

Editorial

2020 *Quaternary* Young Investigator Award: Announcement and Interview with the Winner

Quaternary Editorial Office

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After an extensive voting period, we are proud to present the winner of the *Quaternary* Young Investigator Award: Dr. Oana Alexandra Dumitru.

Oana Dumitru is a postdoctoral fellow at the Lamont-Doherty Earth Observatory of Columbia University in New York, USA. Her research interests are directed towards understanding past climate and sea-level fluctuations and the forcing mechanisms driving their spatial and temporal evolution. She holds a PhD degree in Geology from the University of South Florida (2019), where she worked on past climate and sea-level reconstruction using cave deposits from Mallorca, Spain. She also holds a PhD degree in Environmental Sciences from Babes-Bolyai University, Romania (2012), where she focused on developing techniques for radiochemical separation and source preparation of radionuclides for alpha spectrometry. She received her BSc (2008) and MSc (2009) degrees in Chemistry and Electrochemistry from the same University in Romania. She worked on the evaluation of indoor radon concentration in buildings and caves, and also on the determination of sediment accumulation rates in lakes of the Danube Delta (Romania). Dr. Dumitru has published 13 Scopus-indexed documents (h-index = 6).

On behalf of the *Quaternary* Editorial Office staff and award evaluation committee, we congratulate Dr. Oana Alexandra Dumitru on her excellent performance and wish her all the best for her future career.



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Interview with the Winner

1. Could You Briefly Introduce Yourself to the Readers?

I am Oana Dumitru and my journey started some thirty-odd years ago in a small village in rural Transylvania. I began as a chemist and spent several years conducting my undergraduate and graduate studies in Cluj-Napoca, Romania. Over the years, my curiosity and desire to grow as a scientist led me to obtain my second PhD degree at the University of South Florida. There, I learned how to apply the tools and principles of chemistry to understand and explain the mechanisms behind the Earth's climate system. I am currently a postdoctoral fellow at the Lamont-Doherty Earth Observatory of Columbia University, a highly professional institution of which I am proud to be a part. In my spare time, I enjoy hiking, caving, and I am addicted to solving jigsaw puzzles; last year, I successfully assembled nine puzzles all between 1000 and 2000 pieces.

It is with great honor that I accept the *Quaternary* 2020 Young Investigator Award and I would like to express my gratitude to MDPI and the evaluation committee for selecting me.

2. What Are You Currently Researching and Why Did You Choose This Research Field?

Currently, I am working on reconstructing sea levels during the last interglacial period. My goal is to develop an accurate and precisely resolved sea-level record tied to high-resolution chronologies using coral reefs from the Bahamas. In order to reach a more comprehensive understanding of the current sea-level rise, as well as to produce more reliable predictions of how much and how quickly ice sheets will melt in the future, we draw on evidence from past periods when the Earth's climate was warmer than it is today. Knowledge of sea-level change during the last interglacial period may provide unique insights into the patterns of near-future sea-level rise. While constraints are steadily improving, there remain significant uncertainties regarding the magnitude and rate of sea-level change. My work contributes to reducing these uncertainties, which, in turn, can improve our predictions of the responses of ice sheets to elevated temperatures and CO₂ concentrations.

While working as a chemist on a radon survey in the caves of Mallorca, Spain, I joined Dr. Onac and his collaborators in collecting speleothems used for paleoclimate and sea-level reconstruction. This is when I first learned about phreatic overgrowths on speleothems and how they are related to sea levels. I was fascinated by this research project and it seemed a great opportunity to me to expand my knowledge and acquire hands-on skills in the use of cutting-edge technology. This influenced my decision to pursue a career change to geology, which brought me here today.

3. Which Research Topics Do You Think Will Be of Particular Interest to the Research Community in the Coming Years?

Two of the main questions which the research community is addressing currently refer to the extent to which the temperature and global mean sea level will rise in the future, and to the societal and economic impact of these changes. To answer these questions, we need a holistic assessment that examines the various processes operating in the geosphere and, in particular, investigates the link between the Earth's surface and its deep interior processes. Thus, I believe that, in the coming years, we will see a surge in interdisciplinary approaches in which geologists, geochemists, geophysicists, climate scientists, glaciologists, and oceanographers will work closely with computational modelers to tackle these questions.

4. Have You Ever Encountered Any Difficulties When You Conduct Research? How Did You Overcome Them?

I think that it is safe to assume that everyone encounters difficulties of one kind or another in their research. For me, maybe the most challenging part was the transition between research fields, when I started my PhD in Geology. My background in chemistry was beneficial for understanding the geochemical and geochronological part of my research. However, I found it difficult to answer research questions in paleoclimatology since it is such a complex field that requires knowledge of the Earth's atmosphere, hydrosphere,

cryosphere, and land surface processes. The first geological field trips that I attended were particularly overwhelming since I was neither familiar with the geological terms nor with the field instruments. To overcome this challenge, I took extra geology classes and participated in many field trips. Only through perseverance and with the endless help by my PhD advisor and collaborators, who were always available for guidance, did I find my way in this complex but exciting discipline of science.

5. Which Qualities Do You Think Young Scientists Need?

I believe that curiosity, perseverance, good communication skills, and, especially, an open mind are among the fundamental qualities that a young scientist needs. The process of the scientific method involves asking questions, exploring observations, and drawing conclusions; thus, the interest and motivation to pursue scientific research comes naturally if one is being inquisitive. Perseverance is also essential. The early stages of a scientific career can come with a number of hardships and setbacks and achieving success can seem, at times, daunting. Young researchers must recognize that the risk of failure is an inherent part of being a scientist and that, probably, most successful scientists have experienced similar difficulties in their careers. Good communication skills are also critical, since working as part of an interdisciplinary team, collaborating with colleagues around the world, and sharing their research with the public are very often part of the job. Finally, even though they are starting from an initial hypothesis in mind or expecting certain results, a scientist must always interpret the outcome of the work with an open mind, without letting any predetermined theory or hypothesis bias their interpretation.

6. Quaternary Is an Open Access Journal. How Do You Think Open Access Impacts the Authors?

In my opinion, open access journals offer tremendous benefits. They make science more transparent and accessible and thus expedite scientific progress. Offering rapid and unrestricted access to state-of-the-art research also contributes to a more equitable system of knowledge.