



Institute of Biosciences and BioResources (IBBR)
Consiglio Nazionale delle Ricerche, Naples



DR. ELIA DI SCHIAVI

Elia Di Schiavi earned his PhD in Genetics at the University of Naples "Federico II" in 2004. From 2004 to 2008, he was Post-Doctoral fellow in Dr. Paolo Bazzicalupo's lab (IGB, CNR, Naples) and during this period spent several months in the labs directed by Prof. E. I. Rugarli (TIGEM, Naples) and Prof. L. Tamagnone (IRCCS Candiolo, Turin). From 2008 to 2009 he was hosted at QBI (University of Queensland, Brisbane, Australia) under the supervision of Prof. M. A. Hilliard. In 2008, he was appointed as CNR Staff Researcher at the Institute of Genetics and Biophysics (IGB, CNR, Naples), and in 2010 became Principal Investigator of the IGB *C. elegans* Neurobiology laboratory. Since 2014, he is Principal Investigator of the *C. elegans* Neurobiology laboratory at the Institute of Biosciences and BioResources (IBBR, CNR, Naples).

Starting from his undergraduate thesis, Dr. Di Schiavi has been focused on using the powerful invertebrate *C. elegans* as an animal model to understand genetic diseases. Initially involved on projects on neurodevelopmental diseases, such as Kallmann Syndrome, he lately became interested in the neurodegeneration processes causing spinal muscular atrophy (SMA) and Parkinson disease.

Studying genetic diseases in animal models has been crucial to understand human disease pathogenesis, the function played by mutated genes, and to identify potential therapies. Among the most diffused animal models, invertebrates such as *C. elegans* allowed rapid analyses of the molecular mechanisms leading to diseases and the identification of new potential therapeutic targets in several diseases (e.g., obesity, Huntington disease) (Ashrafi et al., Nature 2003; Parker et al., Nature Genetics 2005). Moreover, *C. elegans* studies led to the discovery of basic processes that unexpectedly became fundamental to set new strategies to cure human diseases (e.g., RNA interference, miRNAs, apoptotic pathways). These discoveries have been acknowledged with Nobel Prizes awarded several times to researchers working on *C. elegans*. The use of *C. elegans* as a model provides: a) a powerful, easy, and rapid system to directly assess the consequences of mutations at the organism level, *in vivo*; b) the unique advantage of visualizing individual cells in living transparent animals; c) more than 70% of disease genes presenting an ortholog. These advantages, together with the small dimensions (1 mm), the high rate of fertility, the complete hermaphroditism allowing an isogenic progeny with up to 300 eggs per animal, and affordable costs, have recently caused an expansion of its use also for studying neurodegenerative diseases. Dr. Di Schiavi will present his very recent results on Spinal Muscular Atrophy (SMA) and Parkinson disease models he developed in *C. elegans* and how he is using them to devise effective drug and genetic screenings in a whole animal.



KNOWLEDGE IS SPEAKING, WISDOM IS LISTENING
Jimi Hendrix