

Julia Sacher – Female Mental Health – Branco Weiss Fellow since 2012

The Menstrual Rhythm of the Brain

Every year, nearly twice as many women as men develop a depressive illness. Eighty percent of women of reproductive age experience some level of irritability and mood fluctuation shortly before their periods. Some of these women suffer from clinical level premenstrual melancholia that can lead to impaired quality of life, with disruptions in work and relationships. Julia Sacher uses the menstrual cycle as a model to investigate how the female brain responds to subtle hormonal changes. She applies neuroimaging techniques to study changes in neurochemistry and neural activity in the female brain and how they relate to emotional processing and mood. Julia is one of a few dozen outstanding postdoctoral researchers from around the world who have been selected as a Branco Weiss Fellow. Today, she is a faculty member at the International Max Planck Research School on Neuroscience of Communication in Leipzig.

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Pedro Vale – Infection, Ecology and Evolution – Branco Weiss Fellow since 2014

Individual Variation in Infection Tolerance

Infection is a major source of mortality worldwide. This problem remains difficult to solve in part because hosts vary substantially in their individual responses to infection, with important but largely unpredictable consequences for disease spread and evolution. We know comparatively little about the mechanisms of host tolerance of infection and the extent to which they vary in natural populations. Building on the unique strengths of the fruit fly as a model of infection, immunity and behaviour, Pedro Vale addresses questions that are key to our understanding of the causes and consequences of individual variation disease tolerance. Pedro is one of a few dozen outstanding postdoctoral researchers from around the world who have been selected as a Branco Weiss Fellow. Today, he is a Group Leader at the Institute of Evolutionary Biology, Infection and Immunology, at the University of Edinburgh.

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Hannah Mumby – Behavioral Ecology and Conservation Science – Branco Weiss Fellow since 2015

Social Relationships Between Male Elephants

Understanding the behavior of elephants and formulating targeted conservation strategies is of vital importance to protect them, and to reduce tensions between elephant and human societies. As elephants face a rapidly increasing threat from poaching and habitat loss, it is time to focus on the less well-studied sex: males. Hannah Mumby's research unveils patterns of social, genetic and communication networks between male elephants. She identifies the characteristics of males that are most connected within social networks, including their age, tusk size, reproductive success and history of conflict with humans. Hannah is one of a few dozen outstanding postdoctoral researchers from around the world who have been selected as a Branco Weiss Fellow. Today, she is a postdoctoral researcher in the Department of Zoology at University of Cambridge.

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Michael Fabinyi – Anthropology, Political Ecology – Branco Weiss Fellow since 2012

Chinese Seafood Consumption

With regard to marine resources, China is today the largest producer and seafood consumer in the world. Understanding China's rapidly changing role in fisheries trade will thus be crucial for the sustainable and equitable management of global marine resources. Michael Fabinyi's research examines the trends, drivers and effects of Chinese seafood consumption. In particular, he is examining the shift to the consumption of high-value, imported types of seafood. This involves collaborative, interdisciplinary research both in China and in countries where the seafood is sourced. Michael is one of a few dozen outstanding postdoctoral researchers from around the world who have been selected as a Branco Weiss Fellow. Today, he is Senior Research Fellow at the University of Technology Sydney, in Australia.

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Xavier Dumusque – Observational Astrophysics – Branco Weiss Fellow since 2015

Finding Planets Similar to Earth

Earth-sized planets are common in the Milky Way. But a fundamental question of humanity remains unanswered: are there other habitable worlds? Answering this question requires new analysis techniques based on an improved understanding of stars, since the intrinsic variability of these stars can conceal or mimic the presence of exoplanets similar to Earth. Xavier Dumusque's research aims to improve the understanding of how stellar variability influences the detectability and mass measurements of other Earths. To this end, he has initiated the construction of a small telescope that will observe our own sun using the most precise instruments dedicated to the detection of exoplanets. Xavier is one of a few dozen outstanding postdoctoral researchers from around the world who have been selected as a Branco Weiss Fellow. After three years of research at the Harvard-Smithsonian Center for Astrophysics, USA, Xavier is now continuing his project at the observatory of Geneva, Switzerland.

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Daniela Andres – Neuroscience – Branco Weiss Fellow 2011-16

Deciphering the Language of Neurons

Our brain is composed of millions of neurons, highly differentiated cells that specialize in the processing and transmission of information. Each second, a neuron can transmit an average of 300 impulses, which encode information about our environment, inner world and life story. Together, these impulses form a language, a means of communication between different parts of our nervous system and body, and constitute the basis of the calculations performed by our brain, our decision-making and actions. Daniela Andres studies the language that neurons use to mediate the communication between deep brain structures and the motor cortex. She has discovered that neurons can use different information codes simultaneously to transmit different kinds of events. Daniela was one of a few dozen outstanding researchers from around the world who benefited from a five-year Branco Weiss Fellowship. Today, she is a professor of Biomedical Engineering at National University of San Martin, Argentina.

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