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Biocomplexity Institute,

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Subject: Marco Canepari - Biocomplexity Junior Faculty Position

I met Marco Canepari in 1993 while he was an undergraduate in Physics. I noticed immediately that he was a very bright and motivated student and so invited him to do his Bachelor's dissertation (Italian Laurea) in my lab, under my supervision. During our time working together in the lab, Marco proved to be highly competent and knowledgeable and after some time he became more of a colleague than a student. When I moved to Trieste from Genova in 1996, I met Marco again while he was doing his PhD in electrophysiology here at SISSA with Professor Cherubini. At that time I was very happy to see him again and to have the opportunity to collaborate with him.

Marco Canepari started his research activity by working on experimental techniques for the analysis of neuronal network activity at NTT in Japan, where he worked on multi-electrode array recordings from neuronal cultures. During his PhD thesis at SISSA, under the supervision of Prof. E. Cherubini and Dr. A. Treves, he worked on short-term plasticity in hippocampal synapses. In this period he was also involved in the development of an imaging system for fast ion imaging in collaboration with Dr. F. Mammano and he used this imaging system to investigate calcium signals generated by GABAergic depolarization in hippocampal pyramidal neurons of neonatal rats and by electrical activity in hypoglossal motoneurones.

After completion of his PhD he moved to NIMR with Dr. D. Ogden, where he focused on the slow excitatory postsynaptic current evoked by metabotropic glutamate receptors (mGluR1) at parallel fibre synapses in cerebellar Purkinje neurons in acute brain slices. His work demonstrated that this synaptic signal is mediated by a non-selective cation conductance

(Canepari et al., J.Physiol. 533: 765-72, 2001), regulated by a tyrosine phosphatase (Canepari and Ogden, J. Neurosci. 23: 4066-71, 2003) and permeable to calcium, indicating a potential role for synaptic plasticity (Canepari et al., J.Neurosci. 24: 3563-73, 2004). Marco is also collaborating with Dr. Dejan Zecevic (Yale University) on imaging voltage sensitive dyes in individual Purkinje neurons.

After years of knowing Marco as a student, friend, and colleague, I can confirm that he is an exceptional scientist, extremely competent in different experimental techniques (electrophysiology and optical techniques) with a first class background in physics and mathematics. Besides being a very gifted scientist he is also patient, hardworking, genuinely imaginative. In the lab I noticed that he has great skill in critical analysis, experimentation, and interpretation of the data.

In my opinion Marco Canepari will do extremely well in his scientific career and I expect from him the greatest achievements. As I said he blend the two most important ingredients for a neurobiologist: he is experimentally careful and solid and he is also imaginative and has perspective and new ideas.

In my twenty years of experience in this field, Marco has been probably my best student. He is not only a brilliant scientist, but a brilliant person as well.

Yours Sincerely,

Vincent Torre

Professor and Department Head
Neurobiology Sector