University of Birmingham

Dr Roland Brandstaetter PhD

Senior Lecturer in Animal Biology

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About

Dr Roland Brandstaetter is a Zoologist with specialisations in developmental biology, physiology, neurobiology, neuroendocrinology, and circadian biology. His research approach is holistic and considers mechanistic investigations at various levels of organismal organisation to study complex natural traits. He worked at several European Universities and Max-Planck-Institutes before taking a position as Senior lecturer at the University of Birmingham in 2003. His research has resulted in more than 60 publications ranging from development of fishes to circadian biology of birds and cancer biology in mammals. Dr Brandstaetter has recently focused his research on the biological clock in humans and the impact of circadian phenotypes on health, well-being, and performance. He has launched the first circadian advice bureau and sleep clinic at the University of Birmingham, a research-informed therapy centre for people suffering from circadian disruptions and sleep disorders. Dr Brandstaetter's research is focused on the real world application of basic science and the development of novel circadian therapies to improve health, well-being, and performance in humans.

Qualifications

- **1987** Diploma (Masters) in Biology (Zoology), University of Salzburg, Austria.
  Specialisations: Marine Biology, Reproductive Biology, Develeopmental Biology, Comparative Endocrinology.
- **1990** Doctoral Degree in Biology (Zoology), University of Salzburg, Austria.
  Specialisations: Ecology, Morphology, Neurobiology.

Biography

- **1987-1988** Assistant Professor at the Department of Theoretical Biology, Institute of Zoology, University of Vienna, Austria.
- **1989 – 1990** Assistant Professor at the Institute of Zoology, University of Salzburg, Austria.
- **1991 – 1993** Research Fellow of the Alexander von Humboldt-Foundation and the Max-Planck-Society at the Max-Planck-Institute for Physiological and Clinical Research, Bad Nauheim, Germany.
- **1993 – 1996** Assistant Professor and Group Leader at the Department of Animal Physiology, Institute of Zoology, University of Salzburg, Austria.
- 199**6 – 2003** Staff Scientist and Group Leader at the Max-Planck-Institute of Ornithology in Andechs/Seewiesen, Germany.
- **Since August 2003** Senior Lecturer in Animal Biology at the School of Biosciences, University of Birmingham.

Teaching

Throughout his career, Dr Brandstaetter has focused on the development of a unique teaching curriculum in Higher Education. Dr Brandstaetter's University teaching experience includes the Universities of Vienna and Salzburg in Austria, the Universities of Giessen, Frankfurt and Munich in Germany, and the University of Ferrara in Italy. Dr Brandstaetter has also organised several international undergraduate and postgraduate events, such as summerschools and workshops.

At the University of Birmingham, Dr Brandstaetter is Head of the Zoology Degree Label and Head of the Human Biology Programme. He is module leader of BIO 394 Integrated Whole-Organism Biology, one of our most popular and best evaluated final year modules, and BIO 266 Animal Sensory Systems, Neurobiology, and Behaviour. Dr Brandstaetter also teaches on BIO 145 Evolution and Animal Biology, BIO 152 Cell Biology and Physiology, BIO 263 Human Evolution, and BIO 264 Developmental Biology. Further teaching activities include tutorial groups, final year project supervision, and Master's and PhD project supervision. Dr Brandstaetter's project topics include human biorhythms, neurobiology of learning and memory, and neurobiology and molecular biology of the circadian system. Dr Brandstaetter is a member of the strategic learning and teaching group of the School of Biosciences.

Postgraduate supervision

For a list of possible PhD projects offered by Dr Brandstaetter:

www.findaphd.com/search/customlink.asp?inst=birm-Biol&supersurname=Brandstaetter (http://www.findaphd.com/search/customlink.asp?inst=birm-Biol&supersurname=Brandstaetter)

Research

Following research on the development of fishes and the ecomorphology of the developing brain in fishes, Dr Brandstaetter became interested in the circadian system during his first postdoctoral research years at the Max-Planck-Institute for Physiological and Clinical Research in Germany. After several years of research on the physiology of the pineal gland of fishes, Dr Brandstaetter moved on to study the circadian system of birds at the Max-Planck-Institute of Ornithology in Germany. Dr Brandstaetter's research interests encompass the circadian control of reproduction and migration in birds, the circannual clock mechanism in birds, and neural plasticity of the adult vertebrate brain, and the human body clock. Dr Brandstaetter studies circadian phenotypes in humans and the impact on health, well-being, and performance. The aim of this research is the real world application of basic science and the development of novel therapies for circadian disruptions and sleep disorders.

Publications

BRANDSTAETTER R., KUMAR V., ABRAHAM U. & E. GWINNER (2000) Photoperiodic information acquired in vivo is retained in vitro by a circadian oscillator, the avian pineal gland. Proc. Natl. Acad. Sci. USA 97: 12324-12328.

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ABRAHAM U., ALBRECHT U., GWINNER E. & R. BRANDSTAETTER (2002) Spatial and temporal variation of passerPer2 gene expression in two distinct cell groups of the suprachiasmatic hypothalamus in the house sparrow (*Passer domesticus*). European J. Neurosci. 16: 429-436.

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BRANDSTAETTER R. & U. ABRAHAM (2003) Hypothalamic circadian organisation in birds: I. Anatomy, functional morphology and terminology. Chronobiol. Int. 20:637-55.

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BRANDSTAETTER R. & J. KREBS (2004) Obituary: Eberhard Gwinner (1938-2004). Nature. 432: 687.

BRANDSTAETTER R. (2004) Circadian lessons from peripheral clocks: is the time of the mammalian pacemaker up? Proc Natl Acad Sci U S A. 101: 5699-700.

FOA A, BRANDSTAETTER R & BERTOLUCCI C. (2006) The circadian system of ruin lizards: a seasonally changing neuroendocrine loop? Chronobiol Int. 23: 317-327.

HELFER G, FIDLER AE, VALLONE D, FOULKES NS & BRANDSTAETTER R. (2006) Molecular analysis of clock gene expression in the avian brain. Chronobiol Int. 23:113-127.

JONES C, HELFER G & BRANDSTAETTER R. (2012) Melatonin receptor expression in the zebra finch brain and peripheral tissues. Chronobiol Int. 29: 189-202.

BRANDSTAETTER R. (2013) Surgical pinealectomy in birds. In: Step by Step Experimental Pinealectomy Techniques in Animals for Researchers. pp 63-86, Nova Science Publishers.

FACER-CHILDS E, BRANDSTAETTER R. (2014) Citius, altius, fortius: a matter of circadian phenotype and time of day (submitted).