



Seewiesen Colloquia

Speaker invited by: Dept. Kempenaers

Monday, 9 February 2015, 13:00 h, in House 4, Lecture Room

„Fear in free-living wildlife and human mental health“

Dr. Michael Clinchy

University of Victoria, Victoria, Canada

Not only is fear something that can be measured in the brain, as has long been established, new biomedical research suggests that ‘fear of predators’ can itself be measured in the brain. This progress has been made in part because exposure to a predator is now the most common stressor used in studying the animal model of post-traumatic stress disorder (PTSD). I will discuss the benefits and challenges of translating neurobiological findings in the lab to ecological research in the field. The fact that predator exposure can have long-lasting effects on the brain resembling those seen in PTSD patients provides a compelling link between fear of predators and likely effects of demography. The simplest challenge is collecting brain tissue in the field. More challenging is whether predator effects on brain activity will be identifiable, since unlike in the lab where all other stimuli are eliminated, animals in the field are subject to myriad stimuli. Most challenging is simply where to look in the brains of species other than rats and humans. For example, to explore the neurobiological ecology of fear in our lab, in relation to the effects we have already documented on the physiology, behaviour and demography of songbirds, we are presently endeavouring to identify the ‘predator fear’ pathway in the avian brain.

Who is Mike Clinchy?

- 1999 PhD University of British Columbia, CANADA
- 2001 Postdoctoral Research Associate, University of Alberta, CANADA
- 2002 NSERC Postdoctoral Fellowship, University of Toronto, CANADA
- 2005 Adjunct Professor, University of Victoria, CANADA

Selected publications:

- Clinchy, M., Zanette, L., Boonstra, R., Wingfield, J.C. and Smith, J.N.M. 2004 Balancing food and predator pressure induces chronic stress in songbirds. *Proceedings of the Royal Society B* 271: 2473-2479.
- Clinchy, M., Schulkin, J., Zanette, L.Y., Sheriff, M.J., McGowan, P.O. and Boonstra, R. 2011 The neurological ecology of fear: insights neuroscientists and ecologists have to offer one another. *Frontiers in Behavioral Neuroscience* 5: 21.
- Clinchy, M., Zanette, L., Charlier, T.D., Newman, A.E.M., Schmidt, K.L., Boonstra, R. and Soma, K.K. 2011 Multiple measures elucidate glucocorticoid responses to environmental variation in predation threat. *Oecologia* 166: 607-614.
- Clinchy, M., Sheriff, M.J. and Zanette, L.Y. 2013 Predator-induced stress and the ecology of fear. *Functional Ecology* 27: 56-65.
- Suraci, J.P., Clinchy, M., Zanette, L.Y., Currie, C.M.A. and Dill, L.M. 2014 Mammalian mesopredators on islands directly impact both terrestrial and marine communities. *Oecologia* 176: 1087-1100.