Application for a:	Outgoing Scheme NEWFELPRO Fellowship for experienced researcher
Proposal Acronym:	EACAA
Proposal Title:	Evolution of Albinism in Cave Adapted Animals
Research area(s):	Life sciences LIF
Research sub-disciplines:	Cell differentiation - physiology and dynamics Developmental genetics - embryology in animals
Category of research:	basic
Duration in months:	36
Keywords:	convergent evolution, regressive evolution, albinism, pigmentation, melanin synthesis, catecholamine synthesis, cave animals, transcriptomes
Abstract:	Little is known about the mechanisms underlying the evolution of novel phenotypes and convergence. Albinism, a relatively simple trait and a prime example of convergence, offers an outstanding opportunity to study both of these phenomena. This proposal addresses the evolution of albinism in a series of melanin pigmented species from diverse phyla. For the first time, this proposal will also investigate depigmentation in animals with dark pigments other than melanin: planaria. The combined analysis of loss of melanin and non-melanin pigmentation will provide a broad understanding about the developmental and molecular trajectories underpinning the repeated occurrence of albinism in nature. The forces driving regression of phenotypes have been puzzling scientists since the time of Darwin. My preliminary results suggest that the widespread occurrence of albinism is a result of natural selection acting on the benefits of pigment regression for the survival of animals in dark caves.
Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?	Yes