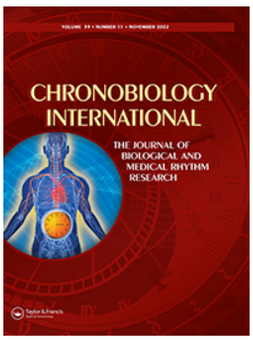

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Stuart Maxwell Armstrong (1947-2022)

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On June 3, 2022, after long, 3 year battle with dementia Stuart Maxwell Armstrong, Professor of Chronobiology and friend of many across the globe, passed away.

Stuart Armstrong was born in Ammanford, South Wales in the United Kingdom in 1945 and migrated to Australia in 1972. He leaves behind his wife, 2 children and many friends that remain deeply saddened by his passing. He was educated at the University of London in 1970 and took his Bachelor's Degree in Zoology and Psychology. He took his Masters Preliminary in Psychology with First Class Honours at La Trobe University in 1973 and then read for his Doctorate that was awarded in 1979, also from La Trobe. He was a registered psychologist and a member of the Australian Psychological Society (APS) and a founding member of the Australian Sleep Association (ASA), for which he received the President's award in 2013. His level of professional commitment and his friendly and cooperative nature was evidenced by the professional positions he held in Australia and the collaborations he undertook abroad. He advanced rapidly in the Department of Psychology at La Trobe University as he was promoted from tutor to lecturer to Reader in less than a decade. His collaborations as a visiting senior scientist and senior research fellow included The Institute of Neuroscience, University of Oregon, U.S.A. and the Max-Planck-Institute `für Verhaltensphysiologie in Andechs, FRG. His affiliations with Australian Institutes included The Key Centre for Woman's Health at the University of Melbourne and the Department of Psychology at Swinburne University.

After taking an early retirement from La Trobe University in 1996 he worked as chief consultant (external) to the international pharmaceutical company Servier International [France] examining the chronobiotic efficacy of Valdoxan, and to Eli Lilly

[USA] looking at the chronobiotic efficacy of LY156735. He became an Honorary Professorial Fellow then Adjunct Professor at the Brain Sciences Institute at Swinburne

University in Melbourne and continued with his clinical health work at the Epworth Sleep Centre and Heidelberg Repatriation hospital where he served as Director of The Sleep Disorders Clinic in the Veterans Psychiatry Unit.

His ability to collaborate and cross disciplinary boundaries is reflected in the breadth of his research activities. He published 112 scientific publications and attended and/or chaired more than 150 professional meetings and presentations. While mechanisms of hunger and chronobiology and the mechanisms of circadian function were at the core of his work his contribution to understanding the biological basis of several illnesses included seasonal affective disorder (SAD), panic disorder, narcolepsy, insomnia and other sleep disorders.

In his last affiliation before being severely impacted by his impending illness he played an integral role in exploring the role of the circadian system in idiopathic Parkinson's disease at the Bronowski institute of Behavioural Neuroscience in Melbourne. Not only was he part of the first study to examine the effect of bright light therapy in models of Parkinson's disease but he co-authored the pioneering work on the long term benefits of bright light therapy in patients with this chronically debilitating condition. Indeed, his involvement in this work continues even after his passing as two manuscripts are yet to bear his name.

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The importance of his lifelong contribution to science and his friendly, boyish-like nature are best reflected in comments contributed by some of his professional colleagues. Dr Robert Sack describes the importance of Stuart's work and the inspiration derived there from, in the subsequent work that transpired.

Professor Robert Sack writes:

"The demonstration by Redman, Armstrong, and Ng (1983) of entrainment of free running rhythms in rodents with melatonin administration provided the essential stimulus underlying our program to treat totally blind people who had free running rhythms, leading to a report in the New England Journal of Medicine (2000). The first sentence of the section on melatonin treatment in my review article (2007) on Circadian Rhythm Sleep Disorders (2007) highlights the importance of his discovery . . . I got to know Stuart from conversing with him at scientific meetings. He was creative, honest, and had a sparkling sense of humour. "

Oregon Health and Sciences University Primary Care Clinic

6th August, 2022

Professor Vincent Cassone writes:

"Stuart had a very playful mind. He took quite a lot of joy in upending the status quo, which he often did as we explored together the remarkable effects of melatonin on rat circadian rhythms. However, it was his kindness and generosity that I remember the most. We were at a CIBA conference in London years ago and went shopping for souvenirs for our loved ones together. He noticed a black studded motorcycle jacket on a rack and, knowing I was an avid biker, suggested I try it on. Of course, I loved it but, feeling guilty about buying a souvenir for myself, I put it back. We agreed to part and meet up for dinner later that evening. That night, he strolled into the restaurant wearing the jacket! "You bastard!" I cried! "You're wearing my jacket!" He looked down in surprise and said, "My God, you're right! It is your jacket!" and he handed me this heavy leather biker jacket with steel studs. I still have that jacket, but I remember better the gleeful smile on his face when he gave it to me. Great bloke. He'll be missed."

University of Kentucky

9th September, 2022

Professor Emeritus Jo Arendt writes:

I was shocked and immensely saddened to hear that Professor Stuart Armstrong had died. He was part of a 'cohort' from an era when great advances were made in chronobiology. His own major contributions first saw the light in 1983 when, with his PhD student Jenny Redman as first author he published a land mark paper in Science on the entrainment of rat activity rest cycles by melatonin.

I first met Stuart in 1984 at a CIBA Foundation Symposium on Photoperiodism, Melatonin and the Pineal Gland (published in 1985), initiated by Professor Vincent Marks and myself, in fact I think I invited him. Here he and Jenny reported what may be more important from the point of view of pineal physiology – that pinealectomy i.e. removal of circulating melatonin, facilitates phase shifting in rats. Thus the endogenous role of melatonin apart from signalling day length may well be to counter undesirable shifts in circadian phase. The circadian time dependency of melatonin's effects, and thus the melatonin phase response curve (PRC) together with possible dose-dependency were all addressed in these studies. Working with Cassone and Chesworth, Stuart was also to show the SCN dependency of melatonin's chronobiotic effects. Early work in humans was also presented at this CIBA Symposium and both rats and humans heralded an enormous expansion of interest in the therapeutic potential of melatonin including in our work on entrainment of the blind (*BMJ*, 1986; *Lancet*, 1988; *J. Endocrinology*, 2000).

Since that time Stuart has pursued his innovative research, his clinical studies, his teaching, reviewing and writing. He has been particularly concerned with sleep disorders and Parkinson's disease. We kept in

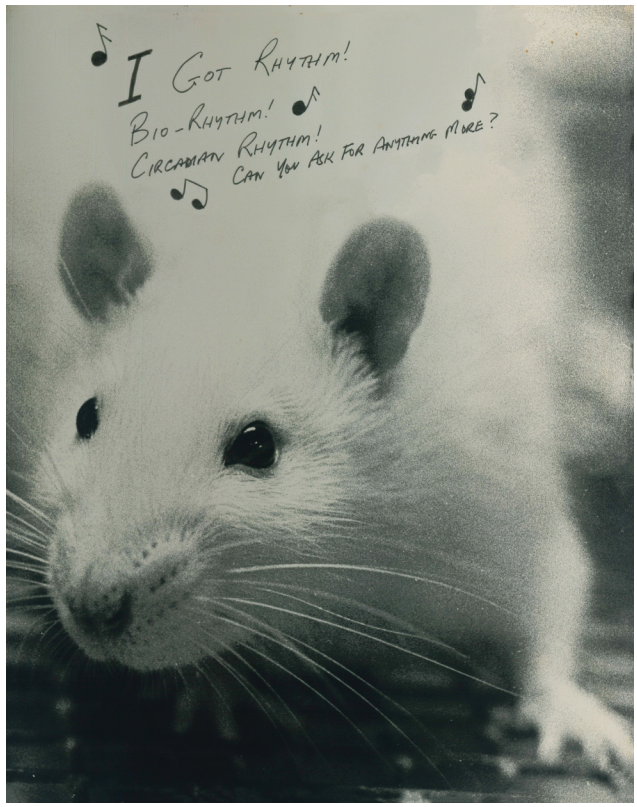

Figure 1. Stuart's satirical depiction of a life devoted to the study of circadian function.

touch but with rare occasions to meet. Jenny Redman came to work in my laboratory for several months which was a real pleasure and reinforced the connection. I had the honour of being one of her Thesis examiners- and now we are friends.

Stuart graduated from the University of London, worked in several international research organisations, and ultimately became an Australian citizen. A wise move to a great country. May he rest there in peace.

University of Surrey, UK

26th August 2022

While new roads in circadian biology lie ahead, the directions in which the field will progress are unknown. Although we have many reasons to mourn the loss of a great friend and colleague, our memories of Stuart's friendship and his contributions leaves us with a sense of gratitude and fulfilment. Toward the end of his time with us Stuart left me with a "gift of encouragement" for the laboratory that portrayed his unwavering dedication to his life-long scientific commitment; expressed in the context of his light hearted, boyish outlook on life (See Figure 1). While the disheartening impact of dementia robbed his family, friends and colleagues of a chance to say "goodbye" we are thankful for all that he gave us. May he rest in peace in the warm sands of Queensland where he found solace while he was there.

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