

## CURRICULUM VITAE

**NAME:** Andrew John Lawrence

**WORK ADDRESS:** Florey Institute of Neuroscience & Mental Health  
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### ACADEMIC BACKGROUND:

1983-1986 Loughborough University of Technology, UK:  
BSc.(Hons.) Medicinal and Pharmaceutical Chemistry.

1986-1989 Loughborough University of Technology, UK:  
PhD Biochemical Neuropharmacology.

### POSTGRADUATE TRAINING:

1986-1989 Loughborough University of Technology, UK:  
PhD Biochemical Neuropharmacology, supervisor Dr John R. Traynor.

Thesis Title: *CHARACTERISATION AND USE OF RADIOTRACERS IN STUDIES OF INFLAMMATORY TISSUE AND OPIOID BINDING SITES*. **Degree awarded 1990**.  
Thesis accession number 1991:445247, CAN115:45247

### AWARDS:

1986	Loughborough University Postgraduate Scholarship
1989	Glaxo Postdoctoral Fellowship
1992	Wellcome Trust Research Travel Grant
1994	ASCEPT Travel Grant
1994	ASCEPT Young Investigator Award
2000	Monash University Travel Grant
2000	Neural Control of Autonomic Regulation Travel Award (American Physiological Society)
2001	Neural Control of Autonomic Regulation Young Investigator Award (American Physiological Society)
2001	The Levitt Visiting Professorship for 2001-2002 at the Faculty of Medicine, University of Iowa, USA.
2003	Young Investigator Award, International Society for Neurochemistry.
2005	Young Investigator Award, International Society for Neurochemistry.

- 2005 Fellowship of the British Pharmacological Society.
- 2006 Young Investigator Award, Asian-Pacific Society for Neurochemistry.
- 2007 Honorary Personal Chair, Centre for Neuroscience, University of Melbourne.
- 2008 Research Society on Alcoholism, Lecture Series award
- 2009 Australian Neuroscience Society medallion for services to the society.
- 2014 Cass Memorial Lecture, Dundee University Medical Research Institute
- 2017 Lawrie Austin Award, Australasian Neuroscience Society

**CURRENT POSITIONS:**

NHMRC Principal Research Fellow, Florey Institute of Neuroscience & Mental Health  
 Professor, Florey Dept. of Neuroscience & Mental Health, University of Melbourne  
 Associate Director, Florey Institute of Neuroscience & Mental Health  
 Division Head, Behavioural Neuroscience, Florey Institute of Neuroscience & Mental Health

**PREVIOUS APPOINTMENTS:**

- 2007-2011: NMHRC Senior Research Fellow (B), Howard Florey Institute
- 2002-2006: NMHRC Senior Research Fellow (A), Monash University / Howard Florey Institute.
- 1998-2001: NHMRC R.D. Wright Fellow, Department of Pharmacology, Monash University.
- 1995 - 1997: NHMRC Senior Research Officer, Department of Pharmacology, Monash University.
- 1992 - 1994: NHMRC Research Officer, Department of Pharmacology, Monash University.
- 1991- 1992: Senior Research Neurochemist, Pain Research Institute, Walton Hospital, Liverpool, U.K.
- 1989- 1991: Glaxo Postdoctoral Research Fellow, working with Professor C.A. Marsden, Department of Physiology and Pharmacology, University of Nottingham, U.K.

**LOCAL, NATIONAL & INTERNATIONAL PROFILE**

**LOCAL, NATIONAL - INVITED SEMINARS:**

- 1989 Dept. of Physiology & Pharmacology, Nottingham University, U.K.
- 1990 Dept. of Chemistry, Loughborough University, U.K.
- 1990 East Midlands Section of Brain Research Association, U.K.
- 1991 Dept. Neurological Sciences, Liverpool University, U.K.
- 1992 Dept. of Medicine, Austin Hospital.
- 1992 Dept. of Pharmacology, Monash University.
- 1992 Prince Henry's Institute of Medical Research, Monash Medical Centre.
- 1993 Dept. of Pharmacology, Monash University.
- 1994 Baker Medical Research Institute.
- 1994 Dept. of Pharmacology, University of Melbourne.
- 1995 Melbourne Neuroscience Group (Dept. of Anatomy, Melbourne).

1996 Melbourne Neuroscience Group (Dept. of Anatomy, Melbourne).  
1996 Dept. of Anatomy, Monash University.  
1997 Melbourne Neuroscience Group (Dept. of Anatomy, Melbourne).  
1997 Dept. of Pharmacology, R.M.I.T., Melbourne.  
1998 Baker Medical Research Institute.  
1998 Monash Centre for Neuroscience, Monash University.  
1999 Dept. of Anatomy, University of Melbourne.  
2000 Dept. of Pharmacology, Monash University.  
2000 Howard Florey Institute, Melbourne.  
2000 Dept. of Physiology, University of Melbourne.  
2001 Dept. of Pharmacology, Monash University.  
2003 Dept. of Physiology, Monash University  
2003 Howard Florey Institute, Melbourne.  
2004 Brain Awareness Week Seminar, University of Melbourne.  
2004 Dept. Anatomy & Cell Biology, University of Newcastle, NSW.  
2004 Dept. of Physiology, University of Melbourne  
2005 NSV Seminar, University of Melbourne.  
2005 Brain Awareness Week Seminar, University of Melbourne.  
2005 ChemGenex, Deakin University.  
2005 Howard Florey Institute, Melbourne.  
2005 Queensland Brain Institute, Brisbane, QLD.  
2006 Turning Point Drug & Alcohol Centre, Melbourne.  
2006 Prince of Wales Medical Research Institute, Sydney.  
2006 Brain Awareness Week Seminar, University of Melbourne  
2007 Victorian Branch of the Australian Chapter of Addiction Medicine  
2007 Dept. of Biochemistry, La Trobe University.  
2007 Dept. of Anatomy & Cell Biology, University of Melbourne  
2007 Dept. of Physiology, Monash University  
2007 School of Biomedical Sciences, University of Newcastle, NSW.  
2007 Orygen Youth Mental Health Service, Melbourne  
2007 Centre for Neuroscience, University of Melbourne  
2008 JCSMR Neuroscience Seminar, ANU, Canberra  
2008 Garvan Institute of Medical Research, Sydney, NSW  
2009 Centre for Neuroscience, University of Melbourne  
2009 Deakin University, Melbourne  
2009 School of Psychology, UNSW, Sydney  
2009 School of Psychology, La Trobe University, Melbourne  
2009 Behavioural Neuroscience Symposium, University of Melbourne  
2009 Dept of Medicine, University of Melbourne (Austin Hospital)  
2010 Dept of Pharmacology, Monash University  
2010 Kolling Institute, Royal North Shore Hospital, Sydney  
2010 Dept of Psychology, Monash University  
2011 Queensland Brain Institute, Brisbane, QLD.  
2011 NSV Seminar, Florey Neuroscience Institutes / University of Melbourne.  
2011 Bio21 Seminar, University of Melbourne  
2012 School of Psychological Science, La Trobe University, Melbourne  
2012 School of Medicine, Deakin University, Geelong  
2012 Dept of Pharmacology, University of Melbourne  
2012 Turning Point Drug & Alcohol Centre, Melbourne  
2012 Florey Institute of Neuroscience & Mental Health  
2012 Melbourne Neuropsychiatry Centre, University of Melbourne  
2013 Gene Technology Access Centre, Melbourne  
2014 MIPS Symposium on Therapeutics in Psychiatry, Melbourne  
2015 MIPS seminar program, Melbourne  
2015 Monash University, Dept of Physiology, Melbourne  
2016 UoM - Tokyo Tech Life Sciences Workshop, Melbourne

2017 La Trobe Institute of Molecular Sciences

**LOCAL, NATIONAL – INVITED CHAIRING:**

1998 Chair, Oral session 7, ANS meeting in Canberra.  
2000 Convenor & Chair, ANS symposium on Patterning of Central Autonomic Regulation.  
2004 Chair, ANS symposium on Neural Mechanisms of Drug Addiction & Relapse.  
2008 Convenor & co-Chair, ANS symposium on Hypothalamic Peptides: Eat, Drink & be Merry  
2010 Chair, session 4: animal studies MDMA 1 day conference, Monash University  
2011 Chair, ANS symposium on Models & mechanisms in the neurobiology of addiction  
2013 Convenor & co-Chair, ANS-FAONS symposium on Stress & Addiction  
2016 Chair, ANS Oral Session “Neurobiology of Behavior”, Hobart

**INVITATIONS TO SPEAK AT NATIONAL MEETINGS:**

\* denotes financial support provided

1994 University of Auckland, New Zealand, ASCEPT Young Investigators Symposium.\*  
1996 Monash University, ASCEPT/APPS joint symposium on Central Autonomic Regulation.  
2002 Symposium on Forebrain Mechanisms in Drug Addiction, Australian Neuroscience Society AGM, Sydney.  
2003 Symposium on Neuropharmacological Approaches to Drug Development, Brain & Mind Week, Melbourne.  
2003 Inaugural meeting of the Addiction Neuroscience Network Australia (ANNA), Brain & Mind Week, Melbourne.  
2003 Physiological Genomics 2003: Genetic Models of Human Disease. A one-day symposium at the Dept. of Physiology, University of Melbourne to coincide with the visit of Nobel Laureate, Professor Bert Sakmann.  
2005 APSAD. (i) Symposium on animal models of substance abuse. (ii) Workshop on Addiction Neuroscience.  
2007 Australasian Society for Psychiatric Research (ASPR). Symposium on Drugs of abuse and psychiatric illness: lessons from animal models  
2008 RANZCP Congress (College of Psychiatrists). Symposium 29: Addiction Pharmacotherapies: a Clinical Update\*, Melbourne.  
2008 AH&MRC Congress, Brisbane. Symposium (ASCEPT): Cellular and behavioural mechanisms underlying drug tolerance and addiction \*  
2008 Annual Conference of the Victorian Association of Drink & Drug Driver Services: key note lecture “Craving & relapse”  
2008 Victorian Alcohol and Drug Service Providers Conference: key note lecture “Psychological consequences of chronic alcohol use”  
2008 Australasian Society for Psychiatric Research (ASPR). Workshop on animal models for psychiatry research, Newcastle NSW.  
2009 Drug Discovery for Diseases of the Brain, Brain and Mind Research Institute, University of Sydney.

- 2010 ANZCCART 2010 Conference: Invited keynote speaker “Animal models in addiction research”
- 2011 ANS annual conference, Auckland NZ. ISN sponsored Symposium “neurochemistry: vital roles in systems neuroscience”.\*
- 2011 Inaugural Medicine in Addiction conference, Melbourne. Invited plenary speaker “Pharmacotherapies on the horizon”.
- 2012 Australasian Professional Society on Alcohol and Other Drugs (APSAD) Conference, workshop speaker “Recent developments in addiction neuroscience and their relevance to clinical practice”
- 2013 Recent Advances in Neuroscience: Plasticity, Imaging, Regeneration & Addiction, Inaugural Meeting of the Sydney Neuroscience Network, University of Sydney. Invited speaker “mGlu5 receptors & extinction of drug-seeking”\*
- 2013 Symposium - The long and winding road to discovering drugs for brain and mind disorders. ASCEPT annual conference, invited speaker.
- 2014 ANS Annual Conference in Adelaide, invited symposium speaker “The many faces of the orexin system”
- 2014 ASCEPT-MPGPCR Meeting, invited speaker “Peptides & Reward-Seeking”, Melbourne.
- 2016 MIPS symposium on Disorders of the basal ganglia – invited speaker.
- 2016 Symposium on Decision Neuroscience in honour of Professor Read Montague, Melbourne – invited speaker
- 2016 Turning Point Symposium and Oration: Addiction neuroscience and its relationship to policy and practice – invited speaker, Melbourne.
- 2017 Australasian Neuroscience Society, Lawrie Austin Plenary Lecture, Neurochemical mechanisms of reward-seeking, Sydney
- 2017 Symposium on Pain & Addiction, University of Newcastle, Australia, invited speaker
- 2017 Biological Psychiatry Australia meeting, invited symposium speaker “peptide interactions and reward-seeking”

#### **INTERNATIONAL:**

#### **SEMINARS PRESENTED BY INVITATION TO OVERSEAS UNIVERSITIES / INSTITUTES:**

\* denotes financial support provided

- 2000 Dept. of Physiology, University of Auckland, NZ.\*
- 2002 Dept. of Anatomy & Cell Biology, University of Iowa, USA.\*
- 2002 Dept. of Physiology, Wayne State University, Detroit, USA.\*
- 2002 The Dalton Center, University of Missouri, Columbia, USA.\*
- 2003 Dept. of Physiology & Pharmacology, Oregon Health Sci. University, Portland, USA.\*
- 2004 National Institute of Drug Dependence, University of Peking, PR China.
- 2004 Institute of Pharmacology & Toxicology, Beijing, PR China.
- 2005 Dept. of Pharmacology & Toxicology, University of Innsbruck, Austria
- 2005 Skipper Bowles Center for Alcohol Studies, UNC Chapel Hill, USA.\*

2006 Dept. of Neuroscience, Medical University of South Carolina, USA.\*  
 2008 School of Biomedical Sciences, University of Nottingham, UK\*  
 2008 National Institutes of Drug Abuse (NIDA), USA  
 2009 School of Psychology, Victoria University, Wellington NZ\*  
 2012 Dept of Psychiatry & Neuroscience, Lausanne University, Switzerland\*  
 2012 Dept of Experimental Biology, University of Cagliari, Sardinia, Italy\*  
 2013 Hotchkiss Brain Institute, University of Calgary, Canada\*  
 2013 Dept. of Neuroscience, Medical University of South Carolina, USA.\*  
 2016 Dept. of Physiology & Pharmacology, University of Nottingham, UK.

#### **CHAIRING OF SESSIONS AT INTERNATIONAL MEETINGS:**

\* denotes financial support provided

1999/2000 Convenor, Featured Topic on New Frontiers in Central Autonomic Regulation for NCAR section of American Physiological Society at Experimental Biology 2000, San Diego.\*

2005 International Society for Neurochemistry / European Society for Neurochemistry joint meeting, Innsbruck. Colloquia, "Substance abuse – behaviour, ethanol and neuro-active steroids" (AJL co-chair with Giovanni Biggio).\*

2007 IBRO World Congress of Neuroscience, symposium on animal models of relapse to drug-seeking

2008 Alcoholism and Stress: A Framework for Future Treatment Strategies, Volterra, Italy (G Koob, M Roberto organizers), symposium on Factors Regulating Stress-induced Alcohol-seeking and Pharmacotherapeutic Treatments

2009 International Society for Neurochemistry / Asia-Pacific Society for Neurochemistry joint meeting, Busan, S. Korea. Chair of Young Investigators Symposium on Mechanisms of Plasticity & Memory.

2011 8th IBRO World Congress, Italy. Symposium chair "Stress, plasticity & drug-seeking".

2015 APSAAR/IDARS joint meeting, Sydney. Symposium chair "Relapse"

2015 ISN/APSN/ANS conference, Cairns. Symposium chair "Neurochemistry of Decision-Making & Reward-Seeking"

2017 APSAAR meeting in Taiwan, Symposium chair "Preclinical models of drug-seeking"

#### **INVITATIONS TO SPEAK AT INTERNATIONAL MEETINGS:**

\* denotes financial support provided

1994 Colloquium on Cardiovascular Control\*, University of Iowa, U.S.A.

1994 ASCEPT Young Investigators Symposium\* Auckland, New Zealand,.

1995 Symposium on Purines and Cardiovascular Control\*, Detroit, U.S.A.

1997 Symposium on the Neurochemistry of Alcohol Abuse\*, UNC Chapel Hill, U.S.A.

1999 International Conference for Medical Research - Neuroscience Session (International Medical Advisory Group Meeting IMAG99: Alcohol-Related Research).

2000 Experimental Biology, San Diego U.S.A., featured topic on "New Frontiers in Central Autonomic Regulation: Beyond the RVLN".\*

- 2000 ASCEPT / British Pharmacological Society joint meeting, Melbourne. Symposium on Substance Abuse.
- 2000 "New Perspectives on Central Nervous Control of Cardiovascular Regulation" - a satellite meeting following the 2nd ISAN congress in London (UK).\*
- 2001 "Central Mechanisms of Cardiovascular Control - Integrative, Cellular & Molecular Aspects" - a satellite meeting in Sydney to IUPS.
- 2002 FASEB Summer Conference on Neural Control of Autonomic Regulation, Snowmass Village, Colorado: invited discussant in two sessions; (i) Neurotransmitters & techniques – chair, Professor D. Jordan and (ii) Physiological genomics – chair, Dr R. Davisson.
- 2002 Brazilian FeSBE Annual Meeting, Salvador, Brazil – Symposium on the NTS & Cardiovascular Regulation.\*
- 2003 International Society for Neurochemistry / Asia-Pacific Society for Neurochemistry joint meeting, Hong Kong (meeting cancelled due to SARS), re-scheduled for 2004.
- 2005 International Society for Neurochemistry / European Society for Neurochemistry joint meeting, Innsbruck. Colloquia, "GABA function, alcohol action & addiction".\*
- 2006 7<sup>th</sup> Biennial meeting of the Asia-Pacific Society for Neurochemistry (APSN), Young Investigator's Symposium: Neurotransmitter Receptors. Singapore \*
- 2006 ISBRA 2006 World Congress on Alcohol Research. Invited speaker in 2 Symposia: (i) Peptidergic modulators in alcohol dependence: what are they? How do they work? (ii) Preclinical neuropharmacological studies of potential therapeutics for alcoholism
- 2007 Glutamate in the Vineyards – a satellite to IBRO World Congress of Neuroscience
- 2007 Joint Meeting of the Southeast Asian Western Pacific Regional Federation of Pharmacologists (SEAWP) and the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT) – symposium speaker \*
- 2007 British Pharmacological Society winter meeting, Brighton UK – symposium speaker \* New horizons for the treatment of drug & alcohol abuse
- 2008 Research Society on Alcoholism (RSA) plenary education lecture series – craving & relapse\*
- 2008 International Society for Biomedical Research on Alcoholism (ISBRA) – symposium speaker, Pharmacological targets for the treatment of alcoholism: basic studies\*
- 2008 6<sup>th</sup> International Meeting on Metabotropic Glutamate Receptors, Sicily, Italy – symposium speaker, mGluRs & drug-seeking\*
- 2008 Festschrift for Professor Charles Marsden, University of Nottingham UK (accommodation provided)
- 2009 International Society for Neurochemistry / Asia-Pacific Society for Neurochemistry joint meeting, Busan, S. Korea – symposium speaker, Circuitry, mechanisms & animal models of relapse to drug-seeking – potential for treatment\*
- 2009 "Autonomic adjustments to environmental challenges" a satellite meeting to the 2009 ISAN Congress, Newcastle, NSW. Invited speaker.

- 2010 ISBRA, invited symposium speaker “Emerging novel mechanisms of alcohol reinforcement and dependence”, Paris, France
- 2010 Japanese Medical Society of Alcohol Drug Studies (JMSAS) symposium “pharmacotherapy of alcohol use disorders: accumulated evidence and future directions”, Fukuoka, Japan\*
- 2010 Australasian Winter Conference on Brain Research, Wanaka, NZ. Plenary speaker\*.
- 2010 Australasian Cognitive Neurosciences Conference, Melbourne. Invited speaker in symposium “Cognitive neuroscience in rodent behavioural models: beyond the water maze”
- 2011 7<sup>th</sup> International Meeting on Metabotropic Glutamate Receptors, Sicily, Italy – invited symposium speaker “Drug abuse & mGluRs”\*
- 2012 2<sup>nd</sup> Asia-Pacific Society for Alcohol and Addiction Research Conference – invited symposium speaker “Recent advances in the neurobiology of addiction via animal models”, Bangkok, Thailand
- 2012 Australasian Winter Conference on Brain Research, Queenstown, NZ. Plenary speaker\*.
- 2013 1st Asia-Pacific Molecular Cell and Cognition Society meeting, Melbourne. Invited speaker.
- 2013 APSN symposium on Nervous System and diseases: Mechanisms and Models. Singapore. Invited speaker\*.
- 2013 14<sup>th</sup> Congress of the European Society for Biomedical Research on Alcoholism (ESBRA) Warsaw, Poland – invited symposium speaker “Are Metabotropic Glutamate Receptors Promising Targets for Alcohol Addiction?”.
- 2013 Collegium Internationale Neuro-Psychopharmacologicum, special congress on addiction, Kuala Lumpur, Malaysia. Session chair and invited symposium speaker “Addiction neuroscience: emerging new treatments”. \*
- 2013 British Pharmacological Society annual meeting. Invited symposium speaker “Neuropharmacology & Psychiatric Disorders” \*
- 2013 International Narcotics Research Conference, Cairns. Speaker, chosen from abstract submission.
- 2014 Japanese Pharmacological Society Annual Conference. Invited symposium speaker “Relaxin-3 Regulates Stress-Induced Alcohol-Seeking in Rats”. Sendai, Japan\*.
- 2014 3<sup>rd</sup> Asia-Pacific Society for Alcohol and Addiction Research Conference. Plenary Lecture “Ascending Relaxin-3 systems regulate stress-induced reinstatement of alcohol-seeking”. Shanghai, China.
- 2014 12<sup>th</sup> Conference of Asia-Pacific Society for Neurochemistry (APSN). Symposium speaker “mGlu5 & extinction of drug-seeking”, Kaohsiung, Taiwan\*.
- 2014 Joint Scientific Conference of The Hong Kong Society of Neurosciences and HK Biophysical Society. Plenary lecture “Neuropeptides & Reward-Seeking”.\*
- 2014 8<sup>th</sup> International Meeting on Metabotropic Glutamate Receptors, Sicily, Italy – invited symposium speaker “mGlu5 Receptors and Extinction of Drug-Seeking”\*



- 2014 16th International Society of Addiction Medicine Annual Meeting, Yokohama, Japan - invited symposium speaker “Neuropeptides as therapeutic targets for drug-seeking”.
- 2014 2nd International Anniversary KBRI Symposium, Korea Brain Research Institute Daegu, Korea – invited speaker.\*
- 2015 British Neuroscience Association, Festival of Neuroscience, Edinburgh UK - invited symposium speaker “Ascending peptide systems & stress-induced reward-seeking”\*
- 2015 Japanese Society for Neurochemistry, Omiya-city, Japan - invited symposium speaker “Stress peptides and relapse to reward-seeking”\*
- 2015 Joint ASCEPT/BPS conference Hong Kong – invited symposium speaker “Peptides & reward-seeking behaviour”
- 2015 International Medicine in Addiction conference, Melbourne – invited symposium speaker “Emerging addiction treatments: a preclinical perspective”
- 2016 ESBRA/ISBRA World Congress, Berlin, Germany – invited symposium speaker “peptides and stress-mediated relapse”
- 2016 ASCEPT-MPGPCR Conference, Melbourne – invited plenary lecture “Unravelling the circuitry & chemistry of reward-seeking”
- 2017 IBNS Annual Conference, Hiroshima, Japan – invited symposium speaker “Neuropeptide modulation of Addiction”,
- 2017 Malaysian Society of Neurosciences annual meeting, plenary lecturer “Stress, peptides & relapse”, Kuala Lumpur, Malaysia
- 2017 Japanese Society for Neurochemistry annual meeting, symposium speaker “New roles of neurotransmitter receptors in neuropsychiatric disorders”
- 2017 Slovenian Neuroscience Society annual meeting, plenary lecture “Peptides and reward-seeking behaviour”
- 2017 Slovenian Neuroscience Society annual meeting, invited symposium speaker “mGlu5 receptors and extinction of drug-seeking”

#### **POSTDOCTORAL TRAINEES:**

1999-2007: Dr Michael Cowen (CJ Martin Fellow)  
 2001-2009: Dr Feng Chen  
 2008-2012: Dr Bianca Jupp (CJ Martin Fellow)  
 2009-2017: Dr Jhodie Duncan (CJ Martin Fellow & Future Fellow)  
 2010-2017: Dr Robyn Brown (Doherty Fellow)  
 2011-2013: Dr Jee Hyun Kim (DECRA Fellow)  
 2012-2013: Dr Heather Madsen  
 2012-present: Dr Christina Perry (NHMRC Dementia Fellow 2016-onwards)  
 2015-2017: Dr Craig Smith  
 2016-present: Dr Erin Campbell  
 2017-present: Dr Nicola Chen

#### **POSTGRADUATE & UNDERGRADUATE TEACHING:**

## **POSTGRADUATE STUDENTS SUPERVISED:**

1994-1998: Margie Castillo-Meléndez, PhD.

1994-1998: Mark Ashworth-Preece, PhD (Student Oral Prize at the 1996 ASCEPT meeting).

1994-1999: Karen McLean, PhD.

1996-1999: Michael Cowen, PhD. (CJ Martin Fellow)

1997-2000: Bevan Sweerts, PhD.

1997-2002: Angelina Fong, PhD.

1998-2001: Feng Chen, PhD.

1998-2002: Song Yao, PhD.

1998-2003: Jenni Short, PhD (ASCEPT Honours prize 1997).

1999-2002: Daniel Lodge, PhD.

2000-2004: Stuart McDougall, PhD. (CJ Martin Fellow)

2002-2006: Elvan Djouma, PhD.

2005-2009: Cameron McPherson, PhD.

2005-2011: Cameron Adams, PhD.

2005-2010: Robyn Brown, PhD. (Doherty Fellow)

2006-2010: Michael Bird, PhD.

2008-2012: Heather Madsen, PhD.

2008-2011: Waleed Farid, PhD (UWA, co-supervisor with Professor Sarah Dunlop).

2010-2013: Philip Ryan, PhD. (CJ Martin Fellow)

2011-2014: Rose Chesworth, PhD.

2011-2014: Alec Dick, PhD.

2011-2015: Hanna Kastman, PhD.

2011-2012: Andrezza Kim, 12 month placement from UNIFESP, Brazil during PhD candidature.

2012-2015: Andrew Walker, PhD.

2012-2014: Katherine Beringer, MPhil.

2012-2016: Nicola Chen, PhD.

2012-2014: Shawn Tan, MSc.

2013-2014: Emma Giles, MSc.

2013-2015: Felicia Reed, MSc.

2013-present: Jirawoot Srisontiyakul, PhD candidate (Mahidol Uni, Bangkok, co-supervisor)

2013-2017: Isabel Zbukvic, PhD

2014-present: Sophia Luikinga, PhD candidate (co-supervisor)

2014-2017: Sarah Sulaiman Ch'ng, PhD.

2014-present: Leigh Walker, PhD candidate.

2014-present: Dennis Wormald, PhD

2015-present: Jingjing Fu, MSc candidate.

2016-present: Sean Murphy, PhD candidate

2017-present: Ariel Simon, MSc candidate

2017-present: Jackson McDonald, MSc candidate

2017-present: Diana Sketriene, PhD candidate

#### **PhD STUDENT CONFIRMATION COMMITTEES:**

Lizzie Manning  
Gerry Ma  
Christina Mo  
Annabel Short  
Yonis Abukar  
Jake Rogers  
Jaime Lee  
Shlomo Yeshurun  
Rebecca Norris  
Yvette Wilson  
Alice Berizzi  
Alyssa Sbisa  
Danilo La Terra  
Khalid Elsaafien  
Izzie De Luzy

#### **UNDERGRADUATE STUDENTS SUPERVISED:**

1990-1991	Andrea Vincent	Sandwich Year Training, Liverpool University.
1993	Margie Castillo-Meléndez	BSc (Hons) Monash University (Class IIA).
1994	Amynta Hovey	BSc (Hons) Monash University (Class IIA).
1996	Angelina Fong	BSc (Hons) Monash University (First Class).

1997	Song Yao	BSc (Hons) Monash University (First Class).
1997	Jennifer Short	BSc (Hons) Monash University (First Class).
1998	Stuart McDougall	BSc (Hons) Monash University (First Class).
1998	Daniel Lodge	BSc (Hons) Monash University (First Class).
1999	Broughton Snell	BSc (Hons) Monash University (First Class).
2001	Elvan Djouma	BSc (Hons) Monash University (First Class).
2001	Anne Day	BSc (Hons) Monash University (First Class).
2002	Katie Card	BSc (Hons) Monash University (Class IIA).
2003	Travis Featherby	BSc (Hons) Monash University (Class IIA).
2004	Cameron Adams	BSc (Hons) Monash University (First Class).
2004	Cameron McPherson	BSc (Hons) Monash University (First Class).
2004	Robyn Brown	BSc (Hons) University of Melbourne (Class IIA).
2005	Michael Bird	BSc (Hons) University of Melbourne (First Class).
2006	Dennis Wormald	BSc (Hons) University of Melbourne (First Class).
2006	Linda Chuang	BSc (Hons) University of Melbourne (First Class).
2006	George Youssef	BPsych (Hons) RMIT (First Class) / APS student of the year
2006/7	Rosanna Moore	MSc Neuroscience, University of Nottingham, UK
2007	Heather Madsen	BSc (Hons) University of Melbourne (First Class)
2008	Gabi Dezsi	BSc (Hons) University of Melbourne (First Class)
2008	Jess Farrugia	BSc (Hons) La Trobe University (First Class)
2009	Kendall Lynch	BSc (Hons) University of Melbourne (First Class)
2009	Betty Krivdic	BPsych(Hons) RMIT (First Class) /APS student of the year
2009	Monique Stagnitti	BSc (Hons) University of Melbourne (First Class)
2009/10	Billy West & Katie Pillidge	MSc Neuroscience, University of Nottingham, UK
2010/11	Alex Lory	MSc Neuroscience, University of Nottingham, UK
2010	Alec Dick	BSc (Hons) University of Melbourne (First Class)
2011	Nicola Chen	BSc (Hons) University of Melbourne (First Class)
2011/12	Sarah Gibbs	MSc Neuroscience, University of Nottingham, UK

2011/12	Shaun Khoo	BSc (Hons) University of Melbourne (First Class)
2012	Doron Iavan	BPsych (Hons) University of Melbourne (First Class)
2012	Isabel Zbukvic	BSc (Hons) University of Melbourne (First Class)
2012	Martin Axelsson	BPsych (Hons) RMIT (Class IIA)
2012	Sophie Luikinga	BSc(Hons) Utrecht University (First Class)
2013	Sarah Sulaiman Ch'ng	BSc (Hons) University of Melbourne (First Class)
2013	Suhel Singh	BSc (Hons) University of Melbourne (Class IIA)
2013	Annabeth Simpson	BSc (Hons) University of Melbourne (First Class)
2014	Katie Drummond	BSc (Hons) University of Melbourne (First Class)
2014	Rosa Heller	BSc (Hons) University of Melbourne (First Class)
2014	Ashleigh Qama	BSc (Hons) University of Melbourne (First Class)
2015	Anna Horton	BSc (Hons) University of Melbourne (First Class)
2015	Damien Battista	BPsych (Hons) RMIT (Class IIB)
2016	Aparna Attwar	BSc (Hons) University of Melbourne (First Class)
2016	Chamasha Dissanayake	BSc (Hons) University of Melbourne (First Class)
2016	Han Ngoc Thai	BSc (Hons) University of Melbourne (First Class)
2017	Josh Cross	BSc (Hons) University of Melbourne (First Class)
2017	Annai Charlton	BSc (Hons) University of Melbourne (First Class)
2017	Jeremy Flanagan	BSc (Hons) University of Melbourne

### **TEACHING:**

Lectures to second and third year Science students (Monash).

Lectures to second and third year Behavioural Neuroscience students (Monash).

A course of advanced tutorials for Pharmacology Honours students (Monash).

Demonstration of practical classes to second year Behavioural Neuroscience students, third year Science and B Med. Sci. students (Monash).

Essay options for third year Science students (Monash).

Lectures on the basis of psychotropic drug action to Psychiatry registrars at Maroondah Hospital (Monash).

Mentoring of third year Neurophysiology students, University of Melbourne (2005 onwards)

3<sup>rd</sup> Year Neuropharmacology, University of Melbourne (2010 onwards)

3<sup>rd</sup> Year Neuroscience (Anatomy & Cell Biology), University of Melbourne (2011 onwards)

Lectures on Behavioural Neuroscience during the “Neuroscience of Cognition & Behaviour” module of the Florey PhD program (2010-2016)

## **ADMINISTRATIVE RESPONSIBILITIES:**

Departmental Radiation Safety Officer (1994-2003)  
Chairman of the Zone Occupational Health and Safety Committee (1995-2001).  
Category B member of Departmental Animal Ethics Committee (1999-2002).  
Research representative on the Monash University Medical Faculty I.T. committee (2000-2002).  
Category B member Howard Florey Institute Animal Ethics Committee (2004-2016).  
Chair, Howard Florey Institute Animal Ethics Committee (2006-2016).  
Member, Scientific Advisory Committee of Florey (2008-present)  
Chair, Florey Faculty committee (2012-2014)  
Member Florey Executive (2015-)  
Member, Neuroscience Coordination Forum (UoM/Florey, 2016-)

## **PEER REVIEW:**

### **PARTICIPATION IN NHMRC GRANT REVIEW PANELS:**

2003	Panel 4A – Molecular Neuroscience
2006	Panel 6B – Pharmacology
2007	Assessor for Complementary & Alternative Medicine grants
2008	Panel 4F – Neurology & Imaging
2009	Panel 5J – Psychiatry & Imaging
2011	Panel 3D – Neuroscience
2012	Panel 4B – Neuroscience
2013	Panel 4H – Neuroscience
2014	NHMRC Assigner's Academy – Neuroscience
2015	NHMRC Assigner's Academy – Neuroscience
2016	NHMRC Assigner's Academy – Neuroscience
2018	NHMRC Assigner's Academy – Neuroscience

### **PARTICIPATION IN ARC GRANT REVIEW PROCESS:**

2007	OzReader, Biological Sciences
2008	OzReader, Biological Sciences
2009	OzReader, Biological Sciences
2010	OzReader, Biological Sciences
2011	OzReader, Biological Sciences
2012	OzReader, Biological Sciences
2013	OzReader, Biological Sciences

### **ASSESSOR OF PROJECT GRANT APPLICATIONS:**

1992 – present	National Health & Medical Research Council (projects & Fellowships).
1999 – present	The Ontario Mental Health Foundation, Canada.
1999 – present	Health Research Council of New Zealand.
2004 – present	Health Research Board in Ireland.
2005 – present	Wellcome Trust (UK) Program Grant reviewer
2007 – present	Canada Foundation for Innovation
2008 – present	Neurological Foundation of New Zealand
2009 – present	The Netherlands Organisation for Health Research and Development
2010 – present	Israel Science Foundation
2010 – present	Swiss National Science Foundation
2011 – present	French National Research Agency
2012 – present	Austrian Science Fund

2015 – present                      Canadian Institutes for Health Research

**INDEPENDENT EXPERT ASSESSMENTS:**

Past member of Current Drugs Ltd panel of advisers.

External examiner for Dept. of Physiology BSc / MSc students (2000), University of Auckland (NZ), at the request of Professor Janusz Lipski.

Scientific consultant for NeuroTherapeutics Pty

Scientific consultant for NeuroResearch Services Pty

Scientific consultant for the Integrative Neuroscience Facility, Howard Florey Institute

Member of the 2007 Consultation Workshop Group for the Victorian Government Amphetamine Type Stimulant Strategy

Member of the NSW Health Ministerial Committee on Drug Strategy Cost Funding Model Project on research of the Neuroscience of Addiction (2007-08)

Consultant to Inamori Foundation, Kyoto, Japan.

Member of the scientific evaluation committee for the Victorian Neurotrauma Initiative (2008-2011)

Multiple PhD thesis examinations (Australia & Overseas)

Scientific Advisory Committee for the Rebecca L Cooper Medical Research Foundation (2014-)

Innovators in Science Award, New York Academy of Sciences, Jury Member (2017)

**EDITORIAL SERVICES:**

*Editorial Boards:*

The British Journal of Pharmacology, 2001-2007 Editor; 2008-2014 Senior Editor, 2105- Reviews Editor.

American Journal of Physiology – Regulatory, Integrative & Comparative Physiology, 2004 - 2008.

Addiction Biology –2004 – present, member of Editorial Board

Neurochemical Research – 2007-2010 member of Editorial Board; 2011-present Associate Editor

The Open Neuropsychopharmacology Journal – 2008 – present, member of Editorial Board

The Journal of Pharmacological Sciences –2011-present, Associate Editor

ISRN Addiction – 2012-present, member of Editorial Board

Progress in Neuropsychopharmacology - 2015-present, member of Editorial Board

Pharmacology Research & Perspectives – 2016-2017, Deputy Editor-in-Chief; 2018-present Editor-in-Chief

Frontiers in Translational Pharmacology – 2016-present, Associate Editor

Cellular and Molecular Neurobiology – 2017-present, Associate Editor

Brain and Neurosciences Advances - 2016-present, member of Editorial Board

In addition, I also act as a specialist referee for numerous journals. Typically, I would referee ~50 articles per annum, in addition to my editorial responsibilities outlined above.

#### **SCIENTIFIC DISCIPLINE:**

#### **MEMBERSHIPS:**

1986-1989 British Opioid Colloquium.  
1992 - British Pharmacological Society.  
1992 -96 Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT).  
1993 - Australian Neuroscience Society (ANS).  
1994 - International Society for Neurochemistry (ISN).  
1995 - Society for Neuroscience.  
1999-2010 American Physiological Society.  
2003-06 Addiction Neuroscience Network Australia (ANNA).  
2003- Research Society on Alcoholism (RSA) / International Society for Biomedical Research on Alcoholism (ISBRA).  
2006- Asia-Pacific Society for Neurochemistry (APSN)  
2011- Asia-Pacific Society for Alcohol and Addiction Research (APSAAR)

#### **MEMBERSHIP OF EXECUTIVE COMMITTEES:**

2000 -03 Member, Executive Council of ISAN (Oceania Representative). I have also been appointed to an ISAN Development Committee.  
2001 -04 Member, Perkins Memorial Fellowship Committee of the American Physiological Society.  
2002 -08 Treasurer, Australian Neuroscience Society.  
2003 -05 Treasurer, International Society for Autonomic Neuroscience (ISAN).  
2003 -04 Interim local secretary, Addiction Neuroscience Network Australia (ANNA).  
2004 -07 Member, Scientific Advisory Committee, ANNA.  
2004 -07 Member, Steering Committee of the Neural Control and Autonomic Regulation Section of the American Physiological Society.  
2006 -08 Member of the Board of the Asia-Pacific Society for Neurochemistry (APSN).  
2008 -present Member of the Director's Executive Group for the Howard Florey Institute / Florey Neuroscience Institutes.  
2008 -09 Co-opted to ANS Council to oversee the development of formal linkages between ANS & the Australian Course of Advanced Neuroscience (ACAN).  
2008 -2014 Treasurer, Asia-Pacific Society for Neurochemistry (APSN).  
2010 Co-convenor & faculty member, APSN School in neurochemistry, Mahidol University, Bangkok, Thailand



- 2013 Faculty member, APSN school in neurochemistry, NUS Singapore.
- 2014 Faculty member, APSN Advanced School in neurochemistry, Center for Translational Research in Biomedical Research, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.
- 2014 – 2016 President, Asia-Pacific Society for Neurochemistry (APSN).
- 2017 - Council member, International Society for Neurochemistry (ISN).

**SOCIETY ACTIVITIES:**

- 1996 Member, scientific programming committee for ASCEPT meeting hosted by Monash University.
- 1996 Convenor, joint ASCEPT/APPS symposium on Central Autonomic Regulation.
- 1999/2000 Treasurer, local organising committee for ANS 2000. I also co-ordinated the publicity (print/radio) for this meeting.
- 1999/2000 Convenor and Chair, ANS symposium on Patterning of Central Autonomic Regulation.
- 1999/2000 Convenor, Featured Topic on Central Autonomic Regulation for NCAR section of APS at EB2000, San Diego.
- 2002 Member of the local organizing committee for the 2003 meeting of The International Association of Forensic Toxicologists (invitation from Prof. Olaf Drummer, Victorian Inst. Of Forensic Medicine).
- 2003/2004 Member, local organising committee for ANS 2004.
- 2004 -2007 Secretary LOC for IBRO World Congress of Neuroscience (Melbourne 2007).
- 2006 Member, local organising committee for ISBRA 2006.
- 2006 -2008 Chair, programming committee Asia-Pacific Society for Neurochemistry (APSN) meeting Shanghai, 2008.
- 2008-2009 Member scientific programming committee International Society for Neurochemistry (ISN) conference in Busan, S Korea.
- 2009 Member, scientific programming committee Asia-Pacific Society for Neurochemistry (APSN) meeting, Thailand 2010
- 2011 Poster prize judge for ANS annual meeting, Auckland
- 2011 Member scientific programming committee Asia-Pacific Society for Neurochemistry (APSN) meeting, Kobe City, Japan
- 2012-13 Member, local organizing committee for International Narcotics Research Conference (INRC), Cairns, Queensland 2013
- 2014-15 Member scientific programming committee International Society for Neurochemistry (ISN) conference in Cairns, Australia.
- 2015-16 Ambassador for the 2016 CINP World Congress of Neuropsychopharmacology, Seoul, Korea.

2015	Member of Scientific Program Committee of the Asia-Pacific Society of Alcohol and Addiction Research (APSAAR) annual conference, Sydney.
2015	Chair, Scientific Program Committee of ISN 2017 (Paris)
2015	Member, Scientific Program Committee of ESBRA/ISBRA 2016 (Berlin)
2016	Faculty member, IBRO/APRC Neuroscience School, Panjab University, Chandigarh, India
2017	Faculty member, IBRO/APRC Neuroscience School, North-Eastern Hill University, Shillong, India
2017	Foreign faculty, Global Initiative of Academic Networks, Chandigarh, India
2017	Chair ISN Conference Committee

#### RESEARCH SUPPORT:

#### PAST SUPPORT:

1994	Clive & Vera Ramaciotti Foundations Fluorescence detector for amino acid analysis. Dr A.J. Lawrence & Professor B. Jarrott.	\$15, 000
1994-1995	NHF Project Grant $\beta$ -Adrenoceptors on cardiovascular neurons: their properties and role in the control of blood pressure. Professor B. Jarrott & Dr A.J. Lawrence.	\$80, 000
1994	Australian Brewers' Foundation The central neurochemical effects of acute and chronic alcohol consumption. Dr A.J. Lawrence & Professor B. Jarrott.	\$35, 000
1994	Monash University Research Top-Up Grant Identification of transmitters at vagal afferents. Dr A.J. Lawrence.	\$4, 000
1995	NHMRC Equipment Grant: ID 34062 On -line sensor for nitric oxide. Dr A.J. Lawrence, Professor B. Jarrott, Professor P.M. Beart & Dr D. Walker.	\$25, 000
1995-97	NHMRC Project Grant ('95-97): ID 33870 Peptides and nitric oxide as modulators of baroreceptor afferent neurons. Dr A.J. Lawrence & Professor B. Jarrott.	\$240, 000
1995-97	NHMRC Project Grant ('95-97): ID 33860 Neuropharmacological studies of adenosine in hypertension. Professor B. Jarrott & Dr A.J. Lawrence.	\$140, 000
1996	Australian Brewers' Foundation The effects of alcohol on GABA <sub>A</sub> receptors in the rat mesolimbic system. Dr A.J. Lawrence & Professor B. Jarrott.	\$37, 500

1997	Australian Brewers' Foundation Development of novel radioligands to study opioid receptors in the mesolimbic system of alcohol-preferring rats. Dr A.J. Lawrence & Professor B. Jarrott.	\$34, 500
1998	Australian Brewers' Foundation Novel approaches to treat anxiety-related alcohol consumption in rats. Dr A.J. Lawrence & Professor B. Jarrott & Professor P.M. Beart.	\$25, 000
1999	Monash Faculty of Medicine Special Research Fund Purinerbic Transmission In Brain Nuclei Associated With Central Autonomic Regulation. Dr A.J. Lawrence.	\$34, 000
1997-2001	Wellcome Trust Biomedical Research Collaboration Grant The role of nitric oxide and purines as modulators of pontine-medullary pathways concerned with cardiovascular regulation. Dr A.J. Lawrence & Professor K.M. Spyer.	\$42, 000
1997-2001	NHMRC R.D. Wright Fellowship ('98-2001): ID 987733 Neurochemical studies of pontine-medullary pathways and central autonomic regulation. Dr A.J. Lawrence.	\$245, 000
1999	NHMRC Project Grant (2000-2002): ID 124354 Purinerbic transmission and central autonomic regulation. Dr A.J. Lawrence.	\$150, 000
2000	The Wellcome Trust (Equipment Grant 2000-2002) Professor R. Summers, Professor J. Bertram, Professor J. Mercer, Dr A. Perkins & Dr A.J. Lawrence.	\$619,000
2001	Australian Brewers' Foundation. St John's Wort, ethanol consumption & 5-HT <sub>2A</sub> receptors. Dr A.J. Lawrence	\$32,000.
2001	Monash University Small Grants Scheme Genetic models of alcoholism. Dr A.J. Lawrence	\$25,000.
2001	Australian Institute of Nuclear Science & Engineering Autoradiographic localisation of CRF type 2 receptors in the Rat Brain. Dr A.J. Lawrence	\$14,610.
2001	NHMRC Senior Research Fellow (2002-2006)	\$475,000.
2002	NHMRC Equipment Grant Operant chambers plus control system for the study of cue-stimulated drug-seeking behaviour.  Dr M.S. Cowen, Dr A.J. Lawrence, Dr J. Drago & Prof. B. Jarrott.	\$80,000.
2003	Australian Brewers' Foundation The Role of the Central Nucleus of the Amygdala in the Reinforcing and Anxiolytic Properties of Ethanol Dr M.S. Cowen & Dr A.J. Lawrence	\$35,000.
2003	ANZ Trustees: Hugh D.T. Williamson Foundation	\$10,000.

The Role of the Central Nucleus of the Amygdala in the Reinforcing Effects of Ethanol  
Dr M.S. Cowen & Dr A.J. Lawrence

2004	Helen McPherson-Smith Trust Equipment Grant, Ethovision Video Tracking System Dr A.J. Lawrence	\$34,866.
2004	Equity Trustees Trophic Factors & Depression Dr A.J. Lawrence	\$90,000.
2006	Australian Brewers' Foundation Reassessing GABA systems for potential alcohol therapeutics: focus on positive allosteric modulators of GABA <sub>B</sub> receptors Dr A.J. Lawrence & Dr M.S. Cowen	\$35,000.
2003-2007	NHMRC Program Grant (ID:236805) Professor M. Horne, Professor B. Jarrott, Professor P.M. Beart, A/Prof. S. Cheema, A/Prof. J. Drago, Dr A.J. Lawrence	\$8,250,000.
2005-2007	ARC Discovery Project (DP0556710) The Central Nucleus of the Amygdala & Alcohol-Seeking Behaviour. Dr M.S. Cowen & Dr A.J. Lawrence	\$220,000.
2007	L.E.W. Carty Charitable Fund Equipment grant: Professor A.J. Lawrence	\$23,000.
2007	ANZ Trustees: William Buckland Foundation Equipment grant: Professor A.J. Lawrence	\$15,000.
2008	Alcohol & Health research grants scheme Striatal CREB, plasticity & alcohol-seeking Professor AJ Lawrence, Dr B Vissel & Prof M Christie	\$35,000.
2008-2010	NHMRC Project Grant (508976) CRF as a therapeutic target for alcohol & drug abuse Professor A.J. Lawrence	\$483,750.
2008-2010	NHMRC Project Grant (472680) Role of the hypothalamus, oxidative stress and angiotensin in chronic stress Dr GA Head, Dr AJ Lawrence & P Davern.	\$513,750.
2009	L.E.W. Carty Charitable Fund Equipment grant: Dr J Duncan & Professor AJ Lawrence	\$35,000
2010	Alcohol & Health research grants scheme Effects of toluene exposure during adolescence on alcohol consumption in adulthood. Dr J Duncan & Professor AJ Lawrence	\$35,000.
2007-2011	NHMRC Senior Research Fellow (level B)	\$583,750.
2008-2011	NHMRC Project Grant (508964) Genetics of Stress Responsiveness Mark Murphy, Thomas Brodnicki, Andrew Lawrence.	\$660,000.

2009-2011	NHMRC Project Grant (566736) Glutamate - adenosine interactions and drug-seeking Professor AJ Lawrence, A/Prof P Dodd & Dr K Pflieger.	\$536,250.
2009-2011	Pratt / Besen Foundations: Neuropeptides, stress & drug-seeking Professor AJ Lawrence & A/Prof A Gundlach	\$240,000
2010-2012	NHMRC Project Grant (628680) A novel paradigm for defining the in-vivo role of alpha4-containing neuronal nicotinic acetylcholine receptors in nicotine mediated complex behaviours. A/Prof J Drago & Professor AJ Lawrence	\$560,861
2012	Rebecca Cooper Foundation Brain Sciences grant Identifying genes implicated in addiction Prof AJ Lawrence, Dr RM Brown & Dr JH Kim	\$7,000
2012-2016	NHMRC Principal Research Fellow (1020737)	\$702,795
2011-2013	ARC Discovery Project (DP110100379) The long-term consequences of toluene exposure on the maturing brain Prof AJ Lawrence, Dr TW Bredy, Dr M Gavrilescu	\$360,000
2011-2013	Besen Foundation: Neuropeptides, stress & drug-seeking Professor AJ Lawrence & A/Prof A Gundlach	\$120,000
2012-2014	NHMRC Project Grant (1022201) The role of the mGlu5 receptor in extinction Prof AJ Lawrence & Dr JH Kim	\$581,010
2012-2014	NHMRC Project Grant (1021227) A novel pathway for drug-seeking Prof AJ Lawrence & A/Prof AL Gundlach	\$510,000
2014-2016	NHMRC Project Grant (1063140) Preclinical investigation into novel therapeutics to treat drug abuse during adolescence and adulthood Dr JH Kim & Professor AJ Lawrence	\$688,579
2015-2017	NHMRC Project Grant (1079891) Salt, opiates & addiction Prof AJ Lawrence, Prof DI Lubman, Dr SJ McDougall	\$547,464.50

**CURRENTLY HELD GRANTS:**

2017-2021	NHMRC Principal Research Fellow (1116930)	\$763,845
2015-2017	NHMRC Project Grant (1079893) A new therapeutic target for stress-related relapse Prof AJ Lawrence & A/Prof AL Gundlach	\$663,813
2016-2018	NHMRC Project Grant (1105741) Unraveling the neural circuitry of context-induced relapse to alcohol seeking after punishment-imposed abstinence Dr N Marchant & Prof AJ Lawrence	\$528,016
2016-2018	NHMRC Project Grant (1108092) A novel approach for the treatment of obesity: examining the potential of addiction therapeutics Dr RM Brown & Prof AJ Lawrence	\$765,935
2017-2020	NHMRC Project Grant (1120576) Alcohol and Striatal Adaptation Prof AJ Lawrence, Dr C Langmead, Prof D Spanswick	\$972,844
2018-2020	NHMRC Project Grant (1141724) Neural regulation of salt intake Prof AJ Lawrence & Dr C Smith	\$645,005
2018-2021	NHMRC Project Grant (1140050) Repurposing an Alzheimer's trial drug to block relapse in cocaine addiction models Dr J Gunnensen, Dr RM Brown, Prof AJ Lawrence	\$1,050,600.80

**CONTRACTS WITH INDUSTRY:**

2007-08	Acuity Technology – behavioural testing of novel compounds
2007-2011	CV Therapeutics / Gilead Sciences – behavioural testing of novel compounds

## **PUBLICATIONS:**

### **Academic Books:**

1. Lawrence AJ & De Lecea L (eds) Behavioural Neuroscience of Orexin/Hypocretin. Current Topics in Behavioural Neurosciences 33. ISSN 1866-3370, Springer, Switzerland, 2017.

### **Refereed Journal Articles:**

1. Lawrence A. J., Thornback, J. R., Zanelli, G. D. & Lawson, A. (1988). Octaethylporphyrinato(oxo)-technetium (V) acetate - an example of a new type of technetium porphyrin complex. *Inorg. Chim. Acta*, **141**, 165-6.

2. Traynor J.R., Hayes A.G. & Lawrence A.J. (1989) Binding profile of the potent, selective  $\kappa$ -opioid antagonist norbinaltorphimine. *Adv. Biosci.*, **75**, 109-112.

3. Lawrence A.J. & Traynor J.R. (1990) Characterisation of opioid binding sites using selective antagonists. *Prog. Clin. Biol. Res.*, **328**, 121-124.

4. Rogers H., Hayes A.G., Birch P.J., Traynor J.R. & Lawrence A.J. (1990). The selectivity of the opioid antagonist naltrindole for the  $\delta$ -receptor. *J. Pharm. Pharmacol.*, **42**, 358-360.

5. Lawrence A.J. & Marsden C.A. (1992). Terminal autoreceptor control of 5-HT release as measured by in vivo microdialysis in the conscious guinea-pig. *J. Neurochem.*, **58**, 142-146.

6. Beckett S.R.G., Lawrence A.J., Marsden C.A. & Marshall P.W. (1992). Attenuation of chemically induced defence response by 5-HT<sub>1</sub> receptor agonists administered into the periaqueductal gray. *Psychopharmacology*, **108**, 110-114.

7. Lawrence A.J., Michalkiewicz A., Joshi G.P. & Blunnie W.P. (1992). Evidence for analgesia mediated by peripheral opioid receptors in inflamed synovial tissue. *Eur. J. Clin. Pharmacol.*, **43**, 351-355.

8. Lawrence A.J., Michalkiewicz A., Morley J.S., Boylin K. & Billington D. (1992). Differential inhibition of hepatic morphine UDP-glucuronosyltransferases by metal ions. *Biochem. Pharmacol.*, **43**, 2335-2340.

9. Choonara I., Lawrence A., Michalkiewicz A., Bowhay A. & Ratcliffe J. (1992). Morphine metabolism in neonates and infants. *Br. J. Clin. Pharmacol.*, **34**, 434-437.

10. Joshi G.P., McCarroll S.M., Cooney C.M., Blunnie W.P., O'Brien T.M. & Lawrence A.J. (1992) Intra-articular morphine for pain relief after knee arthroscopy. *J. Bone & Joint Surg. (Brit. Vol.)*, **74**, 749-751.

11. Lawrence A.J. & Jarrott B. (1993). Nitric oxide increases interstitial excitatory amino acid release in the rat dorsomedial medulla oblongata. *Neurosci. Lett.*, **151**, 126-129.

12. Lawrence A.J. & Jarrott B. (1994). L-Glutamate as a neurotransmitter at baroreceptor afferents: evidence from in vivo microdialysis. *Neuroscience*, **58**, 585-591.

13. Lawrence A.J., Castillo-Melendez M. & Jarrott B. (1994) [<sup>3</sup>H]Adenosine transport in rat dorsal brain stem using a crude synaptosomal preparation. *Neurochem. Int.*, **25**, 221-226.

14. Castillo-Melendez M., Krstew E., Lawrence A.J. & Jarrott B. (1994) Adenosine A<sub>2a</sub> receptors on soma and central terminals of rat vagal afferent neurons. *Brain Res.*, **652**, 137-144.

15. Lawrence A.J. & Jarrott B. (1994) Visualisation of dopamine D<sub>2</sub> binding sites on human inferior vagal ganglia. *NeuroReport*, **5**, 1966-1968.

16. Lawrence A.J., Krstew E. & Jarrott B. (1995) Functional dopamine D<sub>2</sub> receptors on rat vagal afferent neurons. *Br. J. Pharmacol.*, **114**, 1329-1334.
17. Lawrence A.J., Watkins D. & Jarrott B. (1995) Visualisation of  $\beta$ -adrenoceptors on human inferior vagal ganglia and their axonal transport along the rat vagus nerve. *J. Hypertens.*, **13**, 631-635.
18. Ashworth-Preece M.A., Jarrott B. & Lawrence A.J. (1995) 5-Hydroxytryptamine<sub>3</sub> receptor modulation of excitatory amino acid release in the rat nucleus tractus solitarius. *Neurosci. Lett.*, **191**, 75-78.
19. Castillo-Melendez M., Jarrott B. & Lawrence A.J. (1996) Radioligand binding and autoradiographic visualization of adenosine transport sites in human inferior vagal ganglia and their axonal transport along rat vagal afferent neurons. *J. Auton. Nerv. Sys.*, **57**, 36-42.
20. Lunn M.L., Ganakas A.M., Mercer L.D., Lawrence A.J. & Beart P.M. (1996) Localisation and properties of AMPA-insensitive kainate sites: receptor autoradiography and gene expression in rat brain. *Neurosci. Lett.*, **204**, 121-124.
21. McLean K.J., Jarrott B. & Lawrence A.J. (1996) Neuropeptide Y gene expression and receptor autoradiography in hypertensive and normotensive rat brain, *Mol. Brain Res.*, **35**, 249-259.
22. Watkins D., Lawrence A.J., Lewis, S.J. & Jarrott B. (1996) Loss of [<sup>125</sup>I]-pindolol binding to  $\beta$ -adrenoceptors on rat nodose ganglion after chronic isoprenaline treatment. *J. Auton. Nerv. Sys.*, **60**, 12-16.
23. Lawrence, A.J., Krstew, E. & Jarrott, B. (1996) Actions of nitric oxide and expression of the mRNA encoding nitric oxide synthase in rat vagal afferent neurons. *Eur. J. Pharmacol.*, **315**, 127-133.
24. Castillo-Melendez M., Jarrott B. & Lawrence A.J. (1996) Markers of adenosine removal in normotensive and hypertensive rat nervous tissue. *Hypertension*, **28**, 1026-1033.
25. Ashworth-Preece M., Krstew E. Jarrott B. & Lawrence A.J. (1997) Functional GABA<sub>A</sub> receptors on rat vagal afferent neurons. *Br. J. Pharmacol.*, **120**, 469-475.
26. Lawrence A.J., Krstew E. & Jarrott B. (1997) Adenosine-dopamine interactions in the isolated rat nodose ganglion but not in membranes of dorsal vagal complex. *Naunyn Schmiedeberg's Arch. Pharmacol.*, **355**, 303-308.
27. Lawrence, A.J., Krstew, E. & Jarrott, B. (1997) Complex interactions between nitric oxide and adenosine receptors in the rat isolated nodose ganglion. *Eur. J. Pharmacol.*, **328**, 83-88.
28. McLean, K.J., Jarrott, B. & Lawrence, A.J. (1997) Preproneuropeptide Y mRNA and NPY binding sites in human inferior vagal ganglia. *NeuroReport*, **8**, 2317-2320.
29. Chen, F., Rezvani, A., Jarrott, B. & Lawrence, A.J. (1997) [<sup>3</sup>H]Zolpidem binding in alcohol-preferring and non-preferring rat brain. *Neurosci. Lett.*, **238**, 103-106.
30. Cowen, M., Chen, F., Jarrott, B. & Lawrence, A.J. (1998) Effects of acute alcohol on GABA release and GABA<sub>A</sub> receptor density in the rat mesolimbic system. *Pharmacol. Biochem. Behav.*, **59**, 51-57.
31. Chen, F., Rezvani, A., Jarrott, B. & Lawrence, A.J. (1998) Distribution of GABA<sub>A</sub> receptors in the limbic system of alcohol-preferring and non-preferring rats: in situ hybridisation histochemistry and receptor autoradiography. *Neurochem. Int.*, **32**, 143-151.
32. Jones, N.M., Lawrence, A.J. & Beart, P.M. (1998) In vivo microdialysis reveals facilitatory metabotropic glutamate receptors regulating excitatory amino acid release in rat nucleus tractus solitarius. *Neurochem. Int.*, **32**, 31-38.



33. Ashworth-Preece, M.A., Jarrott, B. & Lawrence, A.J. (1998) Nicotinic acetylcholine receptors in the rat and primate nucleus tractus solitarius and on rat and human inferior vagal nodose ganglia: evidence from in vivo microdialysis and [<sup>125</sup>I]α-bungarotoxin autoradiography. *Neuroscience*, **83**, 1113-1122.
34. Krstew E., Jarrott, B. & Lawrence, A.J. (1998) Bradykinin B<sub>2</sub> receptors in nodose ganglia of rat and human. *Eur. J. Pharmacol.*, **348**, 175-180.
35. Lawrence, A.J., Castillo-Melendez, M., McLean, K.J. & Jarrott, B. (1998) Distribution of nitric oxide synthase-, adenosine deaminase- and neuropeptide Y-immunoreactivity through the entire rat nucleus tractus solitarius: effect of unilateral nodose ganglionectomy. *J. Chem. Neuroanat.*, **15**, 27-40.
36. Cowen, M.S., Rezvani, A., Jarrott, B. & Lawrence, A.J. (1998) Distribution of opioid peptide gene expression in the limbic system of Fawn-Hooded (alcohol-preferring) and Wistar-Kyoto (alcohol-non-preferring) rats. *Brain Res.*, **796**, 323-326.
37. Krstew E., Jarrott, B. & Lawrence, A.J. (1998) Autoradiographic visualisation of axonal transport of adenosine A<sub>1</sub> receptors along the rat vagus nerve and characterisation of adenosine A<sub>1</sub> receptor binding in the dorsal vagal complex of hypertensive and normotensive rats. *Brain Res.*, **802**, 61-68.
38. Ashworth-Preece, M.A., Jarrott, B. & Lawrence, A.J. (1998) Nicotinic acetylcholine receptor mediated modulation of evoked excitatory amino acid release in the nucleus tractus solitarius of the rat: evidence from in vivo microdialysis. *Brain Res.*, **806**, 287-291.
39. Evans R.G. Bergstrom G. & Lawrence, A.J. (1998) Effects of the vasopressin V-1 agonist [Phe<sup>2</sup>,Ile<sup>3</sup>,Orn<sup>8</sup>] vasopressin on regional kidney perfusion and renal excretory function in anesthetized rabbits. *J. Cardiovasc. Pharmacol.* **32**, 571-581.
40. Carroll F.Y., Finkelstein D.I., Horne M.K., Lawrence A.J., Crawford D., Paxinos G. & Beart P.M. (1998) Regional distribution of low affinity kainate receptors in brain of *Macaca fascicularis* determined by autoradiography using [<sup>3</sup>H](2S,4R)-4-methylglutamate. *Neurosci. Lett.*, **255**, 71-74.
41. Drago J., Padungchaichot P., Wong J.Y.F., Lawrence A.J., McManus J.F., Sumarsono S.H., Natoli A.L., Lakso M., Wreford N., Westphal H., Kola I. & Finkelstein D.I. (1998) Targeted expression of a toxin gene to D1 dopamine receptor neurons by Cre-mediated site-specific recombination. *J. Neurosci.*, **18**, 9845-9857.
42. Yao S.T., Finkelstein D.I. & Lawrence A.J. (1999) Nitrgergic stimulation of the locus coeruleus modulates blood pressure and heart rate in the anaesthetised rat. *Neuroscience*, **91**, 621-629.
43. McLean, K.J., Jarrott, B. & Lawrence, A.J. (1999) Hypotension activates neuropeptide Y-containing neurons in the rat medulla oblongata. *Neuroscience*, **92**, 1377-1387.
44. Cowen, M.S., Rezvani, A.H., Jarrott, B. & Lawrence, A.J. (1999) Ethanol Consumption by Fawn-Hooded Rats Following Abstinence: Effect of Naltrexone and changes in μ-Opioid Receptor Density. *Alc. Clin. Exp. Res.*, **23**, 1008-1014.
45. Sweerts, B., Jarrott, B. & Lawrence A.J. (1999) Expression of preprogalanin mRNA following acute and chronic restraint stress in brains of normotensive and hypertensive rats. *Mol. Brain Res.*, **69**, 113-123.
46. Correia, A.G., Bergström, G., Lawrence, A.J. & Evans, R.G. (1999) Renal medullary interstitial infusion of norepinephrine in anaesthetized rabbits: methodological considerations. *Am. J. Physiol., Regul. Integr. Comp. Physiol.*, **46**, R112-R122.
47. Ashworth-Preece, M.A., Chen, F., Jarrott, B. & Lawrence A.J. (1999) Visualisation of AMPA binding sites in the brain stem of normotensive and hypertensive rats. *Brain Res.*, **834**, 186-189.

48. Chen, F., Jarrott B. & Lawrence A.J. (1999) Up-regulation of cortical AMPA receptor binding in the Fawn-Hooded rat following ethanol withdrawal. *Eur. J. Pharmacol.*, **384**, 139-146.
49. Padungchaichot, P., Wong, J.Y.F., Natoli, A.L., Massalas, J.S., Finkelstein, D.I., Lawrence, A.J. & Drago, J. (1999) Early direct and transneuronal effects in mice with targeted expression of a toxin gene to D1 dopamine receptor neurons. *Neuroscience*, **95**, 1025-1033.
50. Chen, F. & Lawrence, A.J. (2000) The effect of chronic ethanol and withdrawal on the  $\mu$ -opioid receptor- and 5-HT<sub>1A</sub> receptor-stimulated binding of [<sup>35</sup>S]GTP $\gamma$ S in the Fawn-Hooded rat brain: a quantitative autoradiography study. *J. Pharmacol. Exp. Ther.*, **293**, 159-165.
51. Lodge, D., Short, J.L., Mercer, L.D., Beart, P.M. & Lawrence, A.J. (2000) CCK/dopamine interactions in Fawn-Hooded and Wistar-Kyoto rat brain. *Peptides*, **21**, 379-386.
52. M<sup>c</sup>Dougall, S.J., Paull, J.R.A., Widdop, R.E. & Lawrence, A.J. (2000) Restraint stress: differential cardiovascular responses in WKY and SHR. *Hypertension*, **35**, 126-129.
53. Chen, F. & Lawrence, A.J. (2000) 5-HT Transporter sites, 5-HT<sub>1A</sub> and 5-HT<sub>3</sub> receptors in Fawn-Hooded rats: a quantitative autoradiography study. *Alc. Clin. Exp. Res.*, **24**, 1093-1102.
54. Sweerts, B., Jarrott, B. & Lawrence A.J. (2000) [<sup>125</sup>I]-Galanin binding sites in human inferior vagal ganglia. *Life Sci.*, **67**, 2685-2690.
55. Snell, B.J., Short, J.L., Drago, J., Ledent, C. & Lawrence, A.J. (2000) Characterisation of central adenosine A<sub>1</sub> receptors and adenosine transporters in mice lacking the adenosine A<sub>2a</sub> receptor. *Brain Res.*, **877**, 160-169.
56. Sweerts, B., Jarrott, B. & Lawrence, A.J. (2000) Acute and chronic restraint stress: effects on [<sup>125</sup>I]-galanin binding in normotensive and hypertensive rat brain. *Brain Res.*, **873**, 318-329.
57. Kha, H. T., Finkelstein, D.I., Pow D.V, Lawrence, A.J. & Horne, M.K. (2000) A study of projections from entopeduncular nucleus to the thalamus of the rat. *J. Comp. Neurol.*, **426**, 366-377.
58. Yao, S.T., Barden, J.A., Finkelstein, D.I., Bennett, M.R. & Lawrence, A.J. (2000) A comparative study on the distribution patterns of P2X<sub>1</sub>-P2X<sub>6</sub> - receptor immunoreactivity in the brainstem of the rat and common marmoset (*Callithrix jacchus*): association with catecholamine cell groups. *J. Comp. Neurol.*, **427**, 485-507.
59. Snell, B.J., Short, J.L., Drago, J., Ledent, C. & Lawrence, A.J. (2000) Visualisation of AMPA binding sites in the brain of mice lacking the adenosine A<sub>2a</sub> receptor. *Neurosci. Lett.*, **291**, 97-100.
60. Fong, A.Y., Talman, W.T. & Lawrence, A.J. (2000) Axonal transport of NADPH-diaphorase and [<sup>3</sup>H]nitro-L-arginine binding, but not [<sup>3</sup>H]cGMP binding, by the rat vagus nerve. *Brain Res.*, **878**, 240-246.
61. M<sup>c</sup>Dougall, S.J., Roulston, C.A., Widdop, R.E. & Lawrence, A.J. (2000) Characterisation of vasopressin V<sub>1A</sub>, angiotensin AT<sub>1</sub> and AT<sub>2</sub> receptor distribution and density in normotensive and hypertensive rat brain stem and kidney: effects of restraint stress. *Brain Res.*, **883**, 148-156.
62. Aprico, K., Beart, P.M., Lawrence, A.J., Crawford, D. & O'Shea, R.D. (2001) [<sup>3</sup>H]-(2S,4R)-4-methylglutamate: a novel ligand for the characterisation of glutamate transporters. *J. Neurochem.*, **77**, 1218-1225.
63. Lodge D. & Lawrence, A.J. (2001) Comparative analysis of the central CCK system in Fawn Hooded and Wistar Kyoto rats: extended localisation of CCK-A receptors throughout the rat brain using a novel radioligand. *Reg. Peptides*, **99**, 191-201.
64. Sweerts, B., Jarrott, B. & Lawrence A.J. (2001) The effect of acute and chronic restraint on the central expression of pre-proneuropeptide Y mRNA in Normotensive & Hypertensive rats. *J. Neuroendocrinol.*, **13**, 1-11.

65. Cowen, M.S. & Lawrence, A.J. (2001) Alterations in central preproenkephalin mRNA expression following free-choice ethanol consumption in Fawn-Hooded rats. *Alc. Clin. Exp. Res.*, **25**, 1126-1133.
66. Yao, S.T., Barden, J.A. & Lawrence, A.J. (2001) On the distribution of six P2X receptor subunits in the rat nucleus tractus solitarius. *Neuroscience*, **108**, 673-685.
67. Lawrence, A.J., Krstew, E.V., Dautzenburg, F. & Rühmann, A. (2002) The highly selective CRF<sub>2</sub> receptor antagonist K41498 binds to presynaptic CRF<sub>2</sub> receptors in rat brain. *Br. J. Pharmacol.*, **136**, 896-904.
68. Fong, A.Y., Krstew, E.V., Barden, J. & Lawrence, A.J. (2002) Immunoreactive localisation of P2Y<sub>1</sub> receptors within the rat and human nodose ganglia and rat brainstem: Comparison with [ $\alpha$ <sup>33</sup>P]deoxyadenosine 5'-triphosphate autoradiography. *Neuroscience*, **113**, 809-823.
69. Djouma, E. & Lawrence, A.J. (2002) The effect of chronic ethanol consumption and withdrawal on  $\mu$ -opioid, dopamine D<sub>1</sub> and D<sub>2</sub> receptor density in Fawn-Hooded rat brain. *J. Pharmacol. Exp. Ther.*, **302**, 551-559.
70. Lodge D.J. & Lawrence, A.J. (2003) The effect of isolation rearing on volitional ethanol consumption and central CCK/dopamine systems in Fawn-Hooded rats. *Behav. Brain Res.*, **141**, 113-122.
71. Lodge D.J. & Lawrence, A.J. (2003) The CRF<sub>1</sub> receptor antagonist, antalarmin reduces volitional ethanol consumption in isolation-reared Fawn-Hooded rats. *Neuroscience*, **117**, 243-247.
72. Chen F., Rezvani A.H. & Lawrence, A.J. (2003) Autoradiographic quantification of neurochemical markers of serotonin, dopamine and opioid systems in rat brain mesolimbic regions following chronic St John's wort treatment. *Naunyn-Schmiedeberg's Arch. Pharmacol.*, **367**, 126-133.
73. Lodge D.J. & Lawrence, A.J. (2003) Comparative analysis of hepatic ethanol metabolism in Fawn-Hooded and Wistar-Kyoto rats. *Alcohol*, **30**, 75-79.
74. Wang J.H., Short, J., Ledent, C. Lawrence, A.J. & van den Buuse, M. (2003) Reduced startle habituation and prepulse inhibition in mice lacking the adenosine A<sub>2A</sub> receptor. *Behav. Brain Res.*, **143**, 201-207.
75. Callaway, J.K., Lawrence, A.J. & Jarrott, B. (2003) AM-36, a novel neuroprotective agent, profoundly reduces reactive oxygen species formation and dopamine release in the striatum of conscious rats after endothelin-1-induced middle cerebral artery occlusion. *Neuropharmacology*, **44**, 787-800.
76. McGregor, I.S., Clemens, K.J., van der Plasse, G., Li, K.M., Hunt, G.E., Chen, F. & Lawrence, A.J. (2003) Increased anxiety, altered 5-HT receptor and transporter density, but no 5-HT depletion, three months after brief low-dose MDMA ("Ecstasy") in rats. *Neuropsychopharmacology*, **28**, 1472-1484.
77. Chen, F. & Lawrence, A.J. (2003) The effect of antidepressant treatment on serotonergic and dopaminergic systems in Fawn-Hooded rats: a quantitative autoradiography study. *Brain Res.*, **976**, 22-29.
78. Lodge D.J., Roques, B.P. & Lawrence, A.J. (2003) Atypical behavioural responses to CCK-B receptor ligands in Fawn-Hooded rats. *Life Sci.*, **74**, 1-12.
79. Lodge D.J. & Lawrence, A.J. (2003) The effect of chronic CRF<sub>1</sub> receptor blockade on the central CCK systems of Fawn-Hooded rats. *Reg. Peptides*, **116**, 27-33.
80. Roulston, C.L., Lawrence, A.J., Jarrott, B. & Widdop, R.E. (2003) Localization of AT<sub>2</sub> receptors in the nucleus of the solitary tract of spontaneously hypertensive and Wistar Kyoto rats using [<sup>125</sup>I]CGP42112: upregulation of a non-angiotensin II binding site following unilateral nodose ganglionectomy. *Brain Res.*, **968**, 139-155.
81. Stanic, D., Parish, C.L., Krstew, E.V., Lawrence, A.J., Drago, J., Finkelstein, D.I. & Horne M.K. (2003) Changes in function and ultrastructure of striatal dopaminergic terminals that regenerate following partial lesions of the SNpc. *J. Neurochem.*, **86**, 329-343.

82. Yao, S.T., A.V. Gourine, A.V., Spyer, K.M., Barden, J.A., & Lawrence, A.J. (2003) Localisation of P2X<sub>2</sub> receptor subunit immunoreactivity on nitric oxide synthase expressing neurones in the brain stem and hypothalamus of the rat: a fluorescence immunohistochemical study. *Neuroscience*, **121**, 411-419.
83. Crossley, K.J., Nitsos, I., Walker, D.W., Lawrence, A.J., Beart, P.M. & Hirst, J.J. (2003) Steroid-sensitive GABA<sub>A</sub> receptors in the fetal sheep brain. *Neuropharmacology*, **45**, 461-472.
84. Snell, B.J., Day, A., Ledent, C. & Lawrence, A.J. (2004). [<sup>3</sup>H]Adenosine uptake in brainstem membranes of CD-1 mice lacking the adenosine A<sub>2a</sub> receptor. *Life Sci.*, **75**, 225-235.
85. Martin, S., Lawrence, A.J. & Van den Buuse, M. (2004) Prepulse inhibition in Fawn-Hooded rats: Increased sensitivity to 5-HT<sub>1A</sub> receptor stimulation. *Eur. Neuropsychopharmacol.*, **14**, 373-379.
86. Roulston, C.L., Lawrence, A.J., Jarrott, B. & Widdop, R.E. (2004) Non-Angiotensin II [<sup>125</sup>I] CGP42112 binding is a sensitive marker of neuronal injury in brainstem following unilateral nodose ganglionectomy: comparison with markers for activated microglia. *Neuroscience*, **127**, 753-767.
87. Chen, F. & Lawrence, A.J. (2004) Chronic antidepressant treatment causes a selective reduction of μ-opioid receptor binding and functional coupling to G-proteins in the amygdala of Fawn-Hooded rats. *J. Pharmacol. Exp. Ther.*, **310**, 1020-1026.
88. Huang, X.F., Huang, X., Han, M., Chen, F., Storlien, L.H. & Lawrence, A.J. (2004) 5-HT<sub>2A/2C</sub> receptor and 5-HT transporter densities in mice prone or resistant to chronic high-fat diet-induced obesity: a quantitative autoradiography study. *Brain Res.*, **1018**, 227-235.
89. Featherby, T. & Lawrence, A.J. (2004) Chronic cold stress regulates ascending noradrenergic pathways. *Neuroscience*, **127**, 949-960.
90. \*Lazartigues, E., \*Lawrence, A.J., Lamb, F.S. & Davisson, R.L. (2004) Renovascular hypertension in mice with brain-selective overexpression of AT<sub>1A</sub> receptors is buffered by increased nitric oxide production in the periphery. *Circ. Res.*, **95**, 523-531. \* denotes equal first author.
91. M<sup>c</sup>Dougall, S.J., Widdop, R.E. & Lawrence, A.J. (2004) Medial prefrontal cortical integration of psychological stress in rats. *Eur. J. Neurosci.*, **20**, 2430-2440.
92. M<sup>c</sup>Dougall, S.J., Widdop, R.E. & Lawrence, A.J. (2005) Differential gene expression in WKY and SHR brain following acute and chronic air-puff stress. *Mol. Brain Res.*, **133**, 329-336.
93. M<sup>c</sup>Dougall, S.J., Lawrence, A.J., & Widdop, R.E. (2005) Differential cardiovascular responses to stressors in hypertensive and normotensive rats. *Exp. Phys.*, **90**, 141-150.
94. Yao, S.T. & Lawrence, A.J. (2005) Purinergic modulation of cardiovascular function in the rat locus coeruleus. *Br. J. Pharmacol.*, **145**, 342-352.
95. Yao, S.T. & Lawrence, A.J. (2005) A comparative autoradiographic study of the density of [<sup>3</sup>H]SR95531, [<sup>3</sup>H]MK-801 and [<sup>3</sup>H]cGMP binding in the locus coeruleus of Spontaneously Hypertensive and Wistar-Kyoto rats. *Naunyn-Schmiedeberg's Arch. Pharmacol.*, **371**, 434-439.
96. Lawrence, A.J., Parish, C.L., Chen, F., Lodge, D. J., Krstew, E.V., Card, K., Finkelstein, D.I. and Horne, M.K. (2005) Chronic corticotropin releasing factor type 1 receptor antagonism with antalarmin regulates the dopaminergic system of Fawn-Hooded rats. *J. Neurochem.*, **94**, 1523-1534.
97. Cowen, M.S., Adams, C., Kraehenbuehl, T., Vengeliene, V. & Lawrence, A.J. (2005) The acute anti-craving effect of acamprosate in alcohol-preferring rats is associated with modulation of the mesolimbic dopamine system. *Addiction Biol.*, **10**, 233-242.

98. Cowen, M.S., Djouma, E. and Lawrence, A.J. (2005) The mGlu5 antagonist MTEP reduces ethanol self-administration in multiple strains of alcohol-preferring rats and regulates olfactory glutamatergic systems. *J. Pharmacol. Exp. Ther.*, **315**, 590-600.
99. Roulston, C.L., Lawrence, A.J., Widdop, R.E. & Jarrott, B. (2005) Minocycline treatment attenuates microglia activation and non-Angiotensin II [<sup>125</sup>I] CGP42112 binding in brainstem following nodose ganglionectomy. *Neuroscience*, **135**, 1241-1253.
100. Parish, C.L., Nunan, J., Finkelstein, D.I., McNamara, F.N., Wong, J.Y., Waddington, J.L., Brown, R.M., Lawrence, A.J., Horne, M.K. & Drago, J. (2005) Mice lacking the  $\alpha 4$  nicotinic receptor subunit fail to modulate dopaminergic neuronal arbors and possess impaired dopamine transporter function. *Mol. Pharmacol.*, **68**, 1376-1386.
101. McPherson, C.S and Lawrence, A.J. (2006) Exposure to amphetamine in rats during periadolescence establishes behavioural and extrastriatal neural sensitization in adulthood. *Int. J. Neuropsychopharmacol.*, **9**, 377-392.
102. Short, J.L., Ledent, C., Drago, J. and Lawrence, A.J. (2006) Receptor cross-talk: characterization of mice deficient in dopamine D<sub>1</sub> and adenosine A<sub>2A</sub> receptors. *Neuropsychopharmacology*, **31**, 525-534.
103. Cham, J.L., Owens, N.C., Barden, J.A., Lawrence, A.J. & Badoer, E. (2006) P2X purinoceptor subtypes on paraventricular nucleus neurons projecting to the rostral ventrolateral medulla in rat. *Exp. Phys.*, **91**, 403-411.
104. Liang, J.H., Chen, F., Krstew, E., Cowen, M.S., Carroll, F.Y., Crawford, D., Beart, P.M. & Lawrence, A.J. (2006) The GABA<sub>B</sub> receptor allosteric modulator CGP7930, like baclofen, reduces operant self-administration of ethanol in alcohol-preferring rats. *Neuropharmacology*, **50**, 632-639.
105. Short, J.L., Drago, J. & Lawrence, A.J. (2006) Comparison of ethanol preference and neurochemical measures of mesolimbic dopamine and adenosine systems across different strains of mice. *Alc. Clin. Exp. Res.*, **30**, 606-620.
106. Short, J.L., Ledent, C., Borrelli, E., Drago, J. & Lawrence, A.J. (2006) Genetic interdependence of adenosine and dopamine receptors: evidence from receptor knockout mice. *Neuroscience*, **139**, 661-670.
107. Djouma, E., Card, K., Lodge, D.J. & Lawrence, A.J. (2006) The CRF<sub>1</sub> receptor antagonist, antalarmin, reverses isolation-induced upregulation of dopamine D<sub>2</sub> receptors in the amygdala and nucleus accumbens of Fawn-Hooded rats. *Eur. J. Neurosci.*, **23**, 3319-3327.
108. Lawrence, A.J., Cowen, M.S., Yang, H-J., Chen, F. & Oldfield, B. (2006) The orexin system regulates alcohol-seeking in rats. *Br. J. Pharmacol.*, **148**, 752-759.
109. Huang XF, Zavitsanou K, Huang X, Yu Y, Wang H, Chen F, Lawrence AJ & Deng C. (2006) Dopamine transporter and D2 receptor binding densities in mice prone or resistant to chronic high fat diet-induced obesity. *Behav. Brain Res.*, **175**, 415-419.
110. Gómez, C. , Briñón, J.G., Orío, L., Colado, M.I., Lawrence, A.J., Zhou, F.C., Vidal, M., Barbado, M.V. & Alonso, J.R. (2007) Changes in the serotonergic system in the main olfactory bulb of rats unilaterally deprived from birth to adulthood. *J. Neurochem.*, **100**, 924-938.
111. Cowen, M.S., Krstew, E. and Lawrence, A.J. (2007) Assessing appetitive and consummatory phases of ethanol self-administration in C57BL/6J mice under operant conditions: regulation by mGlu5 receptor antagonism. *Psychopharmacology*, **190**, 21-29.
112. Gantois, I., Fang, K., Jiang, L., Babovic, D., Lawrence, A.J., Ferreri, V., Teper, Y., Jupp, B., Ziebell, J., Morganti-Kossmann, C.M., O'Brien, T.J., Nally, R., Schütz, G., Waddington, J., Egan, G. & Drago, J. (2007)

Targeted ablation of D1 dopamine receptor expressing cells generates mice with seizures, hindlimb dystonia, hyperactivity and impaired oral behavioral topographies. *Proc. Natl. Acad. Sci (USA)*, **104**, 4182-4187.

113. Moore, R., Krstew, E.V., Kirchoff, J., Davisson, R.L. & Lawrence A.J. (2007) Central overexpression of angiotensin AT<sub>1A</sub> receptors prevents dopamine D<sub>2</sub> receptor regulation of alcohol consumption in mice. *Alc. Clin. Exp. Res.*, **31**, 1128-1137.

114. Teper, Y., Whyte, D., Cahir, E., Lester, H.A., Grady, S.R., Marks, M.J., Cohen, B.N., Fonck, C., McClure-Begley, T., McIntosh, J.M., Labarca, C., Lawrence, A., Chen, F., Gantois, I., Davies, P.J., Petrou, S., Murphy, M., Waddington, J., Horne, M.K., Berkovic, S.F. & Drago, J. (2007) Nicotine-induced dystonic arousal complex in a mouse line harboring a human autosomal dominant nocturnal frontal lobe epilepsy mutation. *J. Neurosci.*, **27**, 10128-10142.

115. McPherson, C.S, Featherby, T., Krstew, E.V. & Lawrence, A.J. (2007) Quantification of pCREB expression throughout the brain of amphetamine sensitized rats: activation of hypothalamic orexin A-containing neurons. *J. Pharmacol. Exp. Ther.*, **323**, 805-812.

116. Adams, C.L., Cowen, M.S., Short, J.L. & Lawrence, A.J. (2008) Combined antagonism of glutamate mGlu5 and adenosine A2A receptors interact to regulate alcohol-seeking in rats. *Int. J. Neuropsychopharmacol.*, **11**, 229-241.

117. Martin, S., Markus, M.A., Morris, B.J., Davisson, R.L., Lawrence, A.J. & van den Buuse, M. (2008) Does angiotensin interact with dopaminergic mechanisms in the brain to modulate prepulse inhibition in mice? *Neuropharmacology*, **54**, 399-404.

118. Bird, M.K., Kirchoff, J., Djouma, E. & Lawrence, A.J. (2008) Metabotropic glutamate 5 receptors regulate sensitivity to ethanol in mice. *Int. J. Neuropsychopharmacol.*, **11**, 765-774.

119. Featherby, T., van den Buuse, M., Lubman, D.I. & Lawrence, A.J. (2008) Persistent down regulation in hippocampal CREB mRNA parallels a Y-maze deficit in adolescent rats following semi-chronic amphetamine administration. *Br. J. Pharmacol.*, **154**, 417-428.

120. Lee, J., Zhu, W-M., Stanic, D., Finkelstein, D.I., Horne, M.H., Henderson, J., Lawrence, A.J., O'Connor, L., Tomas, D., Drago, J. & Horne, M.K. (2008) Sprouting of dopamine terminals and altered dopamine release and uptake in Parkinsonian dyskinesia. *Brain*, **131**, 1574-1587.

121. Horne, M.K., Lee, J., Chen, F., Lanning, K., Thomas, D. & Lawrence, A.J. (2008) Long term administration of cocaine or serotonin reuptake inhibitors results in anatomical and neurochemical changes in noradrenergic, dopaminergic and serotonin pathways. *J. Neurochem.*, **106**, 1731-1744.

122. Brown, R.M., Short, J.L., Cowen, M.S., Ledent, C. & Lawrence, A.J. (2009) A differential role for the adenosine A2A receptor in opiate reinforcement versus opiate-seeking behavior. *Neuropsychopharmacology*, **34**, 844-856.

123. Arolfo, MP\*, Overstreet, DH\*, Yao, L, \*, Fan, P, Lawrence, AJ, Tao, G, Keung, WM, Vallee, BL, Olive, MF, Gass, JT, Rubin, E, Anni, H, Hodge, CW, Besheer, J, Zablocki, J, Leung, K, Blackburn, BK, Lange, LG & Diamond, I (2009) Suppression of heavy drinking and alcohol-seeking by a selective ALDH-2 inhibitor. *Alc. Clin. Exp. Res.*, **33**, 1935-1944.

124. Bird, M.K., Reid, C.A., Chen, F., Tan, H.O., Petrou, S. & Lawrence A.J. (2010) Cocaine-mediated synaptic potentiation is absent in VTA neurons from mGlu5-deficient mice. *Int. J. Neuropsychopharmacol.*, **13**, 133-141.

125. McPherson, C.S., Mantamadiotis, T., Tan, S.S. & Lawrence A.J. (2010) Deletion of CREB1 from the dorsal telencephalon reduces motivational properties of cocaine. *Cerebral Cortex*, **20**, 941-952.

126. Babovic, D., Jiang, L., Gantois, I., [Lawrence, A.J.](#), Ferreri, V., Schütz, G., Waddington, J.L. & Drago, J. (2010) Age-related behavioural phenotype and cellular characterisation of mice with progressive ablation of D1 dopamine receptor-expressing cells. *Behav. Brain Res.*, **206**, 78-87.
127. Sun, Y-P., Liu, Q., Luo, J., Guo, P., Chen, F., [Lawrence, A.J.](#), & Liang, J-H. (2010) Systemic administration of arecoline reduces ethanol-induced sleeping through activation of central muscarinic receptor in mice. *Alc. Clin. Exp. Res.*, **34**, 150-157.
128. Adams, C.L., Short, J.L. & [Lawrence, A.J.](#) (2010) Cue-conditioned alcohol seeking in rats following abstinence: involvement of mGlu5 receptors. *Br. J. Pharmacol.*, **159**, 534-542.
129. Luo, J., Jing, L., Qin, W.J., Zhang, M., [Lawrence, A.J.](#), Chen, F. & Liang, J.H. (2011) Transcription and protein synthesis inhibitors reduce the induction of behavioural sensitization to a single morphine exposure and regulate Hsp70 expression in the mouse nucleus accumbens. *Int. J. Neuropsychopharmacol.*, **14**, 107-121.
130. Wilson YM, Brodnicki T, [Lawrence AJ](#) & Murphy M. (2011) Congenic mouse strains enable discrimination of genetic determinants contributing to fear and fear memory. *Behav. Genetics*, **41**, 278-287.
131. Ash BL, Zanatta SD, Williams SJ, [Lawrence AJ](#) & Djouma E. (2011) The galanin-3 receptor antagonist, SNAP 37889, reduces operant responding for ethanol in alcohol-preferring rats. *Reg. Peptides*, **166**, 59-67.
132. Jupp B., Krstew E., Dezsi G. & [Lawrence AJ](#) (2011) Discrete cue-conditioned alcohol-seeking after protracted abstinence: pattern of neural activation and involvement of orexin1 receptors. *Br. J. Pharmacol.*, **162**, 880-889.
133. Brown RM, Short JL & [Lawrence AJ](#) (2010) Identification of brain nuclei implicated in cocaine-primed reinstatement of conditioned place preference: a behaviour dissociable from sensitization. *PLoS One*, **5(12)**, e15889.
134. Hargreaves GA, Wang EY, [Lawrence AJ](#) & McGregor IS (2011) Beer promotes high levels of alcohol intake in adolescent and adult alcohol-preferring rats. *Alcohol*, **45**, 485-498.
135. Tomiyama K, Kim HA, Kinsella A, Ehrlich ME, Schütz G, Koshikawa N, [Lawrence AJ](#), Waddington JL & Drago J. (2011). Phenotypic disruption to orofacial movement topography in conditional mutants with generalised CamKII $\alpha$ /Cre D1Tox vs striatal-specific DARPP-32/Cre D1Tox ablation of D1 dopamine receptor-expressing cells. *Synapse*, **65**, 835-842.
136. Cahir, E., Pillidge, K., Drago, J. & [Lawrence, A.J.](#) (2011) The necessity of  $\alpha 4^*$  nicotinic receptors in nicotine-driven behaviours: dissociation between reinforcing and motor effects of nicotine. *Neuropsychopharmacology*, **36**, 1505-1517.
137. Sashindranath, M., Samson, A., Downes, C., Crack, P., [Lawrence, A.](#), Li, Q-X., Ng, A., Jones, N., Farrugia, J., Abdella, E., Vassalli, J-D., Madani, R., & Medcalf, R. (2011) Compartment- and context-specific changes in tissue-type plasminogen activator (tPA) activity following brain injury or stimulation. *Lab. Invest.*, **91**, 1079-1091.
138. Jing, L., Luo, J., Zhang, M., Qin, W-J., Li, Y-L., Liu, Q., Wang, Y-T., [Lawrence, AJ.](#) & Liang, J-H. (2011) Effect of the histone deacetylase inhibitors on behavioural sensitization to a single morphine exposure in mice. *Neurosci. Lett.*, **494**, 169-173.
139. Jupp, B., Krivdic, B., Krstew, E.V. & [Lawrence, A.J.](#) (2011) The orexin<sub>1</sub> receptor antagonist SB-334867 dissociates the motivational properties of alcohol and sucrose in rats. *Brain Res.*, **1391**, 54-59.
140. Liedtke, W., McKinley, M.J., Walker, L.L., Zhang, H., Pfenning, A., Drago, J., Hochendonera, S.J., Hilton, D.L., [Lawrence, A.J.](#) & Denton, D.A. (2011) Relation of addiction genes to hypothalamic gene changes subserving genesis and gratification of a classic instinct, sodium appetite. *Proc. Natl. Acad. Sci (USA)*, **108**, 12509-12514. (evaluated by Kent Berridge in Faculty of 1000).

141. Madsen, H., Navaratnarajah, S., Farrugia, J., Djouma, E., Ehrlich, M., Mantamadiotis, T., Van Deursen, J., Lawrence, A.J. (2011) CREB1 and CREB binding protein in striatal medium spiny neurons regulate behavioural responses to psychostimulants. *Psychopharmacology*, **219**, 699-713.
142. Jawahar MC, Sari CI, Wilson YM, Lawrence AJ, Brodnicki T, Murphy M. (2011) Audiogenic seizure proneness requires the contribution of two susceptibility loci in mice. *Neurogenetics*, **12**, 253-257.
143. Brown, RM, Duncan, JR, Stagnitti, MR, Ledent C & Lawrence AJ (2012) mGlu5 and adenosine A<sub>2A</sub> receptor interactions regulate the conditioned effects of cocaine. *Int. J. Neuropsychopharmacol.*, **15**, 995-1001.
144. Smith, C, Hosken, I, Sutton, S, Lawrence, AJ, Gundlach, AL (2012) Relaxin-3 null mutation mice display a circadian hypoactivity phenotype. *Genes, Brain Behav.*, **11**, 94-104.
145. Brown, RM, Stagnitti, MR, Duncan, JR & Lawrence, AJ (2012) The mGlu5 receptor antagonist MTEP attenuates opiate self-administration and cue-induced opiate-seeking behaviour in mice. *Drug Alc. Depend.*, **123**, 264-268.
146. Madsen, H, Brown, RM, Short, JL & Lawrence, AJ (2012) Investigation of the neuroanatomical substrates of reward-seeking following protracted abstinence in mice. *J. Physiol.*, **590**, 2427-2442.
147. Liu, Q, Zhang, M, Qin, WJ, Wang, YT, Li, YL, Jing, L, Li, JX, Lawrence, AJ & Liang JH (2012) Septal nuclei critically mediate the development of behavioral sensitization to a single morphine injection in rats. *Brain Res.*, **1454**, 90-99.
148. Qin, WJ, Wang, YT, Zhang, M, Wen, RT, Liu, Q, Li, YL, Chen, F, Lawrence, AJ & Liang JH (2013) Molecular chaperone Hsp70 participates in the labile phase of development of behavioral sensitization induced by a single morphine exposure in mice. *Int. J. Neuropsychopharmacol.*, **16**, 647-659.
149. Wen RT, Zhang M, Qin WJ, Liu Q, Wang WP, Lawrence AJ, Zhang HT, Liang JH (2012) The phosphodiesterase-4 (PDE4) inhibitor rolipram decreases ethanol seeking and consumption in alcohol-preferring Fawn-Hooded Rats. *Alc. Clin. Exp. Res.*, **36**, 2157-2167.
150. Duncan JR, Dick ALW, Egan G, Kolbe S, Gavrilesco M, Wright D, Lubman DI & Lawrence AJ (2012) Adolescent toluene inhalation in rats affects white matter maturation with the potential for recovery following abstinence. *PLoS One*, **7(9)**, e44790.
151. Farid WO\*, Lawrence AJ\*, Krstew EV, Tait RJ, Hulse GK & Dunlop SA (2012) Maternally administered sustained-release naltrexone in rats affects offspring neurochemistry and behaviour in adulthood. *PLoS One*, **7(12)**, e52812.\* = joint 1<sup>st</sup> authors.
152. Babovic D, Jiang L, Goto S, Gantois I, Schütz G, Lawrence AJ, Waddington JL & Drago J (2013) Behavioural and anatomical characterisation of mutant mice with targeted deletion of D1 dopamine receptor-expressing cells: response to acute morphine. *J. Pharmacol. Sci.*, **121**, 39-47.
153. Ryan PR, Buchler E, Shabanpoor F, Hossain MA, Wade JD, Lawrence AJ & Gundlach AL (2013) Central relaxin-3 receptor (RXFP3) activation decreases anxiety- and depressive-like behaviours in the rat. *Behav. Brain Res.*, **244**, 142-151.
154. Pang TY, Renoir T, Du X, Lawrence AJ & Hannan AJ (2013) Depression-related behaviours displayed by female C57BL/6J mice during abstinence from chronic ethanol consumption are rescued by wheel-running. *Eur. J. Neurosci.*, **37**, 1803-1810.
155. Brown RM, Khoo SYS & Lawrence AJ (2013) Central orexin (hypocretin) 2 receptor antagonism reduces ethanol self-administration, but not cue-conditioned ethanol-seeking, in ethanol-preferring (iP) rats. *Int. J. Neuropsychopharmacol.*, **16**, 2067-2079.



156. Chesworth R, Brown RM, Kim JH & [Lawrence AJ](#) (2013) The metabotropic glutamate 5 receptor modulates extinction and reinstatement of methamphetamine-seeking in mice. *PLoS One*, **8**(7), e68371.
157. Kim JH, Lavan D, Chen N, Flores C, Cooper H & [Lawrence AJ](#) (2013) Netrin-1 receptor-deficient mice show age-specific impairment in drug-induced locomotor hyperactivity but still self-administer methamphetamine. *Psychopharmacology*, **230**, 607-616.
158. Pang TY, Du X, Catchlove WA, Renoir T, [Lawrence AJ](#) & Hannan AJ (2013) Positive environmental modification of depressive phenotype and abnormal hypothalamic-pituitary-adrenal axis activity in female C57BL/6J mice during abstinence from chronic ethanol consumption. *Front. Pharmacol.*, **4**, 93 (1-9).
159. Kim HA, Jiang L, Madsen H, Parish, CL, Massalas J, Smardencas A, O'Leary C, O'Tuathaigh C, Waddington JL, Ehrlich ME, [Lawrence AJ](#) & Drago J (2014) Resolving pathobiological mechanisms relating to Huntington disease: gait, balance, and involuntary movements in mice with targeted ablation of striatal D1 dopamine receptor cells. *Neurobiol. Dis.*, **62**, 323-337.
160. Smardencas A, Rizkalla K, Kim HA, Massalas J, O'Leary C, Ehrlich ME, Schütz G, [Lawrence AJ](#) & Drago J (2013) Phenotyping dividing cells in mouse models of neurodegenerative basal ganglia diseases. *BMC Neurosci.*, **14**, 111.
161. Ryan PR, Kastman HE, Krstew EV, Rosengren KJ, Hossain MA, Churilov L, Wade JD, Gundlach AL & [Lawrence AJ](#) (2013) Relaxin-3/RXFP3 system regulates alcohol-seeking. *Proc. Natl. Acad. Sci (USA)*, **110**, 20789-20794.
162. Spanagel R, Vengeliene V, Jandeleit B, Fischer WF, Grindstaff K, Zhang X, Gallop M, Krstew EV, [Lawrence AJ](#) & Kiefer F (2014) Acamprosate produces its anti-relapse effects via calcium. *Neuropsychopharmacology*, **39**, 783-791.
163. Duncan JR, Gibbs SJ & [Lawrence AJ](#) (2014) Chronic intermittent toluene inhalation in adolescent rats alters behavioural responses to amphetamine and MK801. *Eur. Neuropsychopharmacol.*, **24**, 480-486
164. Dick AL, Axelsson, M, [Lawrence AJ](#)\* & Duncan JR\* (2014) Specific impairments in instrumental learning following chronic intermittent toluene inhalation in adolescent rats. *Psychopharmacology*, **231**, 1531-1542. \* denotes co-corresponding authors.
165. Wang YT, Qin WJ, Liu Q, Li YL, en F, [Lawrence AJ](#), Zhang XL, Liang JH (2014) Chaperone heat shock protein 70 in nucleus accumbens core: a novel biological target of behavioural sensitization to morphine in rats. *Int. J. Neuropsychopharmacol.*, **17**, 469-484.
166. Bird MK, Lohmann P, West B, Brown RM, Kirchhoff J, Raymond CR & [Lawrence AJ](#) (2014) The mGlu5 receptor regulates extinction of cocaine-driven behaviors. *Drug Alc. Depend.*, **137**, 83-89.
167. Handford CE, Tan S, [Lawrence AJ](#) & Kim JH (2014) The effect of the mGlu5 negative allosteric modulator MTEP and NMDA receptor partial agonist D-cycloserine on Pavlovian conditioned fear. *Int. J. Neuropsychopharmacol.*, **17**, 1521-1532.
168. Kim JH, Perry C, Luikinga S, Zbukvic I, Brown RM & [Lawrence AJ](#) (2015) Extinction of a cocaine-taking context that protects against drug-primed reinstatement is dependent on the metabotropic glutamate 5 receptor. *Addiction Biol.*, **20**, 482-489.
169. Madsen HB, Koghar HS, Pooters T, Massalas JM, Drago J & [Lawrence AJ](#) (2015) Role of  $\alpha$ - and  $\alpha$ -containing nicotinic receptors in the acquisition & maintenance of nicotine self-administration. *Addiction Biol.*, **20**, 500-512.

170. Dick AL, Lawrence AJ\* & Duncan JR\* (2014) Chronic intermittent toluene inhalation initiated during adolescence in rats does not alter voluntary consumption of ethanol in adulthood. *Alcohol*, **48**, 561-569. \* denotes co-corresponding authors.
171. Ryan PJ, Krstew EV, Sarwar M, Gundlach AL & Lawrence AJ (2014) Relaxin-3 mRNA levels in nucleus incertus correlate with alcohol and sucrose intake in rats. *Drug Alc. Depend.*, **140**, 8-16.
172. Ash BL, Quach T, Williams SJ, Lawrence AJ & Djouma E (2014) Galanin-3 receptor antagonism by SNAP 37889 reduces motivation to self-administer alcohol and attenuates cue-induced reinstatement of alcohol-seeking in iP rats. *J. Pharmacol. Sci.*, **125**, 211-216.
173. Li YL, Liu Q, Gong Q, Li JX, Wei SP, Wang YT, Liang H, Zhang M, Jing L, Yong Z, Lawrence AJ & Liang JH (2014) Brucine suppresses ethanol intake and preference in alcohol-preferring Fawn-Hooded rats. *Acta Pharmacol Sin.*, **35**, 853-861.
174. Chen NA, Jupp B, Sztainberg Y, Lebow M, Brown RM, Kim JH, Chen A & Lawrence AJ (2014) Knockdown of CRF1 receptors in the ventral tegmental area attenuates cue- and acute food deprivation stress-induced cocaine-seeking in mice. *J. Neurosci.*, **34**, 11560–11570 (featured in “This week in the journal”).
175. Darwinkel A, Stanic D, Booth LC, May CN, Lawrence AJ & Yao ST (2014) Distribution of orexin-1 receptor-green fluorescent protein- (OX1-GFP) expressing neurons in the mouse brain stem and pons: co-localisation with tyrosine hydroxylase and neuronal nitric oxide synthase. *Neuroscience*, **278**, 253–264 (front cover illustration).
176. Scheller KJ, Williams SJ, Lawrence AJ, Jarrott B & Djouma E (2014) An improved method to prepare an injectable microemulsion of the galanin-receptor3 selective antagonist, SNAP37889, using Kolliphor® HS 15. *MethodsX*, **1**, e212-216.
177. Ganella DE, Thangaraju P, Lawrence AJ & Kim JH (2015) Fear extinction in 17 day old rats is dependent on metabotropic glutamate receptor 5 signaling. *Behav. Brain Res.*, **298**, 32-36.
178. Chesworth R, Brown RM, Kim JH, Ledent C & Lawrence AJ (2016) Adenosine 2A receptors modulate reward behaviours for methamphetamine. *Addiction Biol.*, **21**, 407– 421.
179. Jiang L, O'Leary C, Kim HA, Parish CL, Massalas J, Waddington JL, Ehrlich ME, Schütz G, Gantois I, Lawrence AJ & Drago J (2015) Motor and behavioral phenotype in conditional mutants with targeted ablation of cortical D1 dopamine receptor-expressing cells. *Neurobiol. Dis.*, **76**, 137-158.
180. Walker AW, Smith CM, Chua BE, Krstew EV, Zhang C, Gundlach AL & Lawrence AJ (2015) Relaxin-3 receptor (RXFP3) signalling mediates stress-related alcohol preference in mice. *PLoS One*, **10**, e0122504.
181. Brown RM, Kim AK, Khoo SYS, Kim JH, Jupp B & Lawrence AJ (2016) Orexin-1 receptor signalling in the prelimbic cortex and ventral tegmental area regulates cue-induced reinstatement of ethanol-seeking in iP rats. *Addiction Biol.*, **21**, 603-612.
182. Sulaiman Ch'ng S & Lawrence AJ (2015) Distribution of the orexin-1 receptor (OX1R) in the mouse forebrain and rostral brainstem: a characterization of OX1R-eGFP mice. *J. Chem. Neuroanat.*, **66-67**, 1-9.
183. Tan SZK, Ganella DE, Dick ALW, Duncan JR, Palsson EO, Bathgate RAD, Kim JH & Lawrence AJ (2015) Spatial Learning Requires mGlu5 Signalling in the Dorsal Hippocampus. *Neurochem. Res.*, **40**, 1303-1310.
184. Smith CM, Walker LL, Chua BE, McKinley MJ, Gundlach AL, Denton DA & Lawrence AJ (2015) Involvement of central relaxin-3/RXFP3 signalling in sodium (salt) appetite. *Exp. Physiol.*, **100**, 1064-1072.
185. Dick AL, Pooters T, Gibbs S, Giles E, Qama A, Lawrence AJ & Duncan JR (2015) NMDA receptor binding is reduced within mesocorticolimbic regions following chronic inhalation of toluene in adolescent rats. *Brain Res.*, **1624**, 239-252.

186. Dick ALW, Simpson A, Qama A, L Z, Lawrence AJ & Duncan JR (2015) Chronic intermittent toluene inhalation in adolescent rats results in metabolic dysfunction with altered glucose homeostasis. *Br. J. Pharmacol.*, **172**, 5174-5187.
187. Lockie SH, Dinan T, Lawrence AJ, Spencer SJ & Andrews ZB (2015) Diet-induced obesity causes ghrelin resistance in reward processing tasks. *Psychoneuroendocrinology*, **62**, 114-120.
188. Walker AW, Smith CM, Gundlach AL & Lawrence AJ (2015) Relaxin-3 receptor (Rxfp3) gene deletion reduces operant sucrose- but not alcohol-responding in mice. *Genes, Brain Behav.*, **14**, 625-634.
189. Baker-Andresen D, Zhao Q, Li X, Jupp B, Chesworth R, Lawrence AJ\* & Bredy T\* (2015) Persistent variations in neuronal DNA methylation following cocaine self-administration and protracted abstinence in mice. *Neuroepigenetics*, **4**, 1-11. \*joint corresponding authors
190. Brown RM, Kupchik Y, Spencer S, Garcia-Keller C, Spanswick DC, Lawrence AJ, Simonds SE, Schwartz D, Jordan K, Zhou T & Kalivas PW (2017) Addiction-like synaptic impairments in diet-induced obesity. *Biol. Psychiatry*, **81**, 797-806.
191. Perry C, Reid F, Zbukvic IC, Kim JH & Lawrence AJ (2016) The metabotropic glutamate 5 receptor is necessary for extinction of cocaine associated cues. *Br. J. Pharmacol.*, **173**, 1085-1094.
192. Zbukvic IC, Ganella DE, Perry CJ, Madsen HB, Bye CR, Lawrence AJ & Kim JH (2016) The role of dopamine 2 receptor in impaired drug-cue extinction in adolescent rats. *Cerebral Cortex*, **26**, 2895-2904.
193. Wormald D, Lawrence AJ, Carter G & Fisher AD (2016) Validation of modified open field behaviour as a measure of trait anxiety in the dog. *Appl. Animal Behav. Sci.*, **179**, 95-102.
194. Wormald D, Lawrence AJ, Carter G & Fisher AD (2016) Physiological stress coping and anxiety in Greyhounds displaying inter-dog aggression. *Appl. Animal Behav. Sci.*, **180**, 93-99.
195. Chen NA, Ganella DE, Bathgate RAD, Chen A, Lawrence AJ & Kim JH (2016) Knockdown of corticotropin-releasing factor 1 receptors in the ventral tegmental area enhances conditioned fear. *Eur. Neuropsychopharmacol.*, **26**, 1533-1540.
196. Walker LC, Kastman HE, Koeleman JA, Smith CM, Perry CJ, Krstew EV, Gundlach AL & Lawrence AJ (2017) Nucleus incertus corticotrophin releasing factor 1 receptor signaling regulates alcohol seeking in rats. *Addiction Biol.*, **22**, 1641-1654.
197. Kastman HE, Blasiak A, Walker LC, Siwiec M, Krstew EV, Gundlach AL & Lawrence AJ (2016) Nucleus incertus orexin<sub>2</sub> receptors mediate alcohol seeking in rats. *Neuropharmacology*, **110**, 82-91.
198. Crossin R, Cairney S, Lawrence AJ & Duncan JR (2017) Adolescent inhalant abuse leads to other drug use and impaired growth; implications for diagnosis. *ANZ J. Pub. Health*, **41**, 99-104.
199. Srisontiyakul J, Kastman HE, Krstew EV, Govitrapong P & Lawrence AJ (2016) The nicotinic  $\alpha 6$ -subunit selective antagonist bPiDI reduces alcohol self-administration in alcohol-preferring rats. *Neurochem. Res.*, **41**, 3206-3214.
200. Wormald D, Lawrence AJ, Carter G & Fisher AD (2016) Analysis of correlations between early social exposure and reported aggression in the dog. *J. Vet. Behav. Clin. Appl. Res.*, **15**, 31-36.
201. Madsen HB, Zbukvic IC, Luikinga SJ, Lawrence AJ & Kim JH (2017) Extinction of conditioned cues attenuates incubation of cocaine craving in adolescent and adult rats. *Neurobiol. Learn. Mem.*, **143**, 88-93.

202. Furlong TM, Duncan JR, Corbit LH, Rae CD, Rowlands BD, Maher BD, Nasrallah FA, Milligan CJ, Petrou S, Lawrence AJ\* & Balleine BW\* (2016) Toluene inhalation in adolescent rats reduces flexible behaviour in adulthood and alters glutamatergic and GABAergic signalling. *J. Neurochem.*, **139**, 806-822. \*joint corresponding authors
203. Smith CM, Walker LL, Leeboonngam T, McKinley MJ, Denton DA & Lawrence AJ (2016) Endogenous central amygdala  $\mu$ -opioid receptor signalling promotes sodium appetite in mice. *Proc. Natl. Acad. Sci. (USA)*, **113**, 13893-13898.
204. Wormald D, Lawrence AJ, Carter G & Fisher AD (2017) Reduced heart rate variability in pet dogs affected by anxiety-related behaviour problems. *Physiol. Behav.*, **168**, 122-127.
205. Mercer LD, Higgins GC, Lau CL, Lawrence AJ & Beart PM (2017) MDMA-induced neurotoxicity of serotonin neurons involves autophagy and rilmenidine is protective against its pathobiology. *Neurochem. Int.*, **105**, 80-90.
206. Zbukvic IC, Park CHJ, Ganella DE, Lawrence AJ & JH Kim (2017) Prefrontal dopaminergic mechanisms of extinction in adolescence compared to adulthood in rats. *Front. Behav. Neurosci.*, **11**, 32.
207. Scheller KJ, Williams SJ, Lawrence AJ & Djouma E (2017) The galanin-3 receptor antagonist, SNAP 37889, suppresses alcohol drinking and morphine self-administration in mice. *Neuropharmacology*, **118**, 1-12.
208. Li M, Milligan CJ, Wang H, Walker A, Churilov L, Lawrence AJ, Reid CA, Hopkins SC, Petrou S (2017) KCTD12 modulation of GABA<sub>B</sub> receptor function. *Pharmacol. Res. Persp.*, **5**, e00319.
209. Ganella DE, Lee-Kardashyan L, Luikinga SJ, Nguyen DLD, Madsen HB, Zbukvic IC, Coulthard R, Lawrence AJ & Kim JH (2017) Aripiprazole facilitates extinction of conditioned fear in adolescent rats. *Front. Behav. Neurosci.*, **11**, 76.
210. Crossin R, Cairney S, Lawrence AJ & Duncan JR (2017) The persistence of growth impairments associated with adolescent inhalant abuse following sustained abstinence. *Addiction Res. Theory*, in press.
211. Walker LC, Kastman HE, Krstew EV, Gundlach AL & Lawrence AJ (2017) Central amygdala relaxin-3/RXFP3 signalling modulates alcohol-seeking in rats. *Br. J. Pharmacol.*, **174**, 3359-3369.
212. Berizzi AE, Perry CJ, Shackelford DM, Lindsley CW, Jones CK, Chen NA, Sexton PM, Christopoulos A, Langmead CJ & Lawrence AJ (2018) Muscarinic M5 receptors modulate ethanol seeking in rats. *Neuropsychopharmacology*, in press.
213. Campbell EJ, Flanagan JPM, Marchant NJ & Lawrence AJ (2018) Reduced alcohol-seeking in male offspring of alcohol-experienced sires. *Pharmacol. Res. Persp.*, e00384.

## Reviews:

1. Lawrence A.J. (1995) Neurotransmitter mechanisms of rat vagal afferent neurons. *Clin. Exp. Pharmacol. Physiol.*, **22**, 869-873.
2. Lawrence A.J. & Jarrott B. (1996) Neurochemical modulation of cardiovascular control in the nucleus tractus solitarius. *Prog. Neurobiol.*, **48**, 21-53.
3. Lawrence A.J. (1997) Nitric oxide as a modulator of medullary pathways. *Clin. Exp. Pharmacol. Physiol.*, **24**, 760-763.
4. Cowen, M.S. & Lawrence A.J. (1999) The role of opioid-dopamine interactions in the induction and maintenance of ethanol consumption. *Prog. Neuropsychopharmacol. Biol. Psych.*, **23**, 1171-1212.

5. Lodge D. & Lawrence, A.J. (2003) The neurochemical effects of anxiolytic drugs are dependent on rearing conditions in Fawn-Hooded rats. *Prog. Neuropsychopharmacol. Biol. Psych.*, **27**, 451-458.
6. Cowen, M.S., Chen, F. & Lawrence A.J. (2004) Neuropeptides: Implications for alcoholism. *J. Neurochem.*, **89**, 273-285.
7. Yao, S.T., Fong, A.Y. & Lawrence, A.J. (2004) Purinergic transmission and central autonomic regulation. *Curr. Topics Pharmacol.*, **8**, 167-184.
8. Cowen, M.S. & Lawrence A.J. (2006) Alcoholism and neuropeptides: an update. *Curr. Drug Targets, CNS & Neurol. Dis.*, **5**, 233-239.
9. McDougall, S.J., Widdop, R.E. & Lawrence, A.J. (2005) Central Autonomic Integration of Psychological Stressors: Focus on Cardiovascular Modulation. *Auton. Neurosci. Basic & Clinical*, **123**, 1-11.
10. Overstreet, D.H., Rezvani, A.H., Cowen, M., Chen, F. & Lawrence, A.J. (2006) Modulation of high alcohol drinking in the inbred Fawn-hooded (FH/Wjd) rat strain: implications for treatment. *Addiction Biol.*, **11**, 356-373.
11. Overstreet, D.H., Rezvani, A.H., Djouma, E., Parsian, A. & Lawrence, A.J. (2007) Depressive-like behaviour and high alcohol drinking occur in the FH/Wjd rat but appear to be under independent genetic control. *Neurosci. & Biobehav. Rev.*, **31**, 103-114.
12. Lawrence, A.J. (2007) Therapeutics for alcoholism: what's the future? *Drug Alc. Rev.*, **26**, 3-8.
13. McPherson, C.S. & Lawrence, A.J. (2007) The Nuclear Transcription Factor CREB: Involvement in Addiction, Deletion Models and Looking Forward. *Curr. Neuropharmacol.*, **5**, 202-212.
14. Adams, C.L. & Lawrence, A.J. (2007) CGP7930: A positive allosteric modulator of the GABA<sub>B</sub> receptor. *CNS Drug Reviews*, **13**, 308-316.
15. Lawrence, A.J. (2008) The demon drink: what's on the horizon? *Chemistry in Australia*, **75**, 16-18.
16. Lubman, D.I., Yücel, M. & Lawrence, A.J. (2008) Inhalant abuse among adolescents: neurobiological considerations. *Br. J. Pharmacol.*, **154**, 316-326.
17. Bird, M.K. & Lawrence, A.J. (2009) Group I metabotropic glutamate receptors: involvement in drug-seeking & drug-induced plasticity. *Curr Mol. Pharmacol.*, **2**, 83-94.
18. Brown, R.M. & Lawrence, A.J. (2009) Neurochemistry underlying relapse to opiate seeking behaviour. *Neurochem. Res.*, **34**, 1876-1887.
19. Lawrence, A.J. (2010) Regulation of alcohol-seeking by orexin (hypocretin) neurons. *Brain Res.*, **1314**, 124-129.
20. Bird, M.K. & Lawrence, A.J. (2009) The promiscuous mGlu5 receptor - a range of partners for therapeutic possibilities? *Trends Pharmacol. Sci.*, **30**, 617-623.
21. Lawrence, A.J. (2009) Factors regulating stress-induced alcohol-seeking and pharmacotherapeutic treatments. *Alcohol*, **43**, 545-546.
22. Jupp, B. & Lawrence, A.J. (2010) New horizons in therapeutics for drug & alcohol abuse. *Pharmacol. Ther.*, **125**, 138-168.

23. Liu, Q., Lawrence, A.J. & Liang, J-H. (2011) Traditional Chinese medicine for treatment of alcoholism: from ancient to modern. *Am. J. Chinese Med.*, **39**,1-13.
24. Duncan, J.R. & Lawrence, A.J. (2012) The role of metabotropic glutamate receptors in addiction: evidence from preclinical models. *Pharmacol. Biochem. Behav.*, **100**, 811-824.
25. Rezvani, AH, Lawrence, AJ, Arolfo, MP, Levin, ED & Overstreet, DH (2012) Novel Medication Targets for the Treatment of Alcoholism: Preclinical Studies. *Recent Patents on CNS Drug Discovery*, **7**, 151-162.
26. Brown, RM, Mustafa, S, Ayoub, MA, Dodd, PR, Pflieger, KDG & Lawrence, AJ (2012) mGlu5 Receptor Functional Interactions and Addiction. *Frontiers Neuropharmacol.*, **3**, 84 (1-9).
27. Madsen, H, Brown, RM & Lawrence AJ (2012) Neuroplasticity in addiction: cellular and transcriptional perspectives. *Frontiers Mol. Neurosci.*, **5**, 99 (1-16).
28. Kim, AK, Brown, RM & Lawrence AJ (2012) The role of orexins/hypocretins in alcohol use and abuse: an appetitive-reward relationship. *Frontiers Behav. Neurosci.*, **6**, 78 (1-8).
29. Brown RM & Lawrence AJ (2013) Ascending orexinergic pathways and alcohol-seeking. *Curr. Opin. Neurobiol.*, **23**, 467-472.
30. Duncan JR & Lawrence AJ (2013) Conventional concepts and new perspectives for understanding the addictive properties of inhalants. *J. Pharmacol. Sci.*, **122**, 237-243.
31. Baimel C, Bartlett SE, Chiou L-C, Lawrence AJ, Muschamp JW, Patkar O, Tung L-W & Borgland SL (2015) Orexin/hypocretin role in reward: implications for opioid and other addictions. *Br. J. Pharmacol.*, **172**, 334-348.
32. Perry C, Zbukvic I, Kim JH & Lawrence AJ (2014) The role of cues and contexts on drug-seeking behaviour. *Br. J. Pharmacol.*, **171**, 4636-4672.
33. Kim JH & Lawrence AJ (2014) Drugs currently in Phase II clinical trials for cocaine addiction. *Expert Opin. Investig. Drugs.*, **23**, 1105-1122.
34. Giles EK, Lawrence AJ & Duncan JR (2014) Exploring the modulation of hypoxia-inducible factor (HIF)-1 $\alpha$  by volatile anesthetics as a possible mechanism underlying volatile anesthetic-induced CNS injury. *Neurochem. Res.*, **39**, 1640-1647.
35. Curtis MJ, Bond RA, Spina D, Ahluwalia A, Alexander SP, Giembycz MA, Gilchrist A, Hoyer D, Insel PA, Izzo AA, Lawrence AJ, MacEwan DJ, Moon LD, Wonnacott S, Weston AH & McGrath JC (2015) Experimental design and analysis and their reporting: new guidance for publication in BJP. *Br. J. Pharmacol.*, **172**, 3461-3471.
36. Walker LS, Ch'ng SS & Lawrence AJ (2016) Role of lateral hypothalamic orexin (hypocretin) neurons in alcohol use and abuse: recent advances. *Curr. Pharmacol. Rep.*, **2**, 241-252.
37. Perry CJ & Lawrence AJ (2017) Addiction, cognitive decline and therapy: Seeking ways to escape a vicious cycle. *Genes Brain Behav.*, **16**, 205-218.
38. Walker LC & Lawrence AJ (2017) The Role of Orexins/Hypocretins in Alcohol Use and Abuse. *Curr. Top. Behav. Neurosci.*, **33**, 221-246.
39. Walker LC & Lawrence AJ (2017) CRF and the nucleus incertus: a node for integration of stress signals. *Nature Rev. Neurosci.*, **18**, 158.
40. Smith CM & Lawrence AJ (2017) Salt appetite, and the influence of opioids. *Neurochem. Res.*, **43**, 3-9.
41. Perry CJ & Lawrence AJ (2017) Hurdles in Basic Science Translation. *Front. Trans. Pharmacol.*, **8**, 478.

42. Ch'ng S, Fu J, Brown RM, McDougall SJ & Lawrence AJ (2018) The intersection of stress and reward: BNST modulation of aversive and appetitive states. *Prog. Neuropsychopharmacol. Biol. Psych.*, in press.

### Refereed Conference Proceedings:

1. Smith CM, Lawrence AJ, Sutton SW, Gundlach AL (2009) Behavioral phenotyping of mixed background (129S5:B6) relaxin-3 knockout mice. *Ann N Y Acad Sci.*, **1160**, 236-241.

2. Gundlach AL, Ma S, Sang Q, Shen PJ, Piccenna L, Sedaghat K, Smith CM, Bathgate RA, Lawrence AJ, Tregear GW, Wade JD, Finkelstein DI, Bonaventure P, Liu C, Lovenberg TW, Sutton SW (2009) Relaxin family peptides and receptors in mammalian brain. *Ann N Y Acad Sci.*, **1160**, 226-235.

### Commentaries / Editorials:

1. Lawrence, A.J. (2007) Optimisation of anti-psychotic therapeutics – a balancing act? *Br. J. Pharmacol.*, **151**, 161-162.

2. Lawrence, A.J., Beart, P.M. & Kalivas, P.W. (2008) Neuropharmacology of addiction-setting the scene. *Br J Pharmacol.*, **154**, 259-260.

3. Lawrence, A.J. & Heinz, A. (2011) Imaging – The Interface with Pharmacology: looking to the future. *Br. J. Pharmacol.*, **163**, 1563-1564.

4. Brown, R.M. & Lawrence, A.J. (2012) Commentary on: Compulsive use of dopamine replacement therapy in Parkinson's disease: insights into the neurobiology of addiction. *Addiction*, **107**, 250-251.

5. Lawrence AJ & Cryan JF (2014) Found in translation? Commentary on a BJP themed issue about animal models in neuropsychiatry research. *Br. J. Pharmacol.*, **171**, 4521-4523.

### Chapters:

1. Lawrence A.J. & Traynor J.R. (1990) Sensitivity of opioid antagonist binding to sodium ions and guanine nucleotides. In: *New Leads in Opioid Research* (J.M. Vanree, A.U. Mulder, V.M. Wiegaut and T.B. van Wimersma eds.), Greidanus, Excerpta Med., Amsterdam, pp 198-200.

2. Lawrence A.J., Munday M.K. & Marsden C.A. (1991) Terminal autoreceptor control of frontal cortical 5-HT release in the freely-moving guinea-pig. In: *Monitoring Molecules in Neuroscience* (H. Rollema, B. Westerink and W.J. Drijfhout eds.), Krips Repro, Meppel, Holland pp 268-270.

3. Wright I.K., Lawrence A.J., Munday M.K. & Marsden C.A. (1992). 'Autoreceptor mediated changes in 5-HT release during behaviour' in: *Serotonin, CNS Receptors and brain function*, eds. P.B. Bradley, S.L. Handley, S.J. Cooper, B.J. Key, N.M. Barnes and J.H. Coote, Pergamon Press, U.K., pp 119-133.

4. Lawrence A.J. (1997) In Vivo Microdialysis; In: *Neuroscience Methods, A Guide for Advanced Students*. Ed. Martin R., Harwood Academic Publishers.

5. Mercer, L.D., Nunan, J., Jones, N.M., Lawrence, A.J., Cheung, N.S., Mercer, J.F.B., Firth, S.D., Thompson, P., Jarrott, B., Finkelstein, D.I. & Beart, P.M. (1999). Immunohistochemistry with antibodies to the cholecystokinin-A receptor reveals a widespread distribution in rat and monkey central nervous system. In: *Peptidergic G Protein-Coupled Receptors*, eds. P. Geppetti, W. Müller-Esterl and D. Regoli, IOS Press, Amsterdam, pp175-180.

6. Giardina, S.F., Carroll, F.Y., Moldrich, R.X., Finkelstein, D.I., Horne, M.K., Lawrence, A.J., Cheung, N.S. & Beart, P.M. (2001). Kainate receptors, cellular signaling and excitotoxic neuronal death: new pharmacological evidence for the functional involvement of low-affinity and metabotropic kainate receptors. In: *Excitatory Amino Acids: Ten Years Later*, eds. L. Turski, D.D. Schoepf & E.A. Cavalheiro, IOS Press, Amsterdam, pp161-172.
7. Jawahar MC, Brodnicki TC, Lawrence AJ, Wilson YM, Murphy M. Approaches to study the genetics of behavioural variation using mice and rats. In "Animal Genetics" ed Columbus F. Nova Science Publishers, Inc. Hauppauge, NY. (accepted for publication 20/11/08).
8. Duncan, J.R. & Lawrence, A.J. (2011) Molecular neuroscience & genetics. In: "Addiction Neuroethics: The Ethics of Addiction Neuroscience Research and Treatment" eds Carter A., Hall, W. & Illes J. Academic Press, pp 27-54.
9. Brown RM, Lawrence AJ & Kim JH (2012). The role of mitogen-activated protein kinase in treatment strategies for fear and drug addiction. In, *Advances in Protein Kinases*, Dr. Gabriela Da Silva Xavier (Ed.), ISBN: 978-953-51-0633-3, InTech, <http://www.intechopen.com/books/advances-in-protein-kinases/the-role-of-mitogen-activated-protein-kinase-in-treatment-strategies-for-fear-and-drug-addiction>
10. Kim JH & Lawrence AJ (2012). The role of metabotropic glutamate 5 receptor in addiction. In J.J. Canales (Ed), *Emerging Targets for Drug Addiction Treatment*. Chapter 9, pp 183-202. NOVA publishers: New York.
11. Overstreet DH, Brown RM, Lawrence AJ & Rezvani AH (2013) Overview of Animal Models of Drug Addiction: Commonalities to Human Addiction. In: *Biological Research on Addiction: Comprehensive Addictive Behaviors and Disorders*. Elsevier Inc., San Diego: Academic Press, pp. 149–157. ISBN: 9780123983350.
12. Perry C & Lawrence AJ (2016) mGlu5 modulators: potential agents for treating cocaine addiction. In: *The Neuropathology Of Drug Addictions And Substance Misuse. 2*: Chapter 8, pp86-96. Elsevier
13. Perry CJ, Olive MF & Lawrence AJ (2017) mGlu5 Signaling: A Target for Addiction Therapeutics? In: *The Receptors – 31 mGlu Receptors*: Chapter 1, pp 1-15. Humana Press, Springer.

#### **Book Reviews:**

1. Lawrence, A.J. (2003). Glutamate & Addiction (Eds: B.H. Herman, J. Frankenheim, R.Z. Litten, P.H. Sheridan, F.F. Weight, S.R. Zukin), Humana Press, 2002. *Clin. Exp. Physiol. Pharmacol.*, **30**, 300.

#### **Technical Reports:**

1. Brown, RM & Lawrence, A.J. (2012). Intravenous Self-Administration of Drugs of Abuse in Mice. <http://www.med-associates.com/medlines/Summer2012/InYourLab-Summer2012.html>

#### **Patents:**

1. Beart PM, O'Shea RD, Apricò K, Lawrence AJ, Maccacchini M-L; Monash University, assignee. 2002 Filed September 1, 2001; Published August 22, 2002. Screen for glutamate reuptake inhibitors, stimulators, and modulators. United States patent US2002/115688.
2. Beart PM, O'Shea RD, Apricò K, Lawrence AJ, Maccacchini M-L; Annovis Inc. Monash University, assignee. 2002 Filed August 31, 2001; Published March 07, 2002. Screen for glutamate reuptake inhibitors, stimulators, and modulators. World Intellectual Property Organization, International Bureau patent WO0218941 (AU8865801).
3. Gundlach, A.L. & Lawrence, A.J. Florey Neuroscience Institutes 2010. Preliminary patent application, AU/2010904040: Treatments for substance abuse and addiction. Date filed 08/09/2010, published as WO 2012/031328 on 15/04/2012.



4. Liang, J.H., Chen, F. & Lawrence, A.J. National Institute of Drug Dependence, University of Beijing, PR China 2010. Patent Application Number 201010194835-7 the National Department of Intellectual Patent of People's Republic of China. Application of brucine and its derivatives in the treatment of alcohol abuse and alcohol dependence.

5. Rosengren KJ, Haugaard-Kedstrom L, Bathgate RAD, Hossain MA, Wade JD, Gundlach AL, Lawrence AJ. "Single chain relaxin polypeptides", Patent assigned to Howard Florey Institute. International patent application number PCT/AU2011/001158; Filed 08/09/2011.