

Peter M. Schneider ISFG Fellowship 2022 - Research Visit to the Section of Forensic Genetics, Department of Immunology, Genetics, and Pathology, Genomics and Neurobiology, Uppsala University

Applicant:

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The purpose of this research visit was to advance a project aimed at learning and applying human DNA recovery technologies for challenging samples in human identification (HID) casework. This need emerged following the conflicts along the borders of Armenia and Artsakh with Azerbaijan. Prior to this visit, I had no experience working with challenging samples, such as ancient sediments or historical specimens. Furthermore, I lacked practical experience in integrating methods for analyzing degraded biological samples into forensic casework. The Peter M. Schneider Fellowship provided me with the opportunity to spend two weeks (12-28 June, 2024) under the expert guidance of Prof. Marie Allen. During this period, I focused on determining optimal methodological steps for working with DNA extractions in a clean-room facility, performing real-time PCR quantification of extracts, mtDNA PCR amplification, and Sanger sequencing of ancient bone and challenging samples brought from Armenia. I am pleased to report that all planned activities were successfully completed during my stay. One of the key outcomes of this visit was the ability to evaluate the obtained mtDNA profiles using the EMPOP database.

The visit also proved highly effective in overcoming technical hurdles that arose during the project. Addressing these challenges in person with Prof. Allen and her team significantly enhanced the project's progress. The experience of working directly with degraded samples and the associated advanced methodologies has greatly expanded my expertise and confidence in handling such complex specimens.

In addition, this visit offered a unique opportunity to gain valuable insights into structural frameworks, standards of practice, workflows, the integration of innovative techniques into routine applications, and updates on emerging areas of development.

Furthermore, discussions during this visit led to the initiation of a new collaborative project with Dr. Marie Allen. This collaboration focuses on adapting advanced forensic methodologies for Armenian casework practices and developing a specialized forensic genetics module for medical and law students in Armenia.

I would like to emphasize the effectiveness of this visit not only in achieving the immediate project goals but also in fostering long-term collaboration and knowledge exchange. The hands-on experience and the opportunity to interact with experts in a highly specialized field were instrumental in enhancing the scientific and practical dimensions of our work.

I extend my sincere gratitude to the ISFG Fellowship Review Board for awarding me this unique opportunity and to my hosts at Uppsala University.

Sincerely,  
Anna Hovhannisyan