Jupiter Neuroscientist Awarded For Keeping Her Mind On What Matters

Godenschwege was just awarded $447,587 from the National Institute of Neurological Disorders and Stroke, NIH for three years to study the function of L1-type cell adhesion molecules (CAMs) in the fruit fly’s nervous system. CAMs are proteins that link the inside of one cell to the outside of a second cell. They adhere cells together. But some CAMs have additional functions in activating signaling pathways within the cell, resulting in turning other genes on or off. In particular, mutations in genes for human L1-type CAMs underlie problems in both neurological disorders and cancer. Studies gaining insight into the functions of these proteins may lead to novel therapeutic avenues for treating Alzheimer’s disease, spinal cord regeneration and cancer.

Godenschwege studies the fruit fly’s only L1-type CAM using fluorescent imaging that tracks the protein’s location. She actually visualizes the protein moving up and down the axons of a fly’s neuron while *the fly’s nervous system is still alive*. Her innovative techniques have shown that in the *adult* nervous system, surprisingly, the L1-type CAM moves backwards (from a neuron’s synapse back to the cell’s soma or center), suggesting that the CAM has a different and unknown function in the adult brain versus that in the developing fly brain.

Tanja Godenschwege knew since high school that she would study genetics. So, after completing her graduate studies at Universitaet Wuerzburg in the Department of Professor Heisenberg, well known for its research in Drosophila (fruit fly) learning and memory and genes involved in synapse formation, it wasn’t surprising that Godenschwege emerged as a geneticist specializing in neurobiology. She came to the USA to do postdoctoral training at the University of Massachusetts, Amherst. Godenschwege rejected an offer from the University of Miami to pursue an Assistant Professor position at FAU in 2006 due to FAU’s enthusiastic support for young faculty to establish research programs, particularly in neuroscience. She has mentored three Ph.D. students and two M.S. students to successfully finish their degrees and currently has a bustling lab churning out data. She plans to use the newly acquired NIH funds to pay for undergraduate internships, graduate student stipends and a part-time postdoctoral fellow.
On the side, Godenschwege enjoys scuba diving (both privately and as a member of FAU’s scientific diving program assisting marine biology students), cooking Indian food and downhill skiing. Although her family remains in Germany, her parents enjoy vacationing with her in sunny South Florida. Having previous success in obtaining both NIH funding as well as FAU internal grants, when asked what her immediate thoughts were on obtaining her most recent NIH grant, Godenschwege replied, “Now I have time to write my next grant”.