Acadamh Ríoga na hÉireann
Royal Irish Academy

Royal Irish Academy Grants Report

Title:	Dr
First Name:	Laia
Surname:	Comas Bru
Discipline:	Sciences
Year of Award:	2018
Project Title	First climate model evaluations using the SISAL speleothem database

1. Research background:

I hold a BSc in Marine Sciences and an MSc in Coastal Geosciences and Engineering. But, my doctoral research focused on using speleothems to reconstruct European climate variability during the last 2000 years. After graduation, I started a lectureship position at UCD and, all my research depended on grants like this one, as I had no other source of funding.

In December 2016, I launched the international working group SISAL (Speleothems Isotopes Synthesis and Analyses), which I spearhead with Sandy Harrison's mentorship. The group is aimed at creating a synthesis product of speleothem records to be used for climate model evaluation as well as to

reconstruct past climates. This award served as seed money to be able to work on the first SISAL science paper (led by myself) as well as to secure a postdoctoral position in University of Reading (where I am now based).

2. Please outline the findings of your research and/or milestones achieved (did you achieve the primary objectives - if not, what did you learn from the process)?

The primary objectives of each visit were achieved but, since then, there have been some delays in finalising the paper. However, now that the outline and the figures are almost finalised, I aim to submit the paper within the next 3-4 months. Some of the delays had to do with the tight teaching schedule that I had in between the visits as well as the fact that I was offered a post-doctoral position at Reading (visit 1) short after my visit there that implied finalising my work at UCD to move countries.

This was the first time that I embarked myself in such a data-model comparison and I learned on the difficulties of having temporally and spatially inconsistent data (as that retrieved from speleothems) as well as the broad range of factors that prevent you from doing straight data model comparisons. It is now clear to me

that the interpretation of these palaeo-records is not always straightforward, and requires innovative techniques for data-model comparison, including uncertainty propagation, forward modelling and process diagnosis.