

Application for a:	Outgoing Scheme NEWFELPRO Fellowship for experienced researcher
Proposal Acronym:	PlantMS
Proposal Title:	Evaluating Metabolic Diversity to Understand Plant Adaptations to a Changing Environment
Research area(s):	Environment and geosciences ENV
Research sub-disciplines:	Genetics, Genomics, Bioinformatics and Systems Biology - Metabolomics Evolutionary, Population and Environmental Biology - Biodiversity- comparative biology - Environmental and marine biology
Category of research:	basic
Duration in months:	36
Keywords:	metabolism, plant metabolomics, mass spectrometry, plant
Abstract:	The unsustainable depletion of our fossil petroleum resources ultimately affects every aspect of humanity. Sustainable solutions to these grave and urgent challenges will be dependent on understanding the fundamental basis for the differential formation of plant life forms. Metabolomics has as one of its purposes to unravel the secrets within genomes, which define the diverse life forms seen today. Yet, what truly constitutes the plant metabolome is enigmatic, even though various technologies have been developed for this purpose. We consider that we can begin to address such limitations by investigating the origins of plant metabolomes, particularly the evolution of specialized tissues and cell types which were essential for the synthesis and storage of diverse metabolites. The proposed activities will address critical knowledge gaps regarding the evolution of vascular plants, but also offer exciting opportunities for education and scientific training of the applicant.
Does this proposal possess any of the sensitive ethical issues detailed in ethical issues table?	No