic target in Alzheimer's disease,</i>
2 nd Annual meeting of the Italian Interdisciplinary Network On Alzheimer's disease |
| 2001 | Lecture | <i>Aβ cuproenzyme in Alzheimer's disease,</i>
Department of Biochemistry, National University of Singapore |
| 2001 | Plenary Lecture | <i>β-amyloid cuproenzyme: a therapeutic target in Alzheimer's disease,</i>
Copper and Prion Disease, BBSRC International Workshop
University of Cambridge, UK |
| 2001 | Lecture | <i>β-amyloid cuproenzyme: a therapeutic target in Alzheimer's disease,</i>
Alzheimer's and Parkinson's disease Seminar Series
Mayo Clinic, Jacksonville USA |
| 2001 | Symposium | <i>Abeta redox catalytic activity,</i>
Oxidative Stress in Neurodegenerative Disease: Cause or Consequence
International Society for Neurochemistry 18/ American Society for
Neurochemistry 32, Buenos Aires, Argentina |
| 2001 | Plenary Lecture | <i>Mechanisms of Amyloid toxicity,</i>
Monothematic ITINAD Conference, Biological Markers in Alzheimer Disease,
Monza, Italy |
| 2001 | Lecture | <i>Metal complexing agents as therapies for Alzheimer's disease,</i>
2 nd Annual Retreat of the Center for Neurodegenerative Disease Research.
Emerging Alzheimer's disease therapies: focusing on the future. University of
Pennsylvania, PA USA |
| 2001 | Lecture | <i>Metal complexing agents as therapies for Alzheimer's disease,</i> Neuroscience
Course, Karolinska Institutet, Huddinge Hospital, Stockholm, Sweden |
| 2002 | Lecture | <i>Development of a new drug for Alzheimer's disease, Beyond the Human
Genome.</i> CSIRO Health Sciences and Nutrition, Melbourne, Australia |
| 2002 | Lecture | <i>β-amyloid metalloprotein as a therapeutic target for Alzheimer's disease,
Current Approaches to Understanding Neurodegenerative Disease.</i> Partners
Program in Neurodegenerative Diseases 5 th Annual Colloquium, Boston, MA. |
| 2002 | Lecture | <i>Copper and Zinc Interactions with Beta-Amyloid and SOD1: Parallels in the
Pathogenesis of Alzheimer's Disease and ALS,</i> ALS Association,
Environmental Factors and Susceptibility Genes in ALS, Keystone, Colorado
USA |
| 2002 | Lecture | <i>Recent Advances in the treatment of Alzheimer's disease,</i>
First Asia Pacific Conference & Exhibition on Anti-Aging Medicine. Singapore. |
| 2002 | Lecture | <i>Metals, Free Radical Damage, and Alzheimer's disease,</i>
First Asia Pacific Conference & Exhibition on Anti-Aging Medicine. Singapore. |
| 2002 | Lecture | <i>Beta-amyloid metalloprotein as a therapeutic target for Alzheimer's disease,</i>
ICAD Satellite Symposium, Progress on Potential Treatments for Alzheimer's
disease based upon the Amyloid Hypothesis, Stockholm, Sweden. |
| 2002 | Lecture | <i>Oxidation biology: Alzheimer's disease to schizophrenia,</i>
MHRI Research Day, Parkville, VIC Australia |
| 2002 | Lecture | <i>Beta-amyloid metalloprotein as a therapeutic target for Alzheimer's disease,</i>
Neuroendocrine systems and lifespan determination. Buck Institute, Novato,
CA USA |
| 2002 | Lecture | <i>The medicinal metallochemistry of Alzheimer's disease,</i> 2nd Cold Spring
Harbor Laboratory Winter Biotechnology Meeting on Therapeutic
Opportunities In Neurodegenerative Diseases, Cold Spring Harbor, NY USA |

- 2002 Lecture *The metallobiology of Alzheimer's disease*, Seminar series, Departments of Toxicology and Chemistry, Johns Hopkins University Medical Center. Baltimore, MD USA
- 2002 Plenary lecture *The oxidative metallobiology of Alzheimer's disease*, Annual meeting of the Society for Free Radical Research, Wollongong, Australia.
- 2003 Lecture *Biochemical comparison of beta-amyloid in Alzheimer's disease and mutant SOD1 in ALS*. Boston ALS Therapy Alliance Seminar series, Boston, MA
- 2003 Lecture *The Metallobiology of Alzheimer's Disease*, Center for Aging Genetics and Neurodegeneration Seminar Series. Massachusetts General Hospital, Boston MA USA
- 2003 Lecture *The Metallobiology of Alzheimer's Disease*, 28th Lorne Protein Conference. Lorne, Australia.
- 2003 Lecture *The Metallobiology of Alzheimer's Disease, ALS and cataracts*, Gordon Research Conference on Oxidative Stress in Disease. Ventura, CA USA
- 2003 Plenary lecture *The Role of Zinc in Alzheimer's disease*, University of Texas, Medical Branch, Galveston, TX USA
- 2003 Lecture *The Metallobiology of Alzheimer's Disease: from bench to bedside*, Potamkin Prize Lecture, Annual meeting of the American Academy of Neurology, Honolulu, Hawaii.
- 2003 Plenary Lecture *Metal ions, β -amyloid and Alzheimer's disease*, The 29th Annual Naff Symposium on Chemistry & Molecular Biology. Lexington, KY.
- 2003 Lecture *Zinc, Copper, and Alzheimer's Disease: From Bench to Clinic*, 2nd Annual Alzheimer's disease Consortium Conference, Houston, TX USA
- 2003 Lecture *The Metallobiology of Alzheimer's disease: from bench to clinic*, King's College London, UK.
- 2003 Lecture *The Metallobiology of Alzheimer's disease*, 6th Colloquium on the Biology of Human Aging, Brown University, Providence, RI USA
- 2003 Lecture *Zinc, copper and Alzheimer's disease*, Diet and Optimum Health, Linus Pauling Institute, Portland, OR USA
- 2003 Lecture *The Metallobiology of Alzheimer's disease: from bench to clinic*, Maine Medical Center, Portland, ME USA
- 2003 Lecture *The Metallobiology of Alzheimer's disease: from bench to clinic*, Department of Chemistry, Post-graduate student seminar series. Emory University, Atlanta, GA USA
- 2003 Lecture *New Vistas in Alzheimer's disease Therapy: the roles of copper and zinc*, Institute of Psychiatry, London, UK
- 2003 Lecture *The Metallobiology of Alzheimer's disease: from bench to clinic*, Catania University, Catania, IT.
- 2003 Lecture *Oxidation and metals in Alzheimer's disease*, Burke Institute, Weill Cornell Medical College, New York, NY USA
- 2003 Lecture *A β alone does not cause Alzheimer's disease: the case for metals*, Current Debates in Alzheimer's disease II, University of Cincinnati, Cincinnati, OH
- 2003 Plenary Lecture *Alzheimer's disease: the search for a cure*, Dementia Awareness Week 2003, Alzheimer Australia, Melbourne, Australia
- 2003 Plenary Lecture *Alzheimer's disease: the search for a cure*, Dementia Awareness Week 2003, Alzheimer Australia, Perth, Australia
- 2003 Lecture *The Metallobiology of Alzheimer's disease: from bench to clinic*, Grand rounds, St Vincent's Hospital, Melbourne, Australia

2003	Lecture	<i>The Metallobiology of Alzheimer's disease: from bench to clinic</i> , Children's Cancer Institute of Australia, Sydney, Australia
2003	Lecture	<i>The Metallobiology of Alzheimer's disease: from bench to clinic</i> , The Garvan Institute for Medical research, Sydney, Australia
2003	Lecture	<i>The Metallobiology of Alzheimer's disease: from bench to clinic</i> , Biomarkers and Future Therapies for Alzheimer's disease October 29-30, 2003, GE Global Research Center, Niskayuna, NY
2004	Lecture	<i>The Metallobiology of Alzheimer's disease: from bench to clinic</i> , Metals and Biology, Gordon Research Conference, Ventura, CA USA
2004	Lecture	<i>Aβ metallobiology in Alzheimer's disease</i> , Protein misaggregation: from Biomolecules to Neurodegeneration. Boston, MA USA
2004	Lecture	<i>Alzheimer's disease: the search for a cure</i> , Grand Rounds, Rozelle Hospital, NSW, Australia
2004	Lecture	<i>Alzheimer's disease: the search for a cure</i> , Grand Rounds, Royal North Shore Hospital, NSW, Australia
2004	Plenary Lecture	<i>Metal, Aβ and Alzheimer's disease</i> , Masterclass in Alzheimer's disease. Canberra, ACT, Australia
2004	Plenary Lecture	<i>Aβ, oxidation, cholesterol and Alzheimer's Disease</i> , 7th International Conference on Plasma Membrane Redox Systems and Their Role in Biological Stress and Disease, Asilomar, CA USA
2004	Lecture	<i>Metals, aging and Alzheimer's disease</i> , 33 rd meeting of the American Aging Association, St Petersburg, FL USA
2004	Lecture	<i>Metals and Alzheimer's disease</i> , Gordon Research Conference on Metals in Medicine, Colby College, Waterville, ME USA
2004	Lecture	<i>Zinc and Alzheimer's disease</i> , Zinc Signals 2004, Aarhus, Denmark.
2004	Lecture	<i>Metals, oxidation and Alzheimer's disease</i> , Neurosciences Victoria Seminar series, Howard Florey Institute, Melbourne, Australia.
2004	Lecture	<i>Copper, zinc and Alzheimer's disease</i> , 9 th International Conference on Alzheimer's Disease and Related Disorders. Philadelphia, PA USA
2004	Symposium	<i>Zinc and Alzheimer's disease</i> , Italian Academy of Neurology Annual Meeting, Genoa, Italy
2004	Symposium	<i>Oxidation, Beta-amyloid and Alzheimer's disease</i> , Nebraska Redox Biology Center's Minisymposium on The Redox Biology of Aging, University of Nebraska, Lincoln, NE.
2004	Lecture	<i>The Metallobiology of Alzheimer's disease</i> , University of Alabama Alzheimer's Disease Research Center Seminar Series, Birmingham, AL
2004	Lecture	<i>Oxidation, Beta-amyloid and Alzheimer's disease</i> , International Meeting On The Role Of Oxidative Stress/Damage In Aging (University of Texas Health Science Center at San Antonio), San Antonio, TX USA
2004	Lecture	<i>Copper and Alzheimer's disease</i> , 4th International Meeting on Copper Homeostasis and Its Disorders: Molecular and Cellular Aspects, Ischia, Italy.
2004	Lecture	<i>Drug development based upon the Metals Hypothesis of Alzheimer's disease</i> . Alzheimer's Disease – From Molecular Mechanisms to Drug Discovery, Cancun, Mexico
2004	Session Chair	<i>Novel Therapeutic Approaches for Alzheimer's Disease</i> . Alzheimer's Disease – From Molecular Mechanisms to Drug Discovery, Cancun, Mexico
2005	Symposium	<i>Oxidation, biometals and Alzheimer's disease beta-amyloid</i> , Australian Neuroscience Society Annual meeting, Perth, Australia
2005	Lecture	<i>Copper and zinc in amyloid pathology</i> , 2005 Salk Institute/Adler Foundation

		Symposium on Alzheimer's Disease: Toward New Therapeutics for Alzheimer's Disease, Salk Institute, San Diego, CA USA
2005	Lecture	<i>Oxidation, biometals and Alzheimer's disease beta-amyloid</i> , Oxidation Center, Strathclyde University, Glasgow, UK
2005	Lecture	<i>Oxidation, biometals and Alzheimer's disease beta-amyloid</i> , Queens University Belfast, UK
2005	Symposium	<i>Copper and Zinc in Alzheimer's disease</i> , 44 th Annual Meeting of the the Society of Toxicology, New Orleans, LA USA
2005	Lecture	<i>Copper, Zinc and beta-amyloid in Alzheimer's disease</i> , Department of Genetics, University of Melbourne, Australia
2005	Lecture	<i>Copper and Alzheimer's disease</i> , Deakin University, Melbourne Australia
2005	Lecture	<i>Alzheimer's disease: the search for the cure</i> , University of the Third Age, Melbourne Australia
2005	Lecture	<i>Oxidation and the Metallobiology of Alzheimer's disease</i> , University of Miami, FL USA
2005	Session Chairman and Lecture	<i>Metal based therapies for Alzheimer's disease</i> , Alzheimer's Association, International Conference on Prevention of Dementia, Washington, DC USA
2005	Lecture	<i>Metallobiology of Alzheimer's disease</i> , Department of Chemistry seminar series, University of Catania, Italy
2005	Lecture	<i>Copper, Zinc and Beta-amyloid in Alzheimer's disease</i> , 12 th Royal Australian Chemical Institute National Convention, Sydney Australia
2005	Lecture	<i>Copper, Zinc and Beta-amyloid in Alzheimer's disease</i> , 12 th International Conference on Biological Inorganic Chemistry, Ann Arbor, MI USA
2005	Lecture	<i>Alzheimer's disease: the search for the cure</i> , Preventative Health Conference, Commonwealth Science Industry and Research Organization, Melbourne
2005	Lecture	<i>Inflammation in Alzheimer's disease</i> , 7 th World Congress on Inflammation, Melbourne Australia
2005	Lecture	<i>Oxidation, metals and Beta-amyloid in Alzheimer's disease</i> , Pharmacology of human lifespan extension, Buck Institute for Aging Research, Novato, CA USA
2005	Lecture	<i>Zinc in Alzheimer's disease</i> , 6 th Annual conference of the Institute of Zinc in Biology , Galveston, TX USA
2005	Lecture	<i>Copper and Zinc in Alzheimer's disease</i> , First Chilean International Symposium on Neurodegenerative Diseases, Santiago, Chile
2006	Plenary	<i>The Metallobiology of Alzheimer's disease</i> , Metals Mini-symposium, University of Arkansas Medical School, Little Rock, AK USA
2006	Lecture	<i>Copper and zinc in amyloid formation in Alzheimer's disease</i> , EMBO-FEBS workshop on amyloid formation, Florence, Italy.
2006	Lecture	<i>Alzheimer's disease: The search for the cure</i> , The Melbourne Clinic Academic psychiatry lecture series. Melbourne, Australia
2006	Lecture	<i>Oral treatment of APP transgenic mice with the second-generation 8-OH quinoline, PBT2, decreases soluble brain Aβ within 24 hours</i> , Hot Topics Symposium, 10 th International Conference on Alzheimer's disease and Related Disorders, Madrid, Spain.
2006	Lecture	<i>Brain metals in Alzheimer's Disease: from bench to clinic</i> , Neurology Grand Rounds, New York University, New York, NY USA
2006	Chairman	<i>Zinc and Diseases: CNS I- Alzheimer</i> , 6 th International Conference on Zinc Biology, Abbazia di Monte Oliveto, Italy

2006	Lecture	<i>Zinc transporters and Alzheimer's Disease</i> , 6 th International Conference on Zinc Biology, Abbazia di Monte Oliveto, Italy
2006	Lecture	<i>Copper in Alzheimer's and other neurodegenerative disorders</i> , 5th International Copper Meeting, Alghero, Italy
2006	Lecture	<i>Age related dyshomeostasis of transition metals in neurodegenerative disease</i> , Radicals in heart and Mind, Buck Institute of Age Research, Novato, CA USA
2006	Lecture	<i>The Metallobiology of Alzheimer's and other neurodegenerative disease</i> , Neurosciences Victoria Seminar Series, Melbourne, Australia
2006	Lecture	<i>New Research in Alzheimer's disease</i> , Psychiatry Grand Rounds, Alfred Hospital, Melbourne, Australia
2006	Lecture	<i>Oral treatment of Alzheimer amyloid transgenic mice with the second-generation 8-OH quinoline, PBT2, decreases soluble brain Aβ within 24 hours and improves cognitive performance within 5 days</i> , Australian Health and Medical Research Conference, Melbourne, Australia
2007	Lecture	<i>Copper and Zinc interactions with β-amyloid in Alzheimer's disease</i> , Tufts University Chemistry colloquium series, Medford, MA, USA
2007	Lecture	<i>Metals and Alzheimer's disease: far beyond aluminum</i> , Alzheimer's Disease Center Research Seminar Series, Boston University, Boston, MA, USA.
2007	Lecture	<i>PBT2 and the metallobiology of Alzheimer's disease</i> , Edmonton Aging Symposium, Alberta, Canada
2007	Lecture	<i>The metallobiology of Alzheimer's disease: from bench to clinic</i> , Cornell Medical Center, Neurology Grand Rounds, New York USA
2007	Lecture	<i>Twenty Years of Metalloneurobiology: where to now?</i> Metals and Membranes in Neuroscience. International Brain Research Organization Satellite Symposium, Melbourne Australia
2007	Lecture	<i>Zinc and copper in Alzheimer's disease</i> , Neurotransmission and neurological diseases Symposium. Seoul, Korea.
2007	Lecture	<i>The metallobiology of Alzheimer's disease: from bench to clinic</i> , Tsinghua University, Beijing, China.
2007	Lecture	<i>Zinc and copper in Alzheimer's disease</i> , Department of Chemistry, Royal Melbourne Institute of Technology, Australia.
2007	Inaugural Lecture	<i>Metals, oxidative stress and dementia: from biomarkers to prevention</i> , Dementia Collaborative Research Center No. 2, Australian National University, Canberra, ACT, Australia.
2007	Lecture	<i>Metals, beta-amyloid and Alzheimer's disease</i> , Department of Chemistry, University of Catania, Italy.
2007	Lecture	<i>The Metallobiology of Alzheimer's disease: from bench to bedside</i> , AstraZeneca, Huddinge, Sweden.
2007	Lecture	<i>Zinc, copper and amyloid in Alzheimer's disease</i> , Strategies for Engineered Negligible Senescence (SENS) 3, Queen's College, Cambridge, UK.
2007	Keynote Lecture	<i>Development of PBT2, a second generation 8-OH quinoline for the treatment of Alzheimer's disease</i> , Protein Misfolding and Neurological Disorders Symposium, Queensland Australia
2008	Lecture	<i>Zinc, copper and β-amyloid in Alzheimer's disease: from bench to clinic</i> , Tel Aviv University, Israel
2008	Chair	<i>Zinc in Alzheimer's disease neuropathology</i> , International Society for Zinc Biology, 1 st Annual Meeting, Banff, Canada.
2008	Lecture	<i>Metals in Alzheimer's disease</i> , Oregon Health Science University, Corvallis, USA

2008	Keynote Lecture	<i>Alzheimer's Disease: Search for a Cure</i> , 3 rd International Conference on Women's Mental Health, Melbourne, Australia
2008	Plenary Lecture	<i>Zinc in Alzheimer's disease</i> , Metal ions in Molecular Medicine Symposium, Aarhus, Denmark
2008	Lecture	<i>Zinc and copper in Alzheimer's disease</i> , 235 th American Chemical Society (ACS) National Meeting, New Orleans, LA, USA
2008	Lecture	<i>The Metallobiology of Alzheimer's disease</i> , Metals in Medicine Gordon Research Conference, Andover, NH, USA
2008	Session Chair	<i>Metals in Alzheimer's disease</i> , Metals in Medicine Gordon Research Conference, Andover, NH, USA
2008	Lecture	<i>Alzheimer's disease</i> , The Baby Boomers Expo Seminar Series, Melbourne, Australia
2008	Lecture	<i>Blood amyloid-beta as a potential biomarker for Alzheimer's disease</i> , 8 th Annual International College of Geriatric Psychoneuropharmacology, Sydney, Australia
2008	Lecture	<i>Beta-amyloid, metallobiology and Alzheimer's disease</i> , Neuroscience Seminar Series University of Wyoming, Laramie, WY, USA
2008	Lecture	<i>Metals, amyloid and oxidative stress in Alzheimer's disease</i> , 14 th Biennial Meeting of the Society for Free Radical Research International, Beijing, China
2008	Lecture	<i>Metals, amyloid and oxidative stress in Alzheimer's disease</i> , Invited lecture, Department of Biochemistry, Tsinghua University, Beijing, China
2008	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , Cade Neuroscience Seminar, University of Melbourne, Australia
2008	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , Israel Society for Neuroscience 17 th Annual Meeting, Eilat, Israel
2009	Lecture	<i>Metals and Alzheimer's disease</i> , Formal Research Seminar Series, Buck Institute for Age Research, Novato, CA, USA
2009	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , Department of Biochemistry Seminar Series, University of Zurich, Switzerland
2009	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , Seminar Series, Department of Psychiatry, Imperial College London, UK
2009	Lecture	<i>Biotechnology: Experiences of a Lab Rat</i> , MIT Enterprise Forum "Day of the Entrepreneur", Tel Aviv University, Israel
2009	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , Department of Biochemistry, Tel Aviv University, Israel
2009	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , Department of Biochemistry, Ben Gurion University, Beer Sheva, Israel
2009	Lecture	<i>The Metals Theory of Alzheimer's disease: from bench to clinic</i> , 2009 International Conference on Molecular Neurodegeneration, Xiamen, China
2009	Lecture	<i>The Metals Theory of Alzheimer's disease: the scientific basis for environmental risk</i> , Alzheimer's Disease Research Center, Rush University, Chicago, USA
2009	Lecture	<i>Alzheimer's disease</i> , National Aging Research Institute, Parkville, Victoria, Australia

2009	Lecture	<i>Alzheimer's Disease</i> , Australian Academy of Technology, Science and Engineering, Victorian State Parliamentary Briefing Series, Victorian State Parliament, Melbourne, Australia.
2009	Lecture	<i>The Metal Theory of Alzheimer's disease</i> , Neuroscience Seminar Series, University of California, Irvine, Irvine, CA, USA
2009	Lecture	<i>The Metal Theory of Alzheimer's disease</i> , 6th Annual Symposium "Advances in Alzheimer's disease", Madrid, Spain.
2009	Workshop participant	International Copper Association workshop on "Copper and Alzheimer's disease", Chicago, IL, USA
2009	Lecture	<i>The Metals Theory of Alzheimer's disease</i> , 3rd Protein Misfolding and Neurological Disorders Meeting, Port Douglas, Australia
2009	Roundtable discussant	3rd Protein Misfolding and Neurological Disorders Meeting, Port Douglas, Australia
2009	Chair	<i>Zinc in Neurodegeneration</i> , 2nd International Zinc in Biology annual meeting, Jerusalem, Israel
2010	Lecture	<i>Metal Theory of Alzheimer's disease</i> , Spring 2010 Neurobiology Seminar Series, UTSA Department of Biology, San Antonio, Texas, USA
2010	Lecture	<i>Metals, amyloid, and Alzheimer's disease: from bench to clinic</i> , Neurodegeneration Center of Excellence, Friedman Brain Institute of Mount Sinai School of Medicine, New York, New York, USA
2010	Lecture	<i>The Metal Theory of Alzheimer's Disease</i> , The 4th Annual Alzheimer's and Parkinson's Disease Symposium, Sydney, Australia
2010	Lecture	<i>PBT2 for cognitive aging and Alzheimer's disease: advances in the metals theory</i> , American Aging Association's 39 th Annual Meeting, Portland, Oregon, USA
2010	Lecture	<i>The Metal Theory of Alzheimer's Disease</i> , Seminar series, CSL Ltd, Parkville, Australia.
2010	Lecture	<i>So you want a career in neuroscience research...</i> , Neuroscience research induction program, Florey Neuroscience Institutes, University of Melbourne, Parkville, Australia.
2010	Keynote Lecture	<i>Metals in Alzheimer's Disease: development of new therapeutics</i> , RANZCP 2010 Congress, New Zealand
2010	Lecture	<i>PBT2 for Alzheimer's disease and cognitive aging</i> , OzBio, Melbourne
2010	Lecture	<i>MHRI-CSIRO collaboration</i> , Melbourne
2010	Lecture	<i>The role of metals in Alzheimer's disease</i> , Washington University School of Medicine, St Louis, USA.
2010	Lecture	<i>Update on AIBL</i> , CSIRO Preventative Health Flagship Scientific Retreat, 26-28 October, Adelaide
2010	Lecture	Zinc in Alzheimer's disease, The 60th Fujihara Seminar Zinc Signaling and Cellular Functions, Osaka, Japan.
2010	Lecture	<i>The metallobiology of Alzheimer's disease</i> , Metallomics symposium, Kyoto, Japan
2010	Lecture	<i>Metals in Alzheimer's disease</i> , Boden Research Conference 2010: Metals in Biological Systems, Canberra, Australia
2011	Plenary	<i>The Metal Theory of Alzheimer's disease: From Bench to Clinic</i> , 2011 Master Class for Alzheimer's disease,

2011	Lecture	"So you want a career in neuroscience research...", Neuroscience PhD Orientation course, University of Melbourne
2011	Lecture	<i>Metals in Alzheimer's Disease</i> , NHMRC Council dinner, ANU, Canberra, Australia.
2011	Keynote lecture	<i>Metals in the Pathogenesis of Alzheimer's disease</i> . Master Class in Alzheimer's disease, Brisbane, Australia.
2011	Lecture	<i>β-amyloid metal interactions in Alzheimer's Disease: physiological and pathological</i> . Gordon Research Conference on Oxidative Stress, Ventura, CA, USA.
2011	Lecture	<i>Metals and blood abnormalities in Alzheimer's disease</i> . Amgen, Thousand Oaks, CA, USA.
2011	Lecture	<i>The Metals Theory of Alzheimer's Disease: an update</i> , Barwon Mental Health, Drug & Alcohol Services 2011 Colloquium, Geelong, Australia.
2011	Lecture	<i>Current and Future State of Alzheimer's disease Treatment</i> , Alfred Hospital Grand Rounds, Melbourne, Australia.
2011	Lecture	<i>Synaptic zinc as a pharmacological target in Alzheimer's disease</i> . World Pharma Congress, Philadelphia, USA.
2011	Lecture	<i>Iron, tau and DJ-1: insights into the mechanism of action of PBT434 in Parkinson's disease mouse models</i> . World Pharma Congress, Philadelphia, USA.
2011	Lecture	<i>PBT2 for Alzheimer's disease and Huntington's disease</i> . Rodman & Renshaw, New York, USA.
2011	Lecture	<i>Alzheimer's disease: is a cure possible?</i> Victorian Division of the Australian Academy of Science Technology and Engineering, Melbourne, Australia.
2011	Plenary	<i>APP, tau and presenilin: The metal ion regulatory proteins of Alzheimer's disease</i> . International Conference on Alzheimer's disease, Paris, France.
2011	Lecture	<i>Alzheimer's disease: The search for the cure</i> . Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia.
2011	Lecture	<i>Metallostasis in Alzheimer's Disease and Parkinson's Disease</i> . 5 th International Conference on Metals and Genetics, Hyogo, Japan
2011	Lecture	<i>Metals and Alzheimer's disease</i> . National Center of Neurology and Psychiatry, Tokyo, Japan
2011	Lecture	<i>Metallostasis in Alzheimer's Disease and Parkinson's Disease</i> . 4th Protein Misfolding and Neurological Disorders Meeting, Heron Island, Australia.
2011	Lecture	<i>Metals and Alzheimer's disease: from bench to clinic</i> . John Curtin School of Medical Research, Canberra, Australia.
2011	Lecture	<i>Zinc in Alzheimer's disease</i> . Minisymposium: The Neurophysiology and Pathology of Brain Zinc. Annual Meeting, Society for Neuroscience, DC, USA.
2012	Lecture	<i>After two decades of mostly failed Amyloid targeted therapeutics, is it time to re-examine the Amyloid hypothesis?</i> 17th University of Melbourne Symposium for the Academic Unit of the Psychiatry of Old Age, Melbourne.

2012	Lecture	<i>The Iron-APP-tau axis in Alzheimer's and Parkinson's Disease.</i> John Curtin School of Medical Research, Canberra, Australia.
2012	Lecture	<i>Metals in Alzheimer's disease and Parkinson's disease.</i> Centenary Institute, Sydney.
2012	Lecture	<i>Metals in Alzheimer's disease and Parkinson's disease.</i> Monash Institute of Pharmaceutical Sciences, Melbourne.
2012	Lecture	<i>Amyloid Precursor Protein: a novel amine oxidase.</i> Nutrition in Medicine Conference, Melbourne.
2012	Lecture	<i>Metal and Alzheimer's disease: well beyond aluminium.</i> Royal Society of Victoria, Melbourne
2012	Lecture	<i>Developing a blood Test for Alzheimer's disease.</i> Advanced Course in Aged Care Psychiatry, University of Melbourne
2012	Lecture	<i>Metals in Alzheimer's disease and Parkinson's disease,</i> Melbourne Brain Centre - neuroscience seminar series, University of Melbourne, Australia.
2012	Lecture	<i>The Iron-APP-Tau axis in Alzheimer's and Parkinson's Diseases,</i> The Winifred Masterson Burke Medical Research Institute, NY, USA
2012	Lecture	<i>Metals in Alzheimer's disease</i> Nuclear Medicine & Molecular Imaging Seminar, Massachusetts General Hospital, MA, USA
2012	Lecture	<i>Copper and Zinc in Alzheimer's disease and Parkinson's disease</i> Gordon Research Conference on Metals in Medicine, Proctor Academy, Andover, New Hampshire, USA

Report of Clinical Activities

<u>Year</u>	<u>Type of License or certification</u>
1983	Medical license- Victoria
1989	Fellowship, Royal Australian and New Zealand College of Psychiatrists
1993	Medical license- Massachusetts
1993	USMLE Steps 1 and 2- ECFMG certification
1994	FLEX components I and II
1997	US Board of Psychiatry and Neurology, psychiatry certification (Recertified 2007)

1. Description of clinical practice (2005-)

- Neuropsychiatrist
- Tertiary consultation on dementia cases

2. Name and Location of Practice

- Delmont Memory Clinic, Melbourne, Australia
- 167 Barry Street, Carlton, Victoria

3. Patient load

- Approximately 5 patients per month on average; involving highly complex cases of cognitive deterioration.

Clinical Innovations:

- The development of new drug therapies and diagnostic tests for Alzheimer's disease, Parkinson's disease and major psychiatric illness. I also participate in the design of early phase clinical trials. Diagnostic software for cognitive loss that I co-developed is already in clinical use (Cogstate/Coghealth), and diagnostic hardware procedures that I co-invented for detecting amyloid in the lens as a biomarker for Alzheimer's disease are in clinical trials (Neuroptix).

Report of Technological and Other Scientific Innovations

Patents:

Masters CL, **Bush AI**, Beyreuther KT, inventors. The University of Melbourne, assignee. **A Method of Assaying and Treating Alzheimer's Disease.** US Pat. 5705401. International patent application, PCT/AU92/00610, Australian patents serial number 669493, 701954, Canadian Patent, 2123211, European Patent, 92923431.8, Japanese Patent, 508824/93, US Patent 5,705,401, US patent application 09/624,965. Filed Sep 16, 1994; Issued Jan 6, 1998. *The present invention relates to a method of assaying for Alzheimer's disease in a human by determining the relative abundance of one or more forms of amyloid precursor protein (APP) or the enzyme responsible for said forms in circulatory fluid and to a method for treating the disease by modulating divalent cation, trivalent cation and/or heparin interaction with APP. (status: sealed)*

Tanzi RE, **Bush AI**, inventors; The General Hospital Corporation, assignee. **An In Vitro System for Determining Formation of A β Amyloid.** US Pat. App 10041605; International patent application PCT/US94/11928, US Patent No. 6,365,414, US patent application 10/041,605 2002 April 2, Japanese provisional patent 8-508706, Canadian patent application 2,205,085, Australian application number 81223/94. Filed 10 Jan 2002. *The invention relates to rapid methods for determining formation of A β amyloid and screening compounds which inhibit formation of A β amyloid in vitro, as well as kits for carrying out the present methods. Such an agent used in vivo may prevent, ameliorate or reverse the symptoms of Alzheimer's disease and A β amyloidotic disorders related to Alzheimer's disease, Down's syndrome, and Guamanian amyotrophic lateral sclerosis/Parkinson's dementia complex. The process described in this invention involves the rapid induction of A β amyloid by a heavy metal cation capable of binding to a polypeptide comprising at least amino acids 6 to 28 of A β , such as zinc to form amyloid and determination of formation of tinctorial A β amyloid. Moreover, a method of determining effectiveness of a candidate anti-amyloidotic agent for prevention or treatment of A β amyloidosis is described which uses cell cultures which express at least a human A β peptide. (status: lapsed)*

Tanzi RE, **Bush AI**, Moir RD, inventors; The General Hospital Corporation, assignee. **A Diagnostic Assay for Alzheimer's Disease: Assessment of A β Abnormalities.** US Pat 5972634. Patent No. 6890727. International patent application PCT/US94/11895, US Patent 6,890,727, Canadian patent application 2,203,142, Filed Aug 4, 1997; Issued Oct 26, 1999. *The disclosed invention relates to assays for detecting and quantifying A.beta. peptide, using solid supports that are coated with heavy metal cations, such as zinc (II) or copper (II) form of a nitriloacetic acid. Further, diagnostic kits are described which are used to carry out the assays of the present invention. An improvement in an assay for detection of A.beta peptide is suggested which comprises forming a heavy metal cation/solid support complex. The preferred heavy metal cations for this improvement are zinc (II) or copper (II) form of a nitriloacetic acid. Finally, methods and kits for bulk purification of A.beta. peptides from biological fluids are taught. (status: lapsed)*

Tsai G, Huang X, **Bush AI**, inventors; The General Hospital Corporation, assignee. **Methods for Screening Drugs to Predict Tardive Dyskinesia.** US Patent 6316269, US application 09/970,703, Filed Oct 6, 1998; Issued Nov 13, 2001. *The present invention provides screening methods for identifying*

compounds which induce tardive dyskinesia (TD) when administered to an animal. In particular, the methods involve assaying for intermediates and end products of reactions associated with candidate compound mediated reduction of reducible substrates. Also provided are high-throughput screening methods for determining whether compounds induce TD when administered to an animal. Further provided are methods for treating psychoses comprising testing antipsychotic drugs to identify those which will not induce TD when administered to an animal and administering one or more such drugs to a patient in need thereof. (status: ceased)

Bush AI, Tanzi RE, Xilinas M, Cherny R, inventors; Massachusetts General Hospital assignee. **Use of Clioquinol for the Therapy of Alzheimer's Disease.** US Pat. App 11099693, Publication number US 2006/0074104 A1, Filed Apr 6, 2005. *The invention relates to the identification of clioquinol as a pharmaceutically therapeutic agent for treatment of Alzheimer's disease and related pathological conditions.*

Bush AI, Huang X, Atwood CS, Tanzi RE, inventors; The General Hospital Corporation, assignee. **Method for the Identification of Agents for Use in the Treatment of Alzheimer's Disease.** US Pat. 6323218, International patent application PCT/US99/05291, US Patent No. 6,323,218 US patent application 09/956,980, European patent application 99911307.9, Japanese patent application 2000-535322, Australian Patent 752236, Australian patent application 2002318888, Canadian patent application 2,323,458, Filed Mar 11, 1998, Issued Nov 27, 2001. *The invention relates to the identification of pharmacological agents to be used in the treatment of Alzheimer's disease and related pathological conditions and compositions for treatment of conditions caused by amyloidosis, A β -mediated formation of ROS, or both, such as Alzheimer's disease.*

Bush AI, Huang X, Atwood CS, Tanzi RE, inventors; The General Hospital Corporation, assignee. **Composition comprising a metal chelator and a method of treating amyloidosis by administering the metal chelator.** US Patent number 7045531; **Application number:** 09/380,704; Filed Mar 11, 1998; Issued May 16, 2006. *The invention relates to the identification of pharmacological agents to be used in the treatment of Alzheimer's disease and related pathological conditions. Methods and compositions for treatment of conditions caused by amyloidosis, A β -mediated ROS formation, or both, such as Alzheimer's disease, are disclosed. (status:*

Huang X, **Bush AI**, Tanzi RE, Atwood CS, inventors; The General Hospital Corporation, assignee. **Identification of agents for use in the treatment of Alzheimer's disease.** Australian App No. 65484/98. Filed 11 Mar, 1998. (status: ceased)

Huang X, **Bush AI**, Tanzi RE, Atwood CS, inventors; The General Hospital Corporation, assignee. **Identification of agents for use in the treatment of Alzheimer's disease.** Australian App No. 2002301084. Published 27 Feb 2003; Filed 12 Sep 2002. (status: lapsed)

Bush AI, Huang X, Atwood CS, Tanzi RE, inventors; The General Hospital Corporation, assignee. **Method of screening for drugs useful in treating Alzheimer's Disease.** US Pat.App 10643226, Publication number US 2005/0112543 A1, Canadian patent application 2,371,768, Japanese patent application P2000-615064, European patent application 00928644.4, Australian patent application 46849/00. Filed Aug 19, 2003. *The invention relates to methods for identifying candidate pharmacological agents to be used in the treatment and/or prevention of Alzheimer's disease and/or related pathological conditions. (status: ceased)*

Goldstein LE, **Bush AI**, inventors; Massachusetts General Hospital assignee. **Method for the identification of Agents that Inhibit or Promote Cataracts and uses thereof.** US Pat. 7166472, Application number 10/938.780; International patent application PCT/US00/25975, Australian patent application 200276021, European patent application 009652843.3, Japanese patent application P2002-520863 and US application 10/344,860. Filed Nov 9, 2004; Issued Jan 23, 2007. *Described are methods for the identification of agents useful in the treatment or prevention of cataracts. Also described are methods for the identification of agents that may inadvertently promote or accelerate the formation of cataracts, and methods of treating or preventing injuries to or diseases of the ocular lens, retina and/or macular. More specifically, the invention describes methods for the identification of pharmacological agents useful in treating cataracts by inhibiting the cross-linking of eye lens proteins. (status: ceased)*

Goldstein LE, Chylack LT Jr, **Bush AI**, inventors; The General Hospital Corporation and The Brigham and Women's Hospital, Inc assignees. **Methods for diagnosing a neurodegenerative condition.** US Pat. 7653428, Filed Aug 28, 2006; Issued Jan 26, 2010. *A method of diagnosing, prognosing, staging, and/or monitoring a mammalian amyloidogenic disorder or a predisposition thereto by detecting a protein or*

polypeptide aggregate in the cortical supranuclear regions of an ocular lens of the mammal. (status: sealed)

Bush AI, Cherny R. inventors; Prana Biotechnology Limited and The General Hospital Corporation, assignees. **Neurotoxic Oligomers**. US Pat. App 12466094, Publication number US 2009/0297538 A1, International patent application PCT/AU01/00786. Australian application 2001268828, European application 01947033.5, Japanese application 2002-505026, Chinese application 01813312.6, Canadian application 2413354, New Zealand application 523428 and US application application 10/312437. Filed May 14 2009. *This invention relates to methods and compositions for the treatment or alleviation of Alzheimer's disease and of other conditions related to abnormal protein aggregation. In particular, the invention relates to methods and compositions for the immunotherapy of Alzheimer's disease, Parkinson's disease, and cataract. In one aspect the invention provides a method of prophylaxis, treatment or alleviation of a condition characterized by pathological aggregation and accumulation of a specific protein associated with an immunizing-effective dose of one or more tyrosine cross-linked compounds, and optionally also comprising copper ions complexed to the compound. Alternatively passive immunization against a tyrosine cross-linked compound may be used. Prophylactic or therapeutic compositions and diagnostic methods are also disclosed and claimed. (status: sealed)*

Bush AI, Copolov DL, Berk M. inventors; Mental Health Research Institute of Victoria, assignee. **Modulation of physiological processes and agents useful for same**. US Pat. App 10491061, Publication number: US 2005/0032708 A1, International Patent Application PCT/AU02/01320, Sep 26, 2002; Japanese Divisional Application 2010-121582, 27 May 2010; Japanese Standard Application 2003-530319, 26 Sep 2002; Canadian Standard Application 2461703, 26 Sep 2002; European Patent 1438063, 26 Sep 2002; US Standard Application 10/491061, 26 Sep 2002; Australian Standard Application 2002333018, 26 Sep 2002. Filed Sep 26, 2002. *A method of modulating glutathione metabolism in the central nervous system of mammals, particularly a method of up-regulating glutathione metabolism in the central nervous system by up-regulating levels of glutathione precursor molecules. Useful in the treatment or prophylaxis of inappropriate central nervous system oxidation homeostasis including schizophrenia. (status: sealed)*

Darby DD, **Bush AI**, Maruff P, Collie A, inventors. Cogstate Ltd, assignee. **System and method of testing cognitive function**. US Pat. App 10144437, Publication number: US 2002/0192624 A1, International patent application PCT/US02/25497. Filed May 10, 2002; *A system and method of diagnosing the onset and monitoring the progression of cognitive impairment may incorporate administering one or more psychological tests and instructing a subject regarding rules for responding to the one or more tests without providing cultural cues such as may be introduced in language-based instruction techniques. Proper test responses may be simulated during an instruction phase preceding the testing phase. An apparatus, system, and method of testing cognitive function may be implemented in a computerized system. (status: lapsed)*

Bush AI, Huang X, Atwood CS, Tanzi RE, inventors. The General Hospital Corporation, assignee. **Methods for identifying an agent that inhibits oxygen-dependent hydrogen peroxide formation activity but does not inhibit superoxide-dependent hydrogen peroxide formation**. US Pat. 6638711, Application No. 9/560,883, Filed Apr 28, 2000, Issued Oct 28, 2003. *The invention relates to methods for identifying candidate pharmacological agents to be used in the treatment and/or prevention of Alzheimer's disease and/or related pathological conditions.*

Darby DD, **Bush AI**. Inventors; CogState Ltd assignee. **Psychological testing method and apparatus**. Australian Patent 2001275604, US Pat. 7163513, Application number 10/343,067; Filed Jul 27, 2001, Issued Jan 16, 2007. *A method for psychological testing of a subject is performed by (A) presenting a test by means of a testing means having output means (e.g. a computer monitor) and input means (e.g. a keyboard); and, (B) instructing the subject by displaying a simulation (as shown in the figure) of the test by means of the output means so that the subject can learn how to perform the test from the simulation. The test is therefore independent of the subject's language skills, or of verbal instructions provided by a supervisor. (status: sealed)*

Bush AI, Copolov DL, Berk M. inventors; Mental Health Research Institute of Victoria, assignee. **Combination therapy**. US Pat. App 12443442, US Provisional Application 60/853572, 23 Oct 06; Complete Filed 23 October 2007. International Patent Application PCT/AU2007/00161; European Standard Application 7815416.8; Hong Kong 10100171.9; Canadian Standard Application 2667052; US Standard Application 12/443442; New Zealand Standard Application 575905; South African Standard Application 2009/02203; Japanese Standard Application 2009-532650; Australian Standard Application 2007308742; Publication number: US 2010/0099762 A1; Filed Oct 23, 2007. *A method of treating a psychiatric or neuropsychiatric condition with a combination therapy comprising an antipsychotic agent a compound that increases levels of glutathione in the body. (status: filed)*

Bush AI, Inventor: Prana Biotechnology Ltd, assignee. **Method of treatment of age-related macular degeneration (AMD)**. US Pat. App 12297165, International Patent Application No. PCT/AU2007000490; Australian application number 2010216074; Publication number: US 2010/0144693 A1; Filed: Apr 13, 2007. *The present invention relates generally to the field of treatment and prophylaxis of retinal degenerative diseases. More particularly, the present invention contemplates a method for preventing, reducing the risk of development of, or otherwise treating or ameliorating the symptoms of, age-related macular degeneration or related retinal conditions in mammals and in particular humans. The present invention further provides therapeutic compositions enabling dose-dependent or dose-specific administration of agents useful in the treatment and prophylaxis of age-related macular degeneration or related retinal degenerative conditions. (status: filed)*

Bush AI, Huggins PJ, Parsons JG, Kok GB, Kenche V, inventors: Prana Biotechnology Ltd, assignee. **Methods of treatment of Glioma Brain Tumour**. Australian application number 2007262670, International Patent Application No. PCT/AU2007/000876, Filed: 22 June 2007. *The present invention relates generally to therapeutic agents, formulations comprising them and their use in the treatment, amelioration and/or prophylaxis of glioma brain tumours and related conditions. The therapeutic agent comprises two fused 6- membered rings with at least a nitrogen at position 1 and a hydroxyl at position 8.(status: filed)*

Bush AI, Huggins PJ, Parsons JG, Kok GB, Kenche V, inventors: The Mental Health Research Institute of Victoria, assignee. **Method of Treatment and agents useful for same**, Australian Application No. 2010903933, PCT/AU2011/001132; Filed Sep 1, 2010. *The main claim for this application is: A method of treatment of a subject whose condition is characterised by aberrant ferroxidase activity by administering an effective amount of an agent to modulate functional interactivity of ZN2+ with said APP where the interaction increases APP ferroxidase activity and facilitating the interaction of ZN2+ with said APP decreases ferroxidase activity. (status: lapsed)*

Bush, Duce, inventors: Mental Health Research Institute of Victoria, assignee. **Methods of modulating amine oxidase activity and compounds useful for same**. Australian Provisional Application Number AU2011901468. Filed April 19, 2011. *The present invention relates generally to a method of treating or preventing conditions characterised by aberrant amine oxidase activity and agents useful for same. More particularly, the present invention relates to a method of treating or preventing conditions characterised by aberrant amine oxidase activity by modulating the activity of amyloid precursor protein. The method of the present invention is useful, inter alia, in the treatment and/or prophylaxis of conditions including, but not limited to, clinical depression. (status: filed)*

Bush, Finkelstein, Ayton, inventors: Mental Health Research Institute, assignee. **Ceruloplasmin treatment as a therapeutic for Parkinson's disease**. Australian Provisional Application Number AU2011905332; Filed December 20, 2011. *The present invention relates generally to a method of treating conditions characterised by reduced ceruloplasmin functionality in the central nervous system and agents useful for same. More particularly, the present invention relates to a method of treating conditions characterised by reduced ceruloplasmin functionality in the central nervous system by increasing levels of ceruloplasmin in the periphery. The method of the present invention is useful, among other things, in the treatment and/or prophylaxis or conditions including, but not limited to, Parkinsonism and Parkinson's Disease. (status: filed)*

Audiovisual Material and software:

Bush AI. *The Mind Observed: Performing the Mental State Examination*. University of Melbourne, Centre for Higher Education. 1989 [video].

Darby DG, **Bush AI**. *Cogstate: screening software for the assessment of cognitive health*. www.Cogstate.com (2001).

Darby DG, **Bush AI**. *CogSport: screening software for the assessment of recovery from concussion*. www.Cogsport.com (2002).

Bush, A. (2007), "Metals, Oxidative Stress and Neurodegeneration", in Hodges, J. (ed.), *Neurodegenerative Diseases: Fundamentals, Research Methods, Latest Advances*, The Biomedical & Life Sciences Collection, Henry Stewart Talks Ltd, London (online at <http://www.hstalks.com/?t=BL0201056-Bush>)

Publications

Peer-reviewed publications

Research Investigations

1. **Bush AI**, Martins RN, Rumble B, Moir R, Fuller S, Milward E, Currie J, Ames D, Weidemann A, Fischer P, Multhaup G, Beyreuther K, Masters CL. The amyloid precursor protein of Alzheimer's Disease is released by human platelets. Journal of Biological Chemistry 1990; 265, 15977-15983.
2. **Bush AI**, Huang W-Q, Copolov DL, Lim ATW. Hypothalamic atrial natriuretic peptide plasticity: differential modulation of alpha and beta adrenoceptors. Neuroendocrinology 1990; 52, 65-69.
3. Small DH, Moir RD, Fuller SJ, Michaelson S, **Bush AI**, Li Q-X, Milward E, Hilbich C, Weidemann A, Beyreuther K, Masters CL. A protease activity associated with acetylcholinesterase releases the membrane-bound form of the amyloid protein precursor of Alzheimer's disease. Biochemistry 1991; 30, 10795-10799.
4. **Bush AI**, Whyte S, Thomas LD, Williamson T, Van Tiggelen CJ, Currie J, Small DH, Moir RD, Li Q-X, Rumble B, Mönning U, Beyreuther K, Masters CL. An abnormality of plasma amyloid precursor protein in Alzheimer's disease. Annals of Neurology 1992; 32, 57-65.
5. Moir RD, Martins RN, **Bush AI**, Small DH, Milward EA, Rumble BA, Multhaup G, Beyreuther K, Masters CL. Human brain β A4 amyloid protein precursor (APP) of Alzheimer's disease: purification and partial characterization. Journal of Neurochemistry 1992; 59, 1490-1498.
6. **Bush AI**, Multhaup G, Moir RD, Williamson TG, Small DH, Rumble BA, Pollwein P, Beyreuther K, Masters CL. A novel zinc(II) binding site modulates the function of the β A4 amyloid protein precursor of Alzheimer's disease. Journal of Biological Chemistry 1993; 268, 16109-16112.
7. Tanzi R, Gaston S, **Bush A**, Romano D, Pettingell W, Peppercorn J, Paradis M, Gurubhagavatula S, Jenkins B, Wasco W. Genetic heterogeneity of gene defects responsible for familial Alzheimer Disease. Genetica. 1993; 91, 255-263.
8. Tanzi RE, Petrukhin K, Chernov I, Pellequer JL, Wasco W, Ross B, Romano DM, Parano E, Pavone L, Brzustowicz LM, Devoto M, Peppercorn J, **Bush AI**, Sternlieb I, Pirastu M, Gusella JF, Evgrafov O, Penchaszadeh GK, Honig B, Edelman IS, Soares MB, Scheinberg IH, Gilliam TC. The Wilson disease gene is a copper transporting ATPase with homology to the Menkes disease gene. Nature Genetics. 1993; 5, 344-350.
9. **Bush AI**, Pettingell W, Paradis MdP, Tanzi RE. Modulation of A β adhesiveness and secretase site cleavage by zinc. Journal of Biological Chemistry. 1994; 269, 12152-12158.

10. Li QX, Berndt MC, **Bush AI**, Rumble B, Mackenzie I, Friedhuber A, Beyreuther K, Masters CL. Membrane-associated forms of the β A4 amyloid protein precursor of Alzheimer's disease and their expression on the surface of the human platelet. Blood. 1994; 84, 133-142.
11. Multhaup G, **Bush AI**, Pollwein P, Masters CL. Interaction between the zinc(II) and the heparin binding site of the Alzheimer's disease β A4 amyloid precursor protein (APP). FEBS Letters. 1994; 355, 151-154.
12. **Bush AI**, Pettingell WH, Multhaup G, Paradis Md, Vonsattel J-P, Gusella JF, Beyreuther K, Masters CL, Tanzi RE. Rapid induction of Alzheimer A β amyloid formation by zinc. Science. 1994; 265, 1464-1467.
13. **Bush AI**, Pettingell W, Paradis MdP, Tanzi RE, Wasco W. The amyloid β -protein precursor and its mammalian homologues: Evidence for a zinc-modulated heparin-binding superfamily. Journal of Biological Chemistry. 1994; 269, 26618-26621.
14. **Bush AI**, Moir RD, Rosenkranz KM, Tanzi RE. Zinc and Alzheimer's disease. Science. 1995; 268, 1921-1923.
15. Kounnas MZ, Moir RD, Rebeck GW, **Bush AI**, Argraves WS, Tanzi RE, Hyman BT, Strickland DK. LDL receptor-related protein, a multifunctional apolipoprotein E receptor, binds secreted β -amyloid precursor protein and mediates its degradation. Cell 1995; 82, 331-340.
16. Aschner M, Cherian MG, Klaasen CD, Palmiter RD, Erickson JC, **Bush AI**. Metallothioneins in Brain-The Role in Physiology and Pathology. Toxicology and Applied Pharmacology. 1997; 142, 229-242.
17. Huang X, Atwood CS, Moir RD, Hartshorn MA, Vonsattel J-P, Tanzi RE, **Bush AI**. Zinc-induced Alzheimer's A β 1-40 aggregation is mediated by conformational factors. Journal of Biological Chemistry 1997; 272, 26464-26470.
18. Hock C, Golombowski S, Müller-Spahn F, Naser W, Beyreuther K, Mönning U, Schenk D, Vigo-Pelfrey C, **Bush AI**, Moir R, Tanzi RE, Growdon JH, Nitsch RM. Cerebrospinal fluid levels of amyloid precursor protein and amyloid β -peptide in Alzheimer's disease and major depression- inverse correlation with dementia severity. European Neurology 1998; 39, 111-118.
19. Moir RD, Lynch T, **Bush AI**, Multhaup G, Whyte S, Small DH, Tanzi RE, Beyreuther K, Masters CL. Relative Increase in Alzheimer's disease of soluble forms of cerebral A β amyloid protein precursor containing the Kunitz Protease Inhibitory domain. Journal of Biological Chemistry 1998; 273, 5013-5019.
20. Atwood CS, Moir RD, Huang X, Bacarra NME, Scarpa RC, Romano DM, Hartshorn MA, Tanzi RE, **Bush AI**. Dramatic aggregation of Alzheimer A β by Cu(II) is induced by conditions representing physiological acidosis. Journal of Biological Chemistry 1998; 273, 12817-12826.
21. Wolozin B, Maheshwari S, Jones C, Dukoff R, Wallace W, Racchi M, Nagula S, Shulman NR, Sunderland T, **Bush AI**. β -amyloid augments platelet aggregation: reduced activity of familial angiopathy-associated mutants. Molecular Psychiatry 1998; 3, 500-507.
22. Chan C, Dharmarajan A, Atwood CS, Huang X, Tanzi RE, **Bush AI**, Martins RN. Anti-apoptotic action of Alzheimer A β . Alzheimer Reports 1999; 2, 1-6.
23. Moir RD, Atwood CS, Romano DM, Laurans MH, Huang X, **Bush AI**, Smith JD, Tanzi RE. Differential Effects of Apolipoprotein E Isoforms on Metal-Induced Aggregation of A β Using Physiological Concentrations. Biochemistry 1999; 38, 4595-4603.

24. White AR, **Bush AI**, Beyreuther K, Masters CL, Cappai R. Exacerbation of copper toxicity in primary neuronal cultures depleted of cellular glutathione. Journal of Neurochemistry 1999; 72, 2092-2098.
25. Huang X, Atwood CS, Hartshorn MA, Multhaup G, Goldstein LE, Scarpa RC, Cuajungco MP, Gray DN, Lim J, Moir RD, Tanzi RE, **Bush AI**. The A β Peptide of Alzheimer's Disease Directly Produces Hydrogen Peroxide Through Metal Ion Reduction. Biochemistry 1999; 38, 7609-7616.
26. Li Q-X, Maynard C, Cappai R, McLean CA, Cherny RA, Lynch T, Culvenor JG, Trevaskis J, Tanner JE, Bailey KA, Czech C, **Bush AI**, Beyreuther, Masters CL. Intracellular Accumulation of Detergent-Soluble Amyloidogenic A β Fragment of Alzheimer's Disease Precursor Protein in the Hippocampus of Aged Transgenic Mice. Journal of Neurochemistry 1999, 72, 2479-87.
27. White AR, Reyes R, Mercer JFB, Camakaris J, Zheng H, **Bush AI**, Multhaup G, Beyreuther K, Masters CL, Cappai R. Copper levels are increased in the cerebral cortex and liver of APP and APLP2 knockout mice. Brain Research 1999, 842, 439-444.
28. White AR, **Bush AI**, Multhaup G, Beyreuther K, Masters CL, Cappai R. The Alzheimer's disease amyloid precursor protein modulates copper-induced toxicity and oxidative stress in primary neuronal cultures. Journal of Neuroscience 1999, 19, 9170-9179.
29. Cherny RA, Legg JT, McLean CA, Fairlie DP, Huang X, Atwood CS, Tanzi RE, Masters CL, **Bush AI**. Aqueous dissolution of Alzheimer's disease A β amyloid deposits by biometal depletion. Journal of Biological Chemistry 1999, 274, 23223-23228.
30. McLean CA, Cherny RA, Fraser FW, Fuller SJ, Smith MJ, Beyreuther K, **Bush AI**, Masters CL. Soluble pool of A β amyloid as a determinant of severity of neurodegeneration in Alzheimer's Disease. Annals of Neurology 1999, 46, 860-6.
31. Huang X, Cuajungco MP, Atwood CS, Hartshorn MA, Tyndall J, Hanson GR, Stokes KC, Leopold M, Multhaup G, Goldstein LE, Scarpa RC, Saunders AJ, Lim J, Moir RD, Glabe C, Bowden EF, Masters CL, Fairlie DP, Tanzi RE, **Bush AI**. Cu(II) potentiation of Alzheimer A β neurotoxicity: correlation with cell-free hydrogen peroxide production and metal reduction. Journal of Biological Chemistry 1999, 274, 37111-37116.
32. Atwood CS, Scarpa RC, Huang X, Moir RD, Jones WD, Fairlie DP, Tanzi RE, **Bush AI**, Characterization of Copper Interactions with Alzheimer A β Peptides- Identification of an Attomolar Affinity Copper Binding Site on A β 1-42. Journal of Neurochemistry 2000;75 1219-1233.
33. Goldstein LE, Hartshorn MA, Leopold M, Huang X, Atwood CS, Saunders AJ, Lim J, Scarpa RC, Chylak LT, Bowden EF, Tanzi RE, **Bush AI**. 3-hydroxykynurenine and 3-hydroxyanthranilic acid generate hydrogen peroxide and promote α -crystallin crosslinking by metal ion reduction. Biochemistry 2000, 39, 7266-7275.
34. Atwood CS, Huang X, Kahtri A, Scarpa RC, Moir RD, Kim Y-S, Tanzi RE, Roher AE, **Bush AI**. Copper Catalyzed Oxidation of Alzheimer A β . Cellular and Molecular Biology 2000, 46, 777-783.
35. Cherny RA, Barnham KJ, Lynch T, Volitakis I, Li Q.-X., McLean CA, Multhaup G, Beyreuther K, Tanzi RE, Masters CL, **Bush AI**. Chelation and intercalation: complementary properties in a compound for the disaggregation of Alzheimer's disease β -amyloid. Journal of Structural Biology 2000;130(2/3):209-16.
36. Andreassen OA, Dedeoglu A, Klivenyi P, Beal MF, **Bush AI**. N-acetyl-L-cysteine improves survival and preserves motor performance in an animal model of familial amyotrophic lateral sclerosis. NeuroReport 2000;11(11):2491-3.

37. Cuajungco MP, Goldstein LE, Nunomura A, Smith MA, Lim JT, Atwood CS, Huang X, Farrag YW, Perry G, **Bush AI**. Evidence that the β -amyloid plaques of Alzheimer's disease represent the redox-silencing and entombment of A β by zinc. Journal of Biological Chemistry 2000, 275, 19439-19442.
38. Makdissi M, Collie A, Maruff P, Darby DG, **Bush AI**, McCrory P. Computerized cognitive assessment of concussed Australian Rules footballers. British Journal of Sports Medicine 2001; 35, 297-302.
39. White AR, Huang X, Jobling MF, Barrow CJ, Beyreuther K, Masters CL, **Bush AI**, Cappai R. Homocysteine potentiates copper and amyloid beta peptide-mediated toxicity in primary neuronal cultures: possible risk factors in the Alzheimer's-type neurodegenerative pathways. Journal of Neurochemistry 2001; 76, 1509-1520.
40. Rottkamp CA, Raina AK, Zhu X, Gaier E, **Bush AI**, Atwood CS, Chevion M, Perry G, Smith MA. Redox-active iron mediates amyloid- β toxicity. Free Radical Biology and Medicine 2001; 30, 447-450.
41. Jobling MF, Huang X, Stewart LR, Barnham KJ, Curtain C, Volitakis I, Perugini M, White AR, Cherny RA, Masters CL, Barrow CJ, Collins SJ, **Bush AI**, Cappai R. Copper and zinc binding modulates the aggregation and neurotoxic properties of the prion peptide PrP106-126. Biochemistry, 2001; 40, 8073-8084.
42. Curtain CC, Ali F, Volitakis I, Cherny RA, Norton RS, Beyreuther K, Barrow CJ, Masters CL, **Bush AI**, Barnham KJ. Alzheimer's disease amyloid- binds Cu and Zn to generate an allosterically-ordered membrane-penetrating structure containing SOD-like subunits. Journal of Biological Chemistry 2001; 276, 20466-20473.
43. Cherny RA, Atwood CS, Xilinas X, Gray DN, Jones WD, McLean CA, Barnham KJ, Volitakis I, Fraser FW, Kim Y-S, Huang X, Goldstein LE, Moir RD, Lim JT, Zheng H, Beyreuther K, Tanzi RE, Masters CL, **Bush AI**. Treatment with a copper-zinc chelator markedly and rapidly inhibits β -amyloid accumulation in Alzheimer's disease transgenic mice. Neuron, 2001; 30, 665-676.
44. **Bush AI**, Masters CL. Clioquinol's Return. Science 2001; 292, 2251-2252.
45. Rogers JT, Randall JD, Eder PS, Huang X, **Bush AI**, Tanzi RE, Venti A, Peyton SM, Giordano A, Greig N, Sarang SS, Gullans S. Alzheimer's disease drug discovery targeted to the APP mRNA 5' Untranslated Region. J. Mol. Neurosci. 2002; 19, 77-82.
46. **Bush AI**. Is ALS caused by an altered oxidative activity of mutant superoxide dismutase? Nature Neurosci. 2002; 5, 919.
47. Rogers JT, Randall JD, Cahill CM, Eder PS, Huang X, Gunshin H, Leiter L, McPhee J, Sarang SS, Utsuki T, Greig N, Lahiri DK, Tanzi RE, **Bush AI**, Giordano T, Gullans SR. An Iron-responsive Element Type II in the 5' Untranslated Region of the Alzheimer's Amyloid Precursor Protein Transcript. Journal of Biological Chemistry. 2002; 277, 45518-28.
48. Maynard CJ, Cappai R, Volitakis I, Cherny RA, White AR, Beyreuther K, Masters CL, **Bush AI**, Li Q-X. Overexpression of Alzheimer's disease amyloid- β opposes the age-dependent elevations of brain copper and iron. Journal of Biological Chemistry. 2002; 277, 44670-6.
49. Opazo C, Huang X, Cherny RA, Moir RD, Roher AE, White AR, Cappai R, Masters CL, Tanzi RE, Inestrosa NC, **Bush AI**. Metalloenzyme-like activity of Alzheimer's disease β -amyloid: Cu-dependent catalytic conversion of dopamine, cholesterol and biological reducing agents to neurotoxic H₂O₂. Journal of Biological Chemistry. 2002; 277, 40302-40308.

50. Curtain CC, Ali FE, Smith DG, **Bush AI**, Masters CL, Barnham KJ. Metal ions, pH and cholesterol regulate the interactions of Alzheimer's disease amyloid- β peptide with membrane lipid. Journal of Biological Chemistry. 2003; 278, 2977-2982.
51. Kaur D, Yantiri F, Kumar J, Mo JO, Rajagopalan S, Viswanath V, Boonplueang R, Jacobs R, Yang L, Beal MF, DiMonte D, Volitaskis I, Ellerby L, Cherny RA, **Bush AI**, Andersen JK. Genetic or Pharmacological Iron Chelation Prevents MPTP-Induced Neurotoxicity *In Vivo*: A Novel Therapy for Parkinson's Disease. Neuron, 2003; 37, 899-909.
52. Goldstein LE, Muffat JA, Cherny RA, Moir RD, Ericsson MH, Huang X, Mavros C, Coccia JA, Faget K, Fitch KA, Tanzi RE, Chylack LT, **Bush AI**. Cytosolic β -Amyloid Deposition and supranuclear cataracts in lenses from people with Alzheimer's Disease. Lancet, 2003; 361: 1258-65.
53. Ritchie CW, **Bush AI**, Mackinnon A, Macfarlane S, Mastwyk M, MacGregor L, Kiers L, Cherny RA, Li QX, Tammer A, Carrington D, Mavros C, Volitakis I, Xilinas M, Ames D, Davis S, Beyreuther K, Tanzi RE, Masters CL. Metal-protein attenuation with iodochlorhydroxyquin (clioquinol) targeting A β amyloid deposition and toxicity in Alzheimer's disease: a pilot phase 2 clinical trial. Archives of Neurology. 2003; 60, 1685-91.
54. Barnham KJ, Ciccotosto GD, Tickler AK, Ali FA, Smith DG, Williamson NA, Lam Y-H, Carrington D, Tew D, Kocak G, Volitakis I, Separovic F, Barrow CJ, Wade JD, Masters CL, Cherny RA, Curtain CC, **Bush AI**, Cappai R. Neurotoxic, redox-competent Alzheimer's β -amyloid is released from lipid membrane by methionine oxidation. Journal of Biological Chemistry. 2003; 278, 42959-65.
55. Yao S, Cherny RA, **Bush AI**, Masters CL, Barnham KJ. Characterizing Bathocuproine Self-association and Subsequent Binding to Alzheimer's Disease Amyloid- β Peptide by NMR. J. Peptide Science. 2004; 10: 210-217.
56. Atwood CS, Perry G, Zeng H, Kato Y, Jones WD, Huang X, Chen S, Smith MA, **Bush AI**. Copper Mediates Dityrosine Crosslinking of Alzheimer's Amyloid- β . Biochemistry. 2004; 43, 560-8.
57. White AR, Barnham KJ, Huang X, Volitakis I, Beyreuther K, Masters CL, Cherny RA, **Bush AI**, Cappai R. Iron inhibits neurotoxicity induced by trace copper and biological reductants. Journal of Biological Inorganic Chemistry. 2004; 9, 269-80.
58. Lee J-Y, Kim J-H, Hong SH, Lee JY, Cherny RA, **Bush AI**, Palmiter RD, Koh J-Y. Estrogen decreases zinc transporter 3 expression and synaptic vesicle zinc levels in mouse brain. Journal of Biological Chemistry. 2004; 279, 8602-7.
59. Nagano S, Huang X, Moir RD, Payton SM, Tanzi RE, **Bush AI**. Peroxidase activity of COX-2 cross-links A β and generates A β :COX-2 hetero-oligomers that are increased in Alzheimer's disease. Journal of Biological Chemistry. 2004; 279, 14673-8.
60. Friedlich AL, Lee J-Y, van Groen T, Cherny RA, Volitakis I, Cole TB, Palmiter RD, Koh J-Y, **Bush AI**. Neuronal zinc exchange with the blood vessel wall promotes cerebral amyloid angiopathy in an animal model of Alzheimer's disease. Journal of Neuroscience. 2004; 24, 3453-9.
61. Cerpa WF, Barría MI, Chacón MA, Suazo M, González M, Opazo C, **Bush AI**, Inestrosa NC. The N-Terminal Copper-Binding Domain of the Amyloid Precursor Protein Protects Against Cu²⁺-Neurotoxicity *In Vivo*. FASEB J. 2004; 18, 1701-3.
62. Barnham KJ, Haeffner F, Ciccotosto GD, Curtain CC, Tew D, Mavros C, Beyreuther K, Carrington D, Masters CL, Cherny RA, Cappai R, **Bush AI**. Tyrosine gated electron transfer is key to the toxic mechanism of Alzheimer's disease β -amyloid. FASEB J. 2004; 18, 1427-1429.

63. Ciccotosto GD, Tew D, Curtain CC, Smith D, Carrington D, Masters CL, **Bush AI**, Cherny RA, Cappai R, Barnham KJ. Enhanced toxicity and cellular binding of a modified amyloid beta peptide with a methionine to valine substitution. Journal of Biological Chemistry. 2004; 279, 42528–42534.
64. Kiaei M, **Bush AI**, Morrison B, Morrison J, Cherny RA, Volitakis I, Beal MF, Gordon J. Genetically decreased spinal cord copper concentration prolongs life in a transgenic mouse model of amyotrophic lateral sclerosis. Journal of Neuroscience 2004; 24, 7945-50.
65. Dedeoglu A, Cormiera K, Payton S, Tseitlin K, Kremesky JN, Lai L, Li X, Moir RD, Tanzi RE, **Bush AI**, Kowall NW, Rogers JT, Huang X. Preliminary studies of a novel bifunctional metal chelator targeting Alzheimer's amyloidogenesis. Experimental Gerontology. 2004; 39, 1641-1649.
66. Huang X, Atwood CS, Moir RD, Hartshorn MA, Tanzi RE, **Bush AI**. Trace metal contamination initiates the apparent auto-aggregation and oligomerization of Alzheimer's disease β -amyloid. Journal of Biological Inorganic Chemistry. 2004; 9, 654-660.
67. Melov S, Wolf N, Strozyk D, Doctrow SR, **Bush AI**. Mice transgenic for Alzheimer's disease β -amyloid develop lens cataracts that are rescued by antioxidant treatment. Free Radical Biology in Medicine. 2005; 38, 258-61.
68. Ali FE, Separovic F, Barrow CJ, Cherny RA, Fraser F, **Bush AI**, Masters CL, Barnham KJ. Methionine Regulates Copper/Hydrogen Peroxide Oxidation Products of A β . J. Peptide Science. 2005; 11: 353–360.
69. Tickler AK, Smith DG, Ciccotosto GD, Tew DJ, Curtain CC, Carrington D, Masters CL, **Bush AI**, Cherny RA, Cappai R, Wade JD, Barnham KJ. Methylation of the imidazole sidechains of the Alzheimer's disease amyloid-beta peptide results in abolition of SOD-like structures and inhibition of neurotoxicity. Journal of Biological Chemistry. 2005; 280, 13355-63.
70. Puglielli L, Friedlich AL, Setchell KDR, Nagano S, Opazo C, Cherny RA, Barnham KJ, Wade JD, Melov S, Kovacs DM, **Bush AI**. Alzheimer's Disease β -amyloid activity mimics cholesterol oxidase. Journal of Clinical Investigation. 2005; 115, 2556-2563.
71. Siddiq A, Ayoub IA, Chavez JC, Aminova L, Shah S, LaManna JC, Patton SM, Connor JR, Cherny RA, Volitakis I, **Bush AI**, Langsetmo I, Seeley T, Gunzler V, Ratan R. HIF prolyl 4-hydroxylase inhibition: A target for neuroprotection in the central nervous system. Journal of Biological Chemistry. 2005; 280, 41732-41743.
72. Tucker S, Ahl M, **Bush A**, Westaway D, Huang X, Rogers JT. Pilot study of the reducing effect on amyloidosis in vivo by three FDA pre-approved drugs via the Alzheimer's APP 5'untranslated region. Current Alzheimer Research. 2005; 2, 249-254.
73. Haeffner F, Smith DG, Barnham KJ, **Bush AI**. Model Studies of Cholesterol and Ascorbate Oxidation by Copper Complexes: Relevance to Alzheimer's disease β -amyloid Metallochemistry. Journal of Inorganic Biochemistry, 2005; 99, 2403-22.
74. Maynard CJ, Cappai R, Volitakis I, Cherny RA, Masters CL, Li Q.-X., **Bush AI**. Gender and genetic background effects on brain metals homeostasis in APP transgenic and normal mice: implications for Alzheimer beta-amyloid pathology. Journal of Inorganic Biochemistry, 2006; 100, 952-962.
75. Tucker S, Ahl M, Cho HH, Bandyopadhyay S, Cuny GD, **Bush AI**, Goldstein LE, Westaway D, Huang X, Rogers JT. RNA therapeutics directed to the non coding regions of APP mRNA, in vivo anti-amyloid efficacy of paroxetine, erythromycin, and N-acetyl cysteine. Current Alzheimer Research 2006; 3:221-227.

76. Smith DP, Smith DG, Curtain CC, Boas JF, Pilbrow JR, Ciccotosto GD, Lau T-L, Tew DJ, Perez K, Wade JD, **Bush AI**, Drew SC, Separovic F, Masters CL, Cappai R, Barnham KJ. Copper mediated amyloid-beta toxicity is associated with an intermolecular histidine bridge. Journal of Biological Chemistry, 2006; 281, 15145–15154.
77. White AR, Du T, Laughton KM, Volitakis I, Sharples RA, Xilinas ME, Hoke DE, Holsinger RM, Evin G, Cherny RA, Hill AF, Barnham KJ, Li QX, **Bush AI**, Masters CL. Degradation of the Alzheimer Disease Amyloid β -Peptide by Metal-dependent Up-regulation of Metalloprotease Activity Journal of Biological Chemistry 2006; 281, 17670-17680.
78. Opazo C, Luza S, Villemagne V, Volitakis I, Rowe C, Barnham KJ, Strozyk D, Masters CL, Cherny RA, **Bush AI**. Radioiodinated clioquinol as a biomarker for β -amyloid:Zn²⁺ complexes in Alzheimer's disease. Aging Cell 2006; 5, 69-79.
79. Religa D, Strozyk D, Cherny RA, Volitakis I, Haroutunian V, Winblad B, Naslund J, **Bush AI**. Elevated cortical zinc in Alzheimer disease. Neurology. 2006; 67, 69-75.
80. Watanabe S, Nagano S, Duce J, Kiaei M, Li Q-X, Tucker SM, Tiwari A, Brown RJ, Beal MF, Hayward LJ, Culotta VC, Yoshihara S, Sakoda S, **Bush AI**. Increased Affinity For Copper Mediated By Cysteine 111 In Forms Of Mutant Superoxide Dismutase 1 Linked To Amyotrophic Lateral Sclerosis. Free Radical Biology & Medicine. 2007; 42 1534–1542.
81. Fox JH, Kama JK, Lieberman G, Chopra R, Dorsey K, Chopra V, Volitakis I, Cherny RA, **Bush AI**, Hersch SM. Mechanisms of copper ion mediated Huntington's disease progression. PLOS One. 2007; 2 (3), e334.
82. Melov S, Adlard PA, Morten K, Golden TR, Hinerfeld D, Mavros C, Masters CL, Volitakis I, Li Q-X, Laughton K, Hubbard A, Cherny RA, **Bush AI**. Mitochondrial oxidative stress causes hyperphosphorylation of tau. PLOS One. 2007; 2(6): e536. doi:10.1371/journal.pone.0000536.
83. Stoltenberg M, **Bush AI**, Bach G, Smidt K, Larsen A, Rungby J, Lund S, Doering P, Danscher G. Amyloid plaques arise from zinc-enriched cortical layers in APP/PS1transgenic mice and are paradoxically enlarged with dietary zinc deficiency. Neuroscience 2007; 150, 357-369.
84. Nagano S, **Bush AI**. Sensitive, selective and irreversible inhibition of cyclooxygenase-2 activity by copper. ChemMedChem 2008; 3(2), 223-225.
85. Cater MA, McInnes KT, Li Q-X, Volitakis I, La Fontaine S, Mercer JFB, **Bush AI**. Intracellular Copper Deficiency Increases Amyloid- β Secretion by Diverse Mechanisms. Biochem. J. 2008; 412, 141-152.
86. Lavoie S, Murray MM, Deppen P, Knyazeva MG, Berk M, Boulat O, Bovet P, **Bush AI**, Conus P, Copolov D, Fornari E, Meuli R, Solida A, Vianin P, Cuenod M, Buclin T, Do KQ. Glutathione Precursor, N-Acetyl-Cysteine, Improves Mismatch Negativity in Schizophrenia Patients. Neuropsychopharmacology. 2008; **33**, 2187-2199.
87. Colvin RA, **Bush AI**, Volitakis I, Fontaine CP, Thomas D, Kikuchi K, Holmes WR. Insights into Zn²⁺ homeostasis in neurons from experimental and modeling studies. American Journal of Physiology-Cell Physiology. 2008; 294, C726-742.
88. Du T, La Fontaine SL, Abdo M, Bellingham SA, Greenough M, Volitakis I, **Bush AI**, Hudson PJ, Camakaris J, Mercer JF, Crouch PJ, Masters CL, Perreau VM, White AR. Investigating copper-regulated protein expression in Menkes fibroblasts using antibody microarrays. Proteomics. 2008; **8**, 1819-1831.

89. Barnham KJ, Kenche VB, Ciccotosto GD, Smith DP, Tew DJ, Liu X, Perez K, Cranston GA, Johanssen TJ, Volitakis I, **Bush AI**, Masters CL, White AR, Smith JP, Cherny RA, Cappai R. Platinum based inhibitors of amyloid- β as therapeutic agents for Alzheimer's disease. Proceedings of the National Academy of Science USA. 2008; 105, 6813-8.
90. Adlard PA, Cherny RA, Finkelstein DI, Gautier E, Robb E, Cortes M, Volitakis I, Liu X, Smith JP, Perez K, Laughton K, Li QX, Charman SA, Nicolazzo JA, Wilkins S, Deleva K, Lynch T, Kok G, Ritchie CW, Tanzi RE, Cappai R, Masters CL, Barnham KJ, **Bush AI**. Rapid restoration of cognition in Alzheimer's transgenic mice with 8-hydroxy quinoline analogs is associated with decreased interstitial amyloid beta. Neuron. 2008; 59, 43-55.
91. Berk M, Copolov D, Dean O, Lu K, Jeavons S, Schapkaiz I, Anderson-Hunt M, Judd F, Katz F, Katz P, Ording-Jespersen S, Little J, Conus P, Cuenod M, Do KQ, **Bush AI**. N-Acetyl Cysteine as a Glutathione Precursor for Schizophrenia: A Double-Blind, Randomized, Placebo-Controlled Trial. Biological Psychiatry 2008; 64, 361-8.
92. Berk M, Copolov D, Dean O, Lu K, Jeavons S, Schapkaiz I, Anderson-Hunt M, **Bush AI**. N-Acetyl Cysteine for Depressive Symptoms in Bipolar Disorder: A Double-Blind, Randomized, Placebo-Controlled Trial. Biological Psychiatry 2008; 64, 468-75.
93. Lannfelt L, Blennow K, Zetterberg H, Båtsman S, Ames D, Harrison J, Masters CL, Targum S, **Bush AI**, Murdoch R, Wilson J, Ritchie CW. Safety, efficacy and biomarker findings of PBT2 in targeting A β as a modifying therapy of Alzheimer's disease: a Phase IIa, double blind, randomised, placebo-controlled trial. Lancet Neurology 2008; 7, 779-786.
94. Rogers JT, **Bush AI**, Cho H-H, Smith DH, Thomson AM, Friedlich AL, Lahiri DK, Leedman PJ, Huang X, Cahill CC. Iron and the translation of the amyloid precursor protein (APP) and ferritin mRNAs: riboregulation against neural oxidative damage in Alzheimer's disease. Biochemical Society Transactions 2008; 36 (6), 1282-1285.
95. Wu W.-H., Lei P, Liu Q, Hu J, Gunn AP, Chen M.-S., Rui Y.-F., Su X.-Y., Xie Z.-P., Zhao Y.-F., **Bush AI**, Li Y.-M. Sequestration Of Copper From β -Amyloid Promotes Selective Lysis By Cyclen-Hybrid Cleavage Agents. Journal of Biological Chemistry 2008; 283, 31657-31664.
96. Crouch PJ, Hung LW, Adlard PA, Cortes M, Lal V, Filiz G, Perez KA, Nurjono M, Caragounis A, Du T, Laughton K, Volitakis I, **Bush AI**, Li Q-X, Masters CL, Cappai R, Cherny RA, Donnelly PS, White AR, Barnham KJ. Increasing Cu bio-availability inhibits Abeta oligomers and tau phosphorylation. Proceedings of the National Academy of Sciences 2009; 106, 381-386.
97. Strozyk D, Launer LJ, Adlard PA, Cherny RA, Tsatsanis A, Volitakis I, Blennow K, Petrovitch H, White LR, **Bush AI**. Zinc and copper modulate Alzheimer A β levels in human cerebrospinal fluid. Neurobiology of Aging. 2009; 30, 1069-1077.
98. Hare D, Reedy B, Grimm R, Wilkins S, Volitakis I, George JL, Cherny RA, **Bush AI**, Finkelstein DI, Doble P. Quantitative elemental bio-imaging of Mn, Fe, Cu and Zn in 6-hydroxydopamine induced Parkinsonism mouse models. Metallomics 2009; 1, 53-58.
99. Minniti AN, Rebolledo DL, Grez PM, Fadic R, Aldunate R, Volitakis I, Cherny RA, Opazo C, Masters C, **Bush AI**, Inestrosa NC. Intracellular amyloid formation in muscle cells of Abeta-transgenic *Caenorhabditis elegans*: determinants and physiological role in copper detoxification. Molecular Neurodegeneration 2009, 4 (1), 2.
100. White C, Kambe T, Fulcher YG, Sachdev SW, **Bush AI**, Fritsche K, Lee J, Quinn TP, Petris MJ. Copper transport into the secretory pathway is regulated by oxygen in macrophages. Journal of Cell Science 2009, 122: 1315-1321.

101. Grasso G, **Bush AI**, D'Agata R, Rizzarelli E, Spoto G. Enzyme solid-state support assays: a surface plasmon resonance and mass spectrometry coupled study of immobilized insulin degrading enzyme. European Biophysics Journal, 2009, 38: 407-14.
102. Maynard CJ, Cappai R, Volitakis I, Laughton KM, Masters CL, **Bush AI**, Li Q-X. Chronic exposure to high levels of zinc or copper has little effect on brain metal homeostasis or Abeta accumulation in transgenic APP-C100 mice. Cellular and Molecular Neurobiology, 2009, 29, 757-767.
103. Smidt K, Jessen N, Petersen AB, Larsen A, Magnusson N, Jeppesen JB, Stoltenberg M, Culvenor JG, Tsatsanis A, Brock B, Schmitz O, Wogensen L, **Bush AI**, Rungby J. SLC30A3 responds to Glucose- and Zinc Variations in β -cells and is Critical for Insulin Production and in vivo Glucose-Metabolism During β -cell Stress. PLoS ONE, 2009; 4 (5): e5684; 1-12.
104. McColl G, Roberts BR, Gunn AP, Perez KA, Tew DJ, Masters CL, Barnham KJ, Cherny RA, **Bush AI**. The Caenorhabditis elegans Abeta1-42 Model of Alzheimer Disease Predominantly Expresses Abeta3-42. Journal of Biological Chemistry, 2009; 284, 22697-22702.
105. Hung YH, Robb EL, Volitakis I, Ho M, Evin G, Li Q-X, Culvenor JG, Masters CL, Cherny RA, **Bush AI**. Paradoxical condensation of copper with elevated β -amyloid in lipid rafts under cellular copper deficiency conditions: implications for Alzheimer's disease. Journal of Biological Chemistry, 2009; 284, 21899-218907.
106. Bernardo M, Dodd S, Gama CS, Copolov DL, Dean O, Lu K, Jeavons S, Schapkaiz I, Anderson-Hunt M, **Bush AI**, Berk M. Effects of N-acetylcysteine on substance use in bipolar disorder: A randomized placebo controlled clinical trial. Acta Neuropsychiatrica 2009; 21, 239-245.
107. Dean O, **Bush AI**, Berk M, Copolov DL. Glutathione depletion in the brain disrupts short-term spatial memory in the Y-maze in rats and mice. Behavioural Brain Research 2009; 198(1), 258-262.
108. Ellis KA, **Bush AI**, Darby D, De Fazio D, Foster J, Hudson P, Lautenschlager NT, Lenzo N, Martins RN, Maruff P, Masters C, Milner A, Pike K, Rowe C, Savage G, Szoek C, Taddei K, Villemagne V, Woodward M, Ames D, the AIBL research group (2009). The Australian Imaging, Biomarkers and Lifestyle Study of ageing (AIBL): methodology and baseline characteristics of 1112 individuals recruited for a longitudinal study of Alzheimer's disease. International Psychogeriatrics 2009; 21, 672-687.
109. Haeffner F, Barnham KJ, **Bush AI**, Brinck T. Generation of soluble oligomeric beta-amyloid species via copper catalyzed oxidation with implications for Alzheimer's disease: A DFT study. Journal of Molecular Modeling 2010; 16(6), 1103-1108.
110. Baum L, Chan I, Cheung SKK, Mok V, Lam L, Leung V, Hui E, Ng C, Woo J, Chiu H, Zee B, Cheng W, Chan MH, Szeto S, Lui V, Tsoh J, **Bush A**, Lam C, Kwok T. Serum zinc is decreased in Alzheimer's disease and serum arsenic correlates positively with cognitive ability. Biometals 2010; 23(1), 173-179.
111. Adlard PA, Parncutt JM, Finkelstein DI, **Bush AI**. Cognitive loss in Zinc Transporter-3 knockout mice: a phenocopy for the synaptic and cognitive deficits of Alzheimer's disease? Journal of Neuroscience 2010; 30(5), 1631-1636.
112. Faux NG, Ritchie CW, Gunn A, Rembach A, Tsatsanis A, Bedo J, Harrison J, Lannfelt L, Blennow K, Zetterberg H, Ingelsson M, Masters CL, Tanzi RE, Cummings JL, Herd CM, **Bush AI**. PBT2 rapidly improves cognition in Alzheimer's disease: additional phase 2 analyses. Journal of Alzheimer's disease 2010; 20(2), 509-516.

113. Boon WC, van den Buuse M, Wegener N, Martin S, Chua HK, **Bush AI**. Behavioural phenotype of APPC100.V717F transgenic mice overexpressing a mutant Abeta-bearing fragment is associated with reduced NMDA receptor density. Behavioural Brain Research 2010; 209, 27-35.
114. Kishigami H, Nagano S, **Bush AI**, Sakoda S. Monomerized Cu, Zn-superoxide dismutase induces oxidative stress through aberrant copper binding. Free Radical Biology & Medicine 2010; 48, 945-952.
115. Perreau VM, Orchard S, Adlard PA, Bellingham SA, Cappai R, Ciccotosto GD, Cowie TF, Crouch PJ, Duce JA, Evin G, Faux N, Hill AF, Hung YH, James S, Li QX, Mok SS, Tew DJ, White AR, **Bush AI**, Hermiakob H, Masters CL. A domain level interaction network of amyloid precursor protein and Abeta, of Alzheimer's disease. Proteomics 2010; 10, 2377-95.
116. Lui JK, Laws SM, Li Q-X, Villemagne VL, Ames D, Brown B, **Bush AI**, De Ruyck K, Dromey J, Ellis KA, Faux NG, Foster J, Fowler C, Gupta V, Hudson P, Laughton K, Masters CL, Pertile K, Rembach A, Rimajova M, Rodrigues M, Rowe CC, Rumble R, Szoeki C, Taddei K, Taddei T, Trounson B, Ward V, Martins RN. Plasma amyloid β as a biomarker in Alzheimer's disease: the AIBL study of ageing. Journal of Alzheimer's disease 2010; 20, 1233-1242.
117. Lee J-Y, Cho E, Kim T-Y, Kim D-K, Palmiter RD, Volitakis I, Kim JS, **Bush AI**, Koh J-Y. Apolipoprotein E ablation decreases synaptic vesicular zinc in the brain. Biometals 2010; 23, 1085-1095.
118. Zheng Z, White C, Lee J, Peterson TS, **Bush AI**, Sun G, Weisman GA, Petris MJ. Altered microglial copper homeostasis in a mouse model of Alzheimer's disease. Journal of Neurochemistry 2010; 114, 1630-1638.
119. Duce JA, Tsatsanis A, Cater MA, James SA, Robb E, Wikke K, Leong SL, Perez K, Johanssen T, Greenough MA, Cho H-H, Galatis D, Moir RD, Masters CL, McLean C, Tanzi RE, Cappai R, Barnham KJ, Ciccotosto GD, Rogers JT, **Bush AI**. An iron-export ferroxidase activity of β -amyloid protein precursor is inhibited by zinc in Alzheimer's Disease. Cell 2010; 142, 857-867. 10.1016/j.cell.2010.08.014.
120. McColl G, Rogers AN, Alavez S, Hubbard AE, Melov S, Link CD, **Bush AI**, Kapahi P, Lithgow GJ. Insulin-like Signaling Determines Survival During Stress via Post Transcriptional Mechanisms in *C. elegans*. Cell Metabolism 2010; 12, 260-272.
121. Choy KHC, Dean O, Berk M, **Bush AI**, van den Buuse M: Effects of N-acetyl-cysteine treatment on glutathione depletion and a short-term spatial memory deficit in 2-cyclohexene-1-one-treated rats. European Journal of Pharmacology 2010, 649(1-3):224-228.
122. Dean O, **Bush AI**, Berk M, Copolov DL, van den Buuse, M. Interaction of glutathione depletion and psychotropic drug treatment in prepulse inhibition in rats and mice. Pharmacology, Biochemistry and Behavior 2010; 97, 293-300.
123. Hare DJ, George J, Grimm R, Wilkins S, Adlard PA, Cherny RA, **Bush AI**, Finkelstein DI, Doble P. Three-dimensional elemental bio-imaging of Fe, Zn, Cu, Mn and P in a 6-hydroxydopamine lesioned mouse brain. Metallomics 2010; 2, 745-753.
124. Norgate M, Southon A, Greenough M, Cater M, Farlow A, Batterham P, **Bush AI**, Subramaniam N, Burke R, Camakaris J. Syntaxin 5 Is Required for Copper Homeostasis in Drosophila and Mammals. PLoS ONE 2010; 5(12): e14303. doi:10.1371/journal.pone.0014303.
125. Berk M, Munib A, Dean O, Malhi GS, Kohlmann K, Schapkaiz I, Jeavons S, Katz F, Anderson-Hunt M, Conus P, Hanna B, Otmar R, Ng F, Copolov D, **Bush AI**. Qualitative Methods in Early-

- Phase Drug Trials: Broadening the Scope of Data and Methods from an RCT of N-Acetylcysteine in Schizophrenia. Journal of Clinical Psychiatry 2011; 72 (7), 909-913.
126. Sittironnarit G, Ames D, **Bush AI**, Faux N, Flicker L, Foster J, Hilmer S, Lautenschlager NT, Maruff P, Masters CI, Martins RN, Rowe C, Szoeka C, Ellis KA (AIBL research group). Effects of anticholinergic drugs on cognitive function in older Australians: Results from the AIBL study. Dementia and Geriatric Cognitive Disorders 2011; 31, 173-178. (DOI: 10.1159/000325171)
 127. Magalhães PV, Dean OM, **Bush AI**, Copolov DL, Malhi GS, Kohlmann K, Jeavons S, Schapkaitz I, Anderson-Hunt M, Berk M. N-acetyl cysteine add-on treatment for bipolar II disorder: A subgroup analysis of a randomized placebo-controlled trial. Journal of Affective Disorders 2011; 129 (1-3), 317 – 320.
 128. Greenough MA, Volitakis I, Li Q-X, Laughton K, Evin G, Ho M, Dalziel AH, Camakaris J, **Bush AI**. Presenilins promote the cellular uptake of copper and zinc and maintain Cu-chaperone of SOD1-dependent Cu/Zn superoxide dismutase activity. Journal of Biological Chemistry 2011; 286, 9776-9786.
 129. Gupta VB, Laws SM, Villemagne VL, Ames D, **Bush AI**, Ellis KA, Lui JK, Masters C, Rowe C, Szoeka C, Taddei K, Martins RN. (AIBL Research Group 10). Plasma Apolipoprotein E and Alzheimer's disease risk: the AIBL study of ageing. Neurology 2011; 76, 1091-1098.
 130. Acevedo KM, Hung YH, Dalziel AH, Li Q-X, Laughton K, Wikke K, Rembach A, Roberts B, Masters CL, **Bush AI**, Camakaris J. Copper promotes the trafficking of the amyloid precursor protein. Journal of Biological Chemistry 2011; 286, 8252-8262.
 131. Adlard PA, Bica L, White AR, Nurjono M, Filiz G, Crouch PJ, Donnelly PS, Cappai R, Finkelstein DI, **Bush AI**. Metal ionophore treatment restores dendritic spine density and synaptic protein levels in a mouse model of Alzheimer's disease. PLoS ONE, 2011; 6 (3), e17669 (DOI: 10.1371/journal.pone.0017669.g003).
 132. Fox J, Connor T, Stiles M, Kama J, Lui Z, Dorsey K, Liebermann G, Sapp E, Cherny R, Banks M, Volitakis I, DiFiglia M, Berezovska O, **Bush AI**, Hersch S. Cysteine oxidation within N-terminal mutant Huntingtin promotes oligomerization and delays clearance of soluble protein. Journal of Biological Chemistry, 2011; 286,.18320–18330 (DOI: 10.1074/jbc.M110.199448).
 133. Dean OM, van den Buuse M, Berk M, Copolov DL, Mavros C, **Bush AI**. N-acetyl cysteine restores brain glutathione loss in combined 2-cyclohexene-1-one and D-amphetamine-treated rats: relevance to schizophrenia and bipolar disorder. Neuroscience Letters 2011; 499, 149-153 (DOI: 10.1016/j.neulet.2011.05.027).
 134. Magalhães PV, Dean OM, **Bush AI**, Copolov DL, Malhi GS, Kohlmann K, Jeavons S, Schapkaitz I, Anderson-Hunt M, Berk M. Dimensions of improvement in a clinical trial of N-acetyl cysteine for bipolar disorder. Acta Neuropsychiatrica, 2011; 23, 87–88.
 135. Berk M, Dean O, Cotton SM, Gama CS, Kapczynski F, Fernandez B, Kohlmann K, Jeavons S, Hewit K, Allwang C, **Bush AI**, Schapkaitz I, Dodd S, Malhi GS. The Efficacy of N-acetylcysteine as an Adjunctive Treatment in Bipolar Depression: An open label trial. Journal of Affective Disorders 2011; 135, 389-394.
 136. Faux NG, Ellis KA, Porter L, Fowler CJ, Laws SM, Martins RN, Pertile KK, Rembach A, Rowe CC, Rumble RL, Szoeka C, Taddei K, Taddei T, Trounson BO, Villemagne VL, Ward V, Ames D, Masters CL, the AIBL research group, **Bush AI**. Homocysteine, vitamin B12 and folic acid levels in Alzheimer's disease, mild cognitive impairment and healthy elderly: baseline characteristics in subjects of the Australian Imaging Biomarker Lifestyle study. Journal of Alzheimer's Disease 2011, 27(4), 909-22. DOI: 10.3233/JAD-2011-110752. PMID: PMID 21891867.

137. Crouch PJ, Savva MS, Hung LW, Donnelly PS, Mota AI, Parker SJ, Greenough MA, Volitakis I, Adlard PA, Cherny RA, Masters CL, **Bush AI**, Barnham KJ, White AR. The Alzheimer's therapeutic PBT2 promotes amyloid- β degradation and GSK3 phosphorylation via a metal chaperone activity. Journal of Neurochemistry 2011; 119(1), 220-230.
138. Thompson J, Berk M, Dean O, Kohlmann K, Jeavons S, **Bush A**, Copolov D. Who's left? Symptoms of schizophrenia that predict clinical trial dropout. Human Psychopharmacology: Clinical and Experimental 2011; 26(8), 609-13 [doi:10.1002/hup.1253].
139. Magalhães PV, Dean OM, **Bush AI**, Copolov DI, Weisinger D, Malhi GS, Kohlmann K, Jeavons S, Schapkaitz I, Anderson-Hunt M, Berk M. Systemic illness moderates the impact of N-acetyl cysteine in bipolar disorder. Prog Neuropsychopharmacol Biol Psychiatry 2011; 1–4. doi:10.1016/j.pnpbp.2011.11.011.
140. Li H, Evin G, Hill AF, Hung YH, **Bush AI**, Garner B. Dissociation of ERK signalling inhibition from the anti-amyloidogenic action of synthetic ceramide analogues. Clinical Science 2012; 122 (9), 409-419.
141. James SA, Volitakis I, Adlard PA, Duce JA, Masters CL, Cherny RA, **Bush AI**. Elevated labile Cu is associated with oxidative pathology in Alzheimer's disease. Free Radical Biology & Medicine 2012; 52, 298-302.
142. Sona A, Zhang P, Ames D, **Bush AI**, Lautenschlager NT, Martins RN, Masters CL, Szoeki C, Taddei K, Rowe C, Ellis K, and the AIBL research group . Predictors of rapid cognitive decline in Alzheimer's disease: results from the Australian Imaging, Biomarkers and Lifestyle (AIBL) study of ageing. International Psychogeriatrics 2012; 24(02), 197–204. doi:10.1017/S1041610211001335.
143. McColl G, James SA, May S, Howard DL, Ryan CG, Kirkham R, Moorhead GF, Paterson D, de Jonge MD, **Bush AI**. *Caenorhabditis elegans* maintains highly compartmentalized cellular distribution of metals and steep concentration gradients of Manganese. PLoS ONE 2012; 7(2), e32685 [doi:10.1371/journal.pone.0032685]
144. Duce JA, Ayton S, Miller AA, Tsatsanis A, Lam LQ, Leone L, Corbin JE, Butzkueven H, Kilpatrick TJ, Rogers JT, Barnham KJ, Finkelstein DI, **Bush AI**. Amine oxidase activity of beta-amyloid precursor protein modulates systemic and local catecholamine levels. Molecular Psychiatry 2013; 18(2), 245-254.
145. Lei P, Ayton S, Finkelstein DI, Spoerri L, Ciccotosto GD, Wright DK, Wong BXW, Adlard PA, Cherny RA, Lam LQ, Roberts BR, Volitakis I, Egan GF, McLean C, Cappai R, Duce JA, **Bush AI**. Tau deficiency induces a parkinsonism with dementia phenotype by impairing APP-mediated iron export. Nature Medicine 2012; 18(2), 291-5. [doi: 10.1038/nm.2613].
146. Hung LW, Villemagne VL, Cheng L, Sherratt NA, Ayton S, White AR, Crouch PJ, Lim SC, Leong SL, Wilkins S, George J, Roberts B, Pham CL, Chiu FCK, Shackleford DM, Powell AK, Masters CL, **Bush AI**, O'Keefe G, Culvenor JG, Cappai R, Cherny RA, Donnelly PS, Hill AF, Finkelstein DI, Barnham KJ. The hypoxia imaging agent, Cu¹¹ (at-sm), is neuroprotective and improves motor and cognitive functions in multiple animal models of Parkinson's disease. Journal of Experimental Medicine 2012; 209(4), 837-854.
147. Rosas HD, Chen YI, Doros G, Salat DH, Chen Nk, Kwong KK, **Bush AI**, Fox J, Hersch SM. Alterations in Brain Transition Metals in Huntington Disease: An Evolving and Intricate Story. Archives of Neurology 2012; 69 (7), 887-893.
148. Gu BJ, Duce JA, Valova VA, Wong B, **Bush AI**, Petrou S, Wiley JS. The P2X7-mediated scavenger activity of mononuclear phagocytes towards non-opsonized particles and apoptotic cells is inhibited by serum glycoproteins but remains active in cerebrospinal fluid. Journal of Biological Chemistry 2012; 287, 17318-17330 [Epub March 29, 2012].

149. Doecke JD, Laws SM, Faux NG, Wilson W, Burnhams SC, Lam C-P, Mondal A, Bedo J, **Bush AI**, Brown B, De Ruyck K, Ellis KA, Fowler C, Gupta VB, Head R, Macaulay L, Pertile K, Rowe CC, Rembach A, Rodrigues M, Rumble R, Szoeka C, Taddei K, Taddei T, Trounson B, Ames D, Masters CL, Martins RN. Blood-based protein biomarkers for diagnosis of Alzheimer's disease. Archives of Neurology 2012; 69(10), 1318-1325.
150. Manso Y, Carrasco J, Comes G, Meloni G, Adlard PA, **Bush AI**, Vasak M, Hidalgo J. Characterization of the role of metallothionein-3 in an animal model of Alzheimer's disease. Cellular and Molecular Life Sciences 2012 Nov; 69(21):3683-700. doi: 10.1007/s00018-012-1047-9.
151. Manso Y, Carrasco J, Comes G, Adlard PA, **Bush AI**, Hidalgo J. Characterization of the role of the antioxidant proteins metallothioneins 1 and 2 in an animal model of Alzheimer's disease. Cellular and Molecular Life Sciences 2012; 69 (21), 3665-81 [doi: 10.1007/s00018-012-1045-y].
152. Brown BM, Peiffer JJ, Taddei K, Lui JK, Laws SM, Gupta VB, Taddei T, Ward VK, Rodrigues MA, Burnham S, Rainey-Smith SR, Villemagne VL, **Bush A**, Ellis KA, Masters CL, Ames D, Macaulay SL, Szoeka C, Rowe CC, Martins RN, and the AIBL Research Group. Physical activity and amyloid- β plasma and brain levels: results from the Australian Imaging, Biomarkers and Lifestyle Study of Ageing. Molecular Psychiatry 2012 Aug 14 doi:10.1038/mp.2012.107.
153. Berk M, Dean OM, Cotton SM, Gama CS, Kapczynski F, Fernandes B, Kohlmann K, Jeavons S, Hewitt K, Moss K, Allwang C, Schapkaitz I, Cobb H, **Bush AI**, Dodd S, Malhi GS. Maintenance N-acetyl cysteine treatment for bipolar disorder: A double-blind randomised placebo controlled trial. BMC Medicine 2012; 10(1), 91 [doi: 10.1186/1741-7015-10-91].
154. Dean OM, **Bush AI**, Copolov DL, Kohlmann K, Jeavons S, Schapkaitz I, Anderson-Hunt M, Berk M. Effects of N-acetyl cysteine on cognitive function in bipolar disorder. Psychiatry and Clinical Neurosciences 2012; 66, 514-517.
155. Verdile G, Laws SM, Henley D, Ames D, **Bush AI**, Ellis KA, Faux NG, Gupta VB, Li Q-X, Masters CL, Pike KE, Rowe CC, Szoeka C, Taddei K, Villemagne VL, Martins RN; the AIBL Research Group. Associations between gonadotropins, testosterone, and β amyloid in men at risk of Alzheimer's disease. Molecular Psychiatry 2012 Oct 23. doi: 10.1038/mp.2012.147. [Epub ahead of print].
156. Rembach A, Doecke JD, Roberts BR, Watt AD, Faux NG, Volitakis I, Pertile KK, Rumble RL, Trounson BO, Fowler CJ, Wilson W, Ellis KA, Martinus RN, Rowe CC, Villemagne VL, Ames D, Masters CL, AIBL research group, **Bush AI**. Longitudinal analysis of serum copper and ceruloplasmin in Alzheimer's disease. Journal of Alzheimer's disease 2013; 34(1), 171-182.
157. Cherny RA, Ayton S, Finkelstein DI, **Bush AI**, McColl G, Massa SM. PBT2 reduces toxicity in a *C.elegans* model of polyQ aggregation and extends lifespan, reduces striatal atrophy and improves motor performance in the R6/2 mouse model of Huntington's disease. Journal of Huntington's Disease 2012; 1(2), 211-219.
158. Ayton S, Lei P, Duce JA, Wong BXW, Sedjahtera A, Adlard PA, **Bush AI**, Finkelstein DI. Ceruloplasmin dysfunction and therapeutic potential for Parkinson's disease. Annals of Neurology 2013; 73 (4), 554-559.
159. McColl G, Roberts BR, Pukala TL, Kenche VB, Roberts CM, Link CD, Ryan TM, Masters CL, Barnham KJ, **Bush AI**, Cherny RA. Utility of an improved model of amyloid-beta (A β 1-42) toxicity in *Caenorhabditis elegans* for drug screening for Alzheimer's disease. Molecular Neurodegeneration 2012; 7(1); 57.
160. Rembach A, Faux NG, Watt AD, Pertile KK, Rumble RL, Trounson BO, Fowler CJ, Roberts BR, Perez KA, Li Q-X, Laws SM, Taddei K, Rainey-Smith S, Robertson JS, Vandijck M, Vanderstichele H, Barnham KJ, Ellis KL, Szoeka C, Macaulay LS, Rowe CC, Villemagne VL, Ames D, Martins RN, **Bush AI**, Masters CL; the AIBL research group. Changes in plasma amyloid beta in a longitudinal study of aging and Alzheimer's disease. Alzheimer's and Dementia 2013; 1-9 [Epub ahead of print].
161. Lim YY, Pietrzak RH, Ellis KA, Jaeger J, Harrington K, Ashwood T, Szoeka C, Martins RN, **Bush AI**, Masters CL, Rowe CC, Villemagne VL, Ames D, Darby D, Maruff P. Rapid decline in episodic

- memory in healthy older adults with high amyloid- β . Journal of Alzheimer's disease 2013; 33 (3), 675-679.
162. Lim YY, Ellis KA, Harrington K, Pietrzak RH, Gale J, Ames D, **Bush AI**, Darby D, Martins RN, Masters CL, Rowe CC, Savage G, Szoeka C, Villemagne VL, Maruff P, for the AIBL Research Group. Cognitive decline in adults with amnesic mild cognitive impairment and high amyloid- β : Prodromal Alzheimer's disease. Journal of Alzheimer's disease 2013; 33(4), 1167-1176.
163. Ellis KA, Lim YY, Harrington K, Ames D, **Bush AI**, Darby D, Martins RN, Masters CL, Rowe CC, Savage G, Szoeka C, Villemagne VL, Maruff P. Decline in cognitive function over 18 months in healthy older adults with high amyloid- β . Journal of Alzheimer's Disease 2013; 34(4), 861-871.
164. Lim YY, Ellis KA, Harrington K, Kamer A, Pietrzak RH, **Bush AI**, Darby D, Martins RN, Masters CL, Rowe CC, Savage G, Szoeka C, Villemagne VL, Ames D, Maruff P (AIBL Research Group). Cognitive consequences of high A β amyloid in mild cognitive impairment and healthy older adults: implications for early detection of Alzheimer's disease. Neuropsychology 2013; 27(3), 322-332.
165. Ayton S, George JL, Adlard PA, **Bush AI**, Cherny RA, Finkelstein DI. The effect of dopamine on MPTP-induced rotarod disability. Neuroscience Letters 2013; 543, 105-109.
166. Burnham SC, Faux NG, Wilson W, Laws SM, Ames D, Bedo J, **Bush AI**, Doecke JD, Ellis KA, Head R, Jones G, Kiviveri H, Martins RN, Rembach A, Rowe C, Salvado O, Lance Macaulay S, Masters CL, Villemagne VL; Alzheimer's Disease Neuroimaging Initiative; Australian Imaging, Biomarkers and Lifestyle Study Research Group. A blood based predictor for neocortical A β burden in Alzheimer's disease: results from the AIBL study. Molecular Psychiatry, doi: 10.1038/mp.2013.40 [Epub ahead of print].
167. Magalhães PV, Dean OM, **Bush AI**, Copolov DL, Malhi GS, Kohlmann K, Jeavons S, Schapkaiz I, Anderson-Hunt M, Berk M. A preliminary investigation on the efficacy of N-acetyl cysteine for mania or hypomania. Australian and New Zealand Journal of Psychiatry 2013; 47(6):564-568.
168. Lim YY, Jaeger J, Harrington K, Ashwood T, Ellis KA, Stöfler A, Szoeka C, Lachovitzki R, Martins RN, Villemagne VL, **Bush A**, Masters CL, Rowe CC, Ames D, Darby D, Maruff P. Three month stability of the CogState brief battery in healthy older adults, mild cognitive impairment and Alzheimer's disease: Results from the Australian Imaging, Biomarkers and Lifestyle – Rate of Change sub-study (AIBL-ROCS). Archives of Clinical Neuropsychology 2013; 28(4):320-330.
169. Southon A, Greenough MA, Ganio G, **Bush AI**, Burke R, Camakaris J. Presenilin promotes dietary copper uptake. PLoS ONE 8(5): e62811. doi:10.1371/journal.pone.0062811.
170. Gunn AP, Roberts BR, and **Bush AI**. Rapid Generation of Dityrosine Cross-linked A β Oligomers via Cu-redox Cycling. In Sigursson EM (Ed) Amyloid Proteins, Methods and Protocols; Series: Methods in Molecular Biology. Humana Press 2012; 849, 3–10.
171. Moore E, Mander AG, Ames D, Kotowicz M, Carne R, Brodaty H, Woodward M, Boundy K, Ellis K, **Bush AI**, Faux N, Martins R, Szoeka C, Rowe C, Watters DA, and the AIBL investigators. Increased risk of cognitive impairment in patients with diabetes is associated with metformin. Diabetes Care, in press (accepted Apr 29, 2013).
172. Lim YY, Villemagne VL, Laws SM, Ames D, Pietrzak RH, Ellis KA, Harrington KD, Bourgeat P, Salvado O, Darby D, Snyder PJ, **Bush AI**, Martins RN, Masters CL, Rowe CC, Nathan PJ, Maruff P. BDNF Val66Met, A β amyloid and cognitive decline in preclinical Alzheimer's disease. Neurobiology of Aging, in press, (available online 11 June).
173. Cater MA, Pearson HB, Wolyneic K, Klaver P, Bilandzic M, Paterson BM, **Bush A**, Humbert PO; La Fontaine S, Donnelly PS, Haupt Y. Increasing intracellular bioavailable copper selectively targets prostate cancer cells. ACS Chemical Biology, in press, DOI: 10.1021/cb400198p.
174. James SA, de Jonge MD, Howard DL, **Bush AI**, Paterson D, McColl G. Direct *in vivo* imaging of essential bioinorganics in *Caenorhabditis elegans*. Metallomics 2013; 5, 627-635.

175. Dean OM, Jeavons S, Malhi GS, Cotton SM, Tanious M, Kohlmann K, Hewitt K, Moss K, Allwang C, Schapkaitz I, Robbins J, Cobb H, Dodd S, **Bush A**, Berk M. Deserves a hearing? A case report of remitting tinnitus with N-acetyl cysteine. African Journal of Psychiatry 2013; 16, 238-240.
176. Geiser J, De Lisle RC, Finkelstein D, Adlard PA, **Bush AI**, Andrews GK. Clioquinol Synergistically Augments Rescue by Zinc Supplementation in a Mouse Model of Acrodermatitis Enteropathica. PLoS ONE, in press (accepted 12 July).

Reviews, Chapters and Editorials

177. Beyreuther K, **Bush AI**, Dyrks T, Hilbich C, König G, Mönning U, Multhaup G, Prior R, Rumble B, Schubert W, Small DH, Weidemann A, Masters CL. Mechanisms of amyloid deposition in Alzheimer's disease. in *Aging and Alzheimer's disease: sensory systems, neuronal growth, and neuronal metabolism*. Annals of the New York Academy of Sciences 1991; 640, 129-139.
178. **Bush AI**, Beyreuther K, Masters CL. Studies of circulating forms of amyloid precursor protein of Alzheimer's disease. In: 57th Beattie-Smith Lecture: Proceedings from the 27th Anniversary of the Department of Psychiatry, The University of Melbourne, G.D. Burrows (ed), pp 14-23, 1991.
179. **Bush AI**, Beyreuther K, Masters CL. Circulating forms of Alzheimer amyloid precursor protein. Chapter 70 in Iqbal K, McLachlan DRC, Winblad B, Wisniewski H (eds.) *Alzheimer's disease: Basic mechanisms, diagnosis and therapeutic strategies*. John Wiley and Sons Ltd (London) 1991; 547-555.
180. **Bush AI**, Beyreuther K, Masters CL. β A4 amyloid protein and its precursor in Alzheimer's disease. Pharmacology and Therapeutics 1992; 56, 97-117.
181. **Bush AI**, Beyreuther K, Masters CL. The β A4 Amyloid Protein Precursor In Human Circulation. Annals of the New York Academy of Sciences 1993; 695, 175-182.
182. Li Q-X, **Bush AI**, Beyreuther K, Masters CL. The human platelet as a model to study the function of the β A4 amyloid protein precursor of Alzheimer's disease. Chapter 47 in Corain B, Iqbal K, Nicolini M, Winblad B, Wisniewski H, Zatta P (Eds.) *Alzheimer's disease: Advances in basic and clinical research*. John Wiley and Sons Ltd (London) 1993; 397-403.
183. Whyte S, **Bush AI**, Beyreuther K, Masters CL. An abnormality of plasma β A4 amyloid protein precursor in Alzheimer's disease. Chapter 10 in Corain B, Iqbal K, Nicolini M, Winblad B, Wisniewski H, Zatta P (Eds.) *Alzheimer's disease: Advances in basic and clinical research*. John Wiley and Sons Ltd (London) 1993; 89-95.
184. **Bush AI**, Pettingell W, Tanzi RE. The roles of zinc and copper in the function and metabolism of the amyloid protein precursor superfamily. *Fondation IPSEN Research and Perspectives in Alzheimer's disease: Amyloid Protein Precursor in Development, Aging and Alzheimer's disease*. Masters CL, Beyreuther K, Trillet M, Christen Y (Eds.) Springer-Verlag (Berlin) 1994; 169-180.
185. Tanzi RE, **Bush AI**, Wasco W. Genetic studies of Alzheimer's disease: lessons learned and future imperatives. Neurobiology of Aging. 1994; 15(Suppl. 2), S145-S148.
186. Tanzi R, Romano D, Gaston S, Crowley A, **Bush AI**, Peppercorn J, Paradis M, Pettingell W, Gurubhagavatula S, Kovacs D, Haines J, St George-Hyslop P, Wasco W. The diverse molecular nature of inherited Alzheimer's disease. *Fondation IPSEN Research and Perspectives in Alzheimer's disease: Amyloid Protein Precursor in Development, Aging and Alzheimer's disease*. Masters CL, Beyreuther K, Trillet M, Christen Y (Eds.) Springer-Verlag (Berlin) 1994; 181-189.
187. **Bush AI**, Tanzi RE. The role of zinc in the cerebral deposition of A β amyloid in Alzheimer's disease. Iqbal K *et al.* (Eds) *Alzheimer's disease: Research Advances in Alzheimer's disease and Related Disorders*. John Wiley and Sons Ltd (London). 1995; 607-618.
188. Hartstein J, Pace U, Hartstein ME, Tanzi RE, **Bush AI**. Zinc and Macular Degeneration. Annals of Ophthalmology 1995; 27, 194-196.

189. Atwood CS, Moir RD, Huang X, Tanzi RE, **Bush AI**. Cerebral zinc metabolism in Alzheimer's disease. In: *Molecular Mechanisms of Dementia*. Eds. Tanzi, R.E., Wasco, W. (Humana Press Inc., Totowa, NJ). 1996; 225-237.
190. Atwood CS, Huang X, Moir RD, Tanzi RE, **Bush AI**. Neurochemical environments that precipitate A β . In: *Alzheimer's disease: Biology, Diagnosis and Therapeutics*. Eds. Iqbal, K., Winblad, B., Nishimura, T., Takeda, M. and Wisniewski, H.M. John Wiley & Sons Ltd, Chichester. 1997; 327-337.
191. **Bush AI**, Tanzi RE. The Molecular Biology of A β amyloid deposition in Alzheimer's disease. Dani SU, Hori A, Walter GF. (Eds) *Principles of Neural Aging: Molecular Turnover and Cellular Degeneration*. Springer-Verlag. 1997; 103-113.
192. Whyte S, Jones L, Coulson EJ, Moir RD, **Bush AI**, Beyreuther K, Masters CL. The metabolism of the amyloid precursor protein of Alzheimer's disease and dietary zinc. In: *Alzheimer's disease: Biology, Diagnosis and Therapeutics*. Eds. Iqbal, K., Winblad, B., Nishimura, T., Takeda, M. and Wisniewski, H.M. John Wiley & Sons Ltd, Chichester. 1997; 417-422.
193. **Bush AI**, Tanzi RE. Alzheimer's disease-related abnormalities of APP isoforms in the platelet: the brain's delegate in the periphery? *Archives of Neurology* 1998; 55, 1179-1180.
194. O'Malley C, Saunders A, **Bush AI**, Tanzi RE. Potential therapeutic targets for Alzheimer's disease. *Expert Opinion on Therapeutic Targets* 1998; 2, 157-179.
195. Atwood CS, Huang X, Moir RD, Tanzi RE, **Bush AI**. The Role of Free Radicals and Metal Ions in the Pathogenesis of Alzheimer's disease. In: *Metal Ions in Biological Systems, Volume 36: Interrelations between free radicals and metal ions in life processes*. Eds. Sigel A, Sigel H. Marcel Dekker, Inc., New York. 1999, 309-364.
196. **Bush AI**, Huang X, Fairlie DP. The Possible Origin of Free Radicals from Amyloid β Peptides In Alzheimer's Disease. *Neurobiology of Aging* 1999, 20, 335-337.
197. Cherny RA, Masters CL, Beyreuther K, **Bush AI**. Isolating components of human brain: The purification of A β and the Alzheimer's amyloid precursor protein. Eds. Dean A, Kleinman, J.E. and Hyde, T.M.. Chapter 8 in *Using CNS Tissue in Psychiatric Research: A practical guide*. Harwood Academic Publishers, Amsterdam. 1999; 141-158.
198. Cuajungco MP, Lees GJ, Kydd RR, Tanzi RE, **Bush AI**. Zinc and Alzheimer's disease: An Update. *Nutritional Neuroscience*. 1999, 2, 191-208.
199. Huang X, Atwood CS, Goldstein Lee E, Hartshorn MA, Saunders AJ, Moir RD, Tanzi RE, **Bush AI**. Metal-catalyzed redox activity of A β - the major source of amyloid-associated oxidative stress in Alzheimer's disease. Ch. 41 in: *Alzheimer's disease and Related Disorders*. Eds. Iqbal K, Swaab DF, Winblad B, and Wisniewski HM. John Wiley & Sons Ltd., Chichester. 1999, 383-390.
200. Moir RD, Atwood CS, Tanzi RE, Huang X, **Bush AI**. Mounting evidence for the involvement of zinc and copper in Alzheimer's disease *Eur. J. Clin. Inv.* 1999; 29: 569-571.
201. **Bush AI**. Metals and Neuroscience. *Current Opinion in Chemical Biology*. 2000; 4,184-191.
202. **Bush AI**, Atwood CS, Goldstein LE, Huang X, Rogers J. Could A β and A β PP be antioxidants? *Journal of Alzheimer's disease* 2000; 2:83-84.
203. Cuajungco MP, Fagét K, Huang X, Tanzi RE, **Bush AI**. Metal Chelation as a Potential Therapy for Alzheimer's disease. *Ann. NY Acad. Sci.* 2000; 920: 292-304.
204. Huang X, Cuajungco MP, Atwood CS, Moir RD, Tanzi RE, **Bush AI**. Alzheimer's disease, β -amyloid protein, and zinc. *Journal of Nutrition* 2000; 130:1488S-1492S.
205. Lynch T, Cherny RA, **Bush AI**. Oxidative processes in Alzheimer's disease: the role of A β -metal interactions. *Experimental Gerontology* 2000; 35:445-51.

206. Atwood CS, Huang X, Moir RD, Smith, MA, Tanzi, RE, Roher AE, **Bush, AI**, Perry G. Neuroinflammatory Responses in the Alzheimer's disease Brain Promote the Oxidative Post-translational Modification of Amyloid Deposits. In: Alzheimer's Disease: Advances in Etiology, Pathogenesis and Therapeutics pp. 341-361, Eds. K. Iqbal, S.S. Sisodia and Bengt Winblad, John Wiley & Sons, Ltd., UK. 2001.
207. **Bush AI**. Therapeutic targets in the Biology of Alzheimer's disease. Current Opinion in Psychiatry 2001; 14:341-348.
208. **Bush AI**. Parallels between the redox properties and toxicity of A β in Alzheimer's disease and mutant CuZn SOD in Familial Amyotrophic Lateral Sclerosis. Chapter 36 in: Alzheimer's Disease: Advances in Etiology, Pathogenesis and Therapeutics, Eds: K. Iqbal, S.S. Sisodia, B. Winblad. John Wiley & Sons, Ltd., UK. 2001; 393-406.
209. **Bush AI**, Goldstein LE. Specific metal-catalysed protein oxidation reactions in chronic degenerative disorders of ageing: focus on Alzheimer's disease and age-related cataracts. In: Novartis Foundation Symposium 235. Ageing vulnerability: causes and interventions. Eds: G. Bock, J. Goode. John Wiley & Sons, Ltd., Chichester, UK. 2001, 26-43.
210. **Bush AI**. C is for clioquinol: Reply to Simon Melov, PhD. TINS 2002; 25, 123-4.
211. **Bush AI**. Metal Complexing Agents as Therapies for Alzheimer's disease. Neurobiol. Aging. 2002; 23, 1031-8.
212. Frederickson CJ, **Bush AI**. Synaptically released zinc: physiological functions and pathological effects. Biometals 2002; 14, 353-366.
213. **Bush AI**, Tanzi RE. The galvanization of β -amyloid in Alzheimer's disease. Proc. Natl. Acad. Sci USA. 2002; 99, 7317-9.
214. Friedlich AL, Nagano S, **Bush AI**. Copper, Zinc and Alzheimer's disease. Chapter 14 in: Diet-Brain Connections. Impact on memory, mood, aging and disease pp229-240. Ed. MP Mattson, Kluwer Academic Publishers, Boston, USA. 2002.
215. Rogers J, Huang X, **Bush AI**. Therapeutic Targets for Alzheimer's disease. Chapter 24 in Neuroprotection pp. 561-589. Eds. E. Lo & Joe Marwah, Prominent Press, Scottsdale, USA. 2002.
216. **Bush AI**. Losing my mind – An intimate look at life with Alzheimer's. Science. 2003; 299, 1318-9.
217. **Bush AI**. The Metallobiology of Alzheimer's disease. TINS 2003; 26(4):207-214.
218. **Bush AI**. Copper, Zinc, and the Metallobiology of Alzheimer's disease. Alzheimer's disease and Associated Disorders. 2003; 17: 147.
219. **Bush AI**, Masters CL, Tanzi RE. Copper, β -amyloid, and Alzheimer's disease: tapping a sensitive connection. Proc. Natl. Acad. Sci USA. 2003; 100, 11193–11194.
220. Cherny RA, Masters CL, **Bush AI**. The Medicinal Metallochemistry of Alzheimer's disease. Chapter in Current Medicinal Chemistry: Immunology, Endocrine and Metabolic Agents Eds. A. E. Roher, M.R. Emerling. 2003; 3. 233-243.
221. Ciccotosto GD, Barnham KJ, Cherny RA, Masters CL, **Bush AI**, Curtain CC, Cappai R, Tew D. Methionine Oxidation: Implications For The Mechanism Of Toxicity Of The β -Amyloid Peptide From Alzheimer's Disease. Letters in Peptide Science. 2003; 10, 413–417.
222. Curtain CC, Barnham KJ, **Bush AI**. A β Metallobiology and the Development of Novel Metal-Protein Attenuating Compounds (MPACs) for Alzheimer's disease. Current Medicinal Chemistry. 2003; 3, 309-315.
223. Evin,G., Sernee, M.F., Barnham, K.J., Holsinger, R.M.D., Culvenor, J.G., Hoke, D.E., Li, Q-X., Smith, D., Maynard, C., Tickler, A., Huang, X., Opazo,C., Carrington,D, Kocak, G., Volitakis, I.,

- Mok, S-S, Ciccotosto, G., Williamson, N.A., Beyreuther, K., Wade, J., Curtain, C. C., Cherny, R.A., **Bush, A.I.**, Masters, C.L. and Cappai, R. Modulation of Alzheimer's Disease A β pathways for Rational Therapeutic Intervention: Secretase Inhibition and Metalloprotein Active Compounds. In: Iqbal, K. and Winblad, B. eds. *Alzheimer's Disease and Related Disorders: Research Advances*. Publishers: Ana Aslan International Academy of Aging- Bucharest Romania 2003, 513-523.
224. Finebrock AE, **Bush AI**, Doraiswamy PM. Current status of metals as therapeutic targets in Alzheimer's disease. JAGS. 2003; 51, 1143-1148.
225. Barnham KJ, Cherny RA, Cappai R, Melov S, Masters CL, **Bush AI**. Metal-Protein Attenuating Compounds (MPACs) for the Treatment of Alzheimer's Disease. Drug Design Reviews - Online, 2004; 1, 75-82.
226. Barnham KJ, Masters CL, **Bush AI**. Neurodegenerative Disease and oxidative stress. Nature Reviews Drug Discovery. 2004; 3, 205-14.
227. **Bush AI**, Strozyk D. Serum Copper: A Biomarker for Alzheimer Disease. Archives of Neurology. 2004; 61,631-632.
228. Butterfield DA, **Bush AI**. Alzheimer's amyloid beta-peptide (1-42): involvement of methionine residue 35 in the oxidative stress and neurotoxicity properties of this peptide. Neurobiol Aging 2004, 25, 563-568.
229. Huang X, Moir RD, Tanzi RE, **Bush AI**, and Rogers JT. Redox-active Metals, Oxidative Stress, and Alzheimer's Disease Pathology. Annals of the New York Academy of Science. 2004; 1012, 153-163.
230. Venti A, Giordano T, Eder P, **Bush AI**, Lahiri DK, Greig NH, Rogers JT. The integrated role of desferrioxamine and phenserine targeted to an iron-responsive element in the APP-mRNA 5'-untranslated region. Annals of the New York Academy of Sciences 2004; 1035, 34-48.
231. Koppental C, Fine frock AE, **Bush AI**, Doraiswamy PM. Copper, iron and zinc as therapeutic targets in Alzheimer's disease. In: Vellas B, Fitten LJ, Winblad B, Feldman H, Grundman M, Giacobini E. *Research and Practice in Alzheimer's disease*, Vol. 9. Serdi Publisher, Paris. 2004, 25-255.
232. Ritchie CW, **Bush AI**, Masters CL. Metal-protein attenuating compounds and Alzheimer's disease. Expert Opin Investig Drugs. 2004; 13, 1585-92.
233. Cuajungco M, Frederickson CJ, **Bush AI**. Amyloid- β metal interaction and metal chelation. Chapter 12 in Harris, Robin; Fahrenholz, Falk (Eds.) *Alzheimer's disease: Cellular and Molecular Aspects of Amyloid beta*. Series: Subcellular Biochemistry, 2005; 38, 235-254.
234. Frederickson CJ, Koh J, **Bush AI**. The Neurobiology of Zinc in Health and Disease. Nature Reviews Neuroscience. 2005; 6, 449-62.
235. Friedlich AL, **Bush AI**. Copper And Zinc In Alzheimer's Disease And Amyotrophic Lateral Sclerosis. Chapter 13 in Beal, Lang, Ludolph (Eds). *Neurodegenerative Diseases: Neurobiology, Pathogenesis & Therapeutics*, 2005, Cambridge University Press, Cambridge.
236. Maynard CJ, **Bush AI**, Masters CL, Cappai R, Li QX. Metals and Amyloid- β in Alzheimer's disease. International Journal of Experimental Pathology, 2005; 86, 147-159.
237. Moskovitz J & **Bush AI**. Methionine sulfoxide reductase system: Possible roles in protection against neurodegenerative diseases. In Luo Y, Packer L (Eds). *Oxidative Stress and Age-Related Neurodegeneration Series: Oxidative Stress and Disease*, 2006; 22, 199-212.
238. Strozyk D, **Bush AI**, The Role of Metal Ions in Neurology. An Introduction. Chapter 1 in A. Sigel, H. Sigel, R. K. O. Sigel (Eds). *Neurodegenerative Diseases and Metal Ions: Metal Ions in Life Sciences*, Volume 1, 2006, Wiley & Sons, Chichester, pages 1-7.

239. Strozyk D, **Bush AI**, Neurodegenerative diseases and Metal Ions. A Concluding Overview. Chapter 15 in A. Sigel, H. Sigel, R. K. O. Sigel (Eds). Neurodegenerative Diseases and Metal Ions: Metal Ions in Life Sciences, Volume 1, 2006, Wiley & Sons, Chichester, pages 427-436.
240. Adlard P, **Bush AI**. Metals and Alzheimer's disease. Journal of Alzheimer's disease. 2006, 10, 145-163.
241. White AR, Barnham KJ, **Bush AI**. Metal homeostasis in Alzheimer's disease. Expert Review of Neurotherapeutics 2006, 6(5), 711-722.
242. White AR, **Bush AI**. The Metallobiology of Alzheimer's disease: from bench to clinic. Current Medical Literature: Neurology 2006, 22(4), 89-97
243. Crouch PJ, Barnham KJ, **Bush AI**, White AR. Therapeutic treatments for Alzheimer's disease based on metal bioavailability. Drug News Perspect 2006, 19, 469-474.
244. Barnham KJ, Curtain CC, **Bush AI**. "Free radicals, metal ions and A β aggregation and neurotoxicity" Chapter 2 in Protein Misfolding, Aggregation and Conformational Diseases. Part B: Molecular Mechanisms of Conformational Diseases 2007; Uversky, VN & Fink, A (Eds), Springer Publishers; pages 31-47.
245. Crouch PJ, White AR, **Bush AI**. The modulation of metal bio-availability as a therapeutic strategy for the treatment of Alzheimer's disease. FEBS J. 2007, 274, 3775-3783.
246. Crouch PJ, Cimmins K, Duce JA, **Bush AI**, Trounce IA. Mitochondria in aging and Alzheimer's disease. Rejuvenation Research. 2007, 10, 349-357.
247. Finkelstein DI, Lynch T, Wilkins S, Cherny RA, **Bush AI**. Metals, Oxidative Stress, and Brain Biology. Chapter in Encyclopedia of Stress, 2007 Volume 2, pages 1-3.
248. Crouch PJ, Harding SE, White AR, Camakaris J, **Bush AI**, Masters CL. Mechanisms of A β mediated neurodegeneration in Alzheimer's disease. International Journal of Biochemistry and Cell Biology 2008, 40, 181-198.
249. Ng F, Berk M, Dean O, **Bush AI**. Oxidative stress in psychiatric disorders: evidence base and therapeutic implications. International Journal of Neuropsychopharmacology 2008; 11, 851-76.
250. Barnham KJ, **Bush AI**. Metals in Alzheimer's and Parkinson's diseases. Current Opinion in Chemical Biology. 2008, 12:222-228.
251. **Bush AI**, Tanzi RE. Therapeutics for Alzheimer's disease based on the Metal Hypothesis. Neurotherapeutics. 2008; 5, 421-432.
252. Berk M, Ng F, Dean O, Dodd S, **Bush AI**. Glutathione: a novel treatment target in psychiatry. Trends in Pharmacological Sciences. 2008; 29, 346-351.
253. **Bush AI**, Curtain CC. Twenty years of metallo-neurobiology: where to now? Eur Biophys J. 2008; 37, 241-245.
254. **Bush AI**. Drug development based on the Metals Hypothesis of Alzheimer's disease. Journal of Alzheimer's disease 2008; 15, 223-240
255. Adlard PA, James SA, **Bush AI**, Masters CL. A β as a molecular therapeutic target in Alzheimer's disease. Drugs of Today 2009; 45, 293-304.
256. Biran Y, Masters CL, Barnham KJ, **Bush AI**, Adlard PA: Pharmacotherapeutic targets in Alzheimer's disease. Journal of Cellular and Molecular Medicine 2009, 13(1):61-86.
257. George JL, Mok S, Moses D, Wilkins S, **Bush AI**, Cherny RA, Finkelstein DI: Targeting the Progression of Parkinson's Disease. Current Neuropharmacology 2009, 7(1):9-36.

258. Mok SS, **Bush AI**. "Therapeutics of Alzheimer's disease based on metal bioavailability" Chapter 9 in "Micronutrients and Brain Health". L. Packer (Ed), CRC Press, FL USA. 2009, 117-132.
259. Dean OM, van den Buuse M, **Bush AI**, Copolov DL, Ng F, Dodd S, Berk M. A role for glutathione in the pathophysiology of bipolar disorder and schizophrenia? Animal models and relevance to clinical practice. Current Medicinal Chemistry 2009; 16(23):2965-76.
260. Sensi SL, Paoletti P, **Bush AI**, Sekler I. Zinc in the physiology and pathology of the CNS. Nature Reviews Neuroscience 2009; 10: 780-792.
261. Wilkins S, Masters CL, **Bush AI**, Cherny RA, Finkelstein DI. Clioquinol Protects Against Cell Death in Parkinson's Disease Models In Vivo and In Vitro. In: Groenewegen HJ, Berendse HW, Cools AR, Voorn P, Mulder AB (Eds). The Basal Ganglia IX: Advances in Behavioral Biology, 2009, Vol 58, Part 4, 431-442. DOI: 10.1007/978-1-4419-0340-2_33.
262. **Bush AI**. Kalzium ist nicht alles. Neuron 2010; 65(2): 143-144.
263. Duce J, **Bush AI**. Biological Metals and Alzheimer's disease: Implications for Therapeutics and Diagnostics. Progress in Neurobiology 2010; 92, 1-18.
264. Hung YH, **Bush AI**, Cherny RA. Copper in the Brain and Alzheimer's disease. Journal of Biological Inorganic Chemistry 2010; 15, 61-76.
265. Lei P, Ayton S, Finkelstein DI, Adlard PA, Masters CL, **Bush AI**: Tau protein: Relevance to Parkinson's disease. International Journal of Biochemistry & Cell Biology 2010, 42(11):1775-1778.
266. Rembach A, Duce JA, O'Sullivan LA, Tanzi RE, **Bush AI**. Biological Metals: Metallostasis and Alzheimer's Disease. Chapter 8 In Milardi D, Rizzarelli E (Eds). Neurodegeneration: Metallostasis and Proteostasis 2010, DOI: 10.1039/9781849733014-00152.
267. Adlard PA, **Bush AI**. The plasma membrane redox system in Alzheimer's disease. Experimental Neurology 2011; 228(1), 9-14.
268. Duce JA, **Bush AI**, Adlard PA. Role of amyloid- β -metal interactions in Alzheimer's disease. Future Neurology 2011; 6(5), 641-659.
269. Kaden D, **Bush AI**, Danzeisen R, Bayer, TA, Multhaup G. (2011). Disturbed Copper Bioavailability in Alzheimer's Disease. International Journal of Alzheimer's Disease, , vol 2011, Article ID 345614, 5 pages, 2011. doi:10.4061/2011/345614.
270. Lei P, Ayton S, **Bush AI**, Adlard PA. GSK-3 in neurodegenerative diseases. International Journal of Alzheimer's disease vol. 2011, Article ID 189246, 9 pages, 2011. doi:10.4061/2011/189246.
271. **Bush AI**. A Copper Binding Site Within the Pathological Conformer Epitope of Mutant SOD1. Frontiers in Neuroscience 2011, 5:97. doi: 10.3389/fnins.2011.00097..
272. Manso Y, Comes G, Hidalgo JM, **Bush AI**, Adlard PA. Copper modulation as a therapy for Alzheimer's disease? International Journal of Alzheimer's Disease 2011, Volume 2011, Article ID 370345, 5 pages, doi:10.4061/2011/370345.
273. Sensi SL, Paoletti P, Koh J-Y, Aizenman E, **Bush AI**, Hershinkel M. The Neurophysiology and Pathology of Brain Zinc. Journal of Neuroscience 2011, 31: 16076-16085.
274. Roberts BR, Ryan TM, **Bush AI**, Masters CL, Duce JA. The role of metallobiology and amyloid β peptides in Alzheimer's disease, Journal of Neurochemistry 2012; 120(suppl 1), 149-166.
275. Adlard PA, **Bush AI**. Metal chaperones: a holistic approach to the treatment of AD, Frontiers in Psychiatry 2012; 3, 15. [doi: 10.3389/fpsy.2012.00015].
276. Dean OM, **Bush AI**, Berk M. Translating the Rosetta stone of N-acetyl cysteine. Biological Psychiatry 2012; 71 (11), 935-936.

277. **Bush AI**, The Metal Theory of Alzheimer's disease. Journal of Alzheimer's disease, 2012; 30, 1-5.
278. Greenough MA, Camakaris J, **Bush AI**. Metal dyshomeostasis and oxidative stress in Alzheimer's disease. Neurochemistry International (online 7 September 2012) doi: 10.1016/j.neuint.2012.08.014.
279. Liddell L, **Bush AI**, White AR. "Copper in Brain and Neurodegeneration". Chapter In: Metals in Cells volume. Culotta V, Scott RA (Eds), John Wiley & Sons, Ltd, USA, 2012.
280. Ayton S*, Lei P*, **Bush AI**. Metallostasis in Alzheimer's disease. Free Radical Biology & Medicine 2012 Nov 9. pii: S0891-5849(12)01800-X. doi: 10.1016/j.freeradbiomed.2012.10.558. [Epub ahead of print].
281. Ayton S, Finkelstein DI, Cherny RA, **Bush AI**, Adlard PA. "Zinc in Alzheimer's and Parkinson's Diseases". Chapter 214 in: Encyclopedia of Metalloproteins. Uversky VN, Kretsinger RH, Permyakov EA (Eds), Springer Science + Business Media, LLC, 2012, In press [DOI 10.1007/978-1-4614-1533-6].
282. Hung YH, **Bush AI**, La Fontaine S. Links between copper and cholesterol in Alzheimer's disease, Frontiers in Membrane Physiology and Biophysics, in press, doi: 10.3389/fphys.2013.00111.
283. Hare DJ, Ayton S, **Bush AI**, Lei P. A delicate balance: Iron metabolism and diseases of the brain. Frontiers in Aging Neuroscience, in press (accepted June 26, 2013).

Narrative Report of Contributions

Area of Excellence: Research & Clinical Innovation

The foundation of my laboratory's effort are the discoveries, made between 1992-1994, that the major proteins implicated in Alzheimer's disease (AD), A β and the amyloid protein precursor (APP), are copper/zinc metalloproteins whose physicochemical properties (e.g. solubility) are profoundly influenced by interaction with these metal ions. Our in vitro data are supported by findings that zinc, copper and iron are enriched in AD neocortex, and especially in the amyloid plaque deposit. In more recent years, the interaction of A β with redox active metals iron and copper has been shown by us to engender a series of pernicious radical-mediated reactions that could be of importance to the oxidative lesions that typify AD brain damage. My laboratory has demonstrated that A β possesses superoxide dismutase (SOD)-like activity, and therefore β -amyloid, the classical neuropathological lesion of AD, may represent a corrupted antioxidant. In this regard, A β resembles SOD since they are both copper/zinc superoxide scavengers that form aggregates that are associated with neurodegeneration. My laboratory discovered that when binding iron or copper, A β produces hydrogen peroxide, and can be disaggregated and rendered redox-inert by copper/iron complexing agents. Therefore, coordination of the metal binding sites on A β by small molecules may form the basis for a therapeutic, and this approach has lead to successful studies of novel chemotherapeutic agents in treating amyloid lesions in animal models, one of which has recently been demonstrated to arrest cognitive decline in a pilot Phase 2 clinical trial in Alzheimer patients.

Based upon our research into the biochemistry of AD, my laboratory has adopted a general hypothesis that dysregulation of the inorganic milieu of tissues, generating small increases in available redox-active metal ions (principally copper and iron), is one of the most important upstream components in the pathogenesis of age-related degenerative disorders. We have found interactions between copper or iron and other target proteins implicated in degenerative disorders, which resemble the interactions between copper or iron and A β . Specifically, alpha-crystallin, implicated in cataractogenesis, was found to be specifically cross-linked by copper; PrPc, implicated in Creutzfeld-Jakob disease and other prion disorders, was found to reduce copper and generate reactive oxygen species (ROS); antipsychotics, which cause tardive dyskinesia through mechanisms that are thought to involve oxidation stress, strongly reduce copper and generate ROS; and we are also exploring copper-mediated oxidation in familial amyotrophic lateral sclerosis mediated by mutant superoxide dismutase. These reactions are specific for their target proteins, and all generate ROS which may further damage surrounding tissue. We are currently pursuing a mechanistic understanding of these provocative reactions using *in vivo* experimentation.

Recently, my group has explored the origin of the glutathione defect in major psychoses: schizophrenia and bipolar disorder, consistent with an oxidative lesion in the affected brain. Abnormalities of dopamine metabolism are being explored at the experimental level, since dopamine is highly redox active. We have

exploited our insights into oxidation neurobiology in degenerative brain diseases to break ground in this area, and support clinical trial testing of glutathione precursors in psychosis.

Summary of Activities: As Head of the Oxidation Biology Unit, the majority of my time is dedicated to research and investigation. This position also involves spending at least 400 hours per year in a supervisory/advisory position to numerous students, postdoctoral fellows and senior research fellows. Our clinical innovations include the development of new drug therapies and diagnostic tests for Alzheimer's disease, Parkinson's disease and major psychiatric illness. As Director of Research and Neuropsychiatrist at Delmont Memory Clinic, I also provide tertiary consultation on dementia cases, involving approximately 5 patients on average per month.