

Dear Executive Board members of the Excellence Cluster "*Inflammation at Interfaces*",

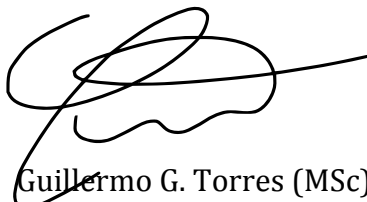
My name is Guillermo Torres and I started my PhD studies at the CAU under the supervision of PD Dr. Friederike Flachsbart in April 2015. My research project is part of the proposal S TP3 "FoxO factors as key regulators of epithelial homeostasis and the host-microbiome crosstalk" that is supported by the Cluster until 31.10.2017. Dr. Javier Buldú, at the Center for Biomedical Engineering of the Technical University of Madrid has invited me for a work visit in the Laboratory of Biomedical Networks from 22. - 31. August 2015 (see attached letter of invitation). The stay in this renowned research group offers me the possibility to learn new network-based methods and thus to analyze the complex data at my disposal (e.g. 16S and metagenome data from human stool samples, genotypes, inflammatory markers) in a more holistic manner than is currently possible.

Many diseases influenced by inflammatory and/or aging processes are caused by a combination of genetic perturbations and exogenic factors interacting in complex systems. In my PhD project I am investigating the host-intestinal microbiome crosstalk taking into consideration also the activity/variability of the longevity gene FOXO 3A, the inflammation status and the age (age range 20 - 103 years) of our 150 study participants. All investigated parameters interact with each other to form a network, which is a clear example of a complex biological system. Consequently, a perturbation in one factor can be propagated through the interaction and may or may not affect other elements in the network.

The academic stay at the Laboratory of Biological Networks would enable me to apply network-based methods in my PhD project. To the best of my knowledge, I cannot learn these methods at any of the institutions of the Excellence Cluster. Hence, not only I but also other Cluster members (PhD students and scientist alike) would greatly benefit from my acquired knowledge and analysis skills, as I am more than happy to pass them on after my return.

I would very much appreciate if the Excellence Cluster "*Inflammation at Interfaces*" could financially contribute to my research stay in Madrid and thus support my PhD project.

Yours sincerely,

A handwritten signature in black ink, consisting of a large, stylized 'G' followed by a horizontal line and a wavy flourish.

Guillermo G. Torres (MSc)
PhD. student