

## Peter M. Schneider ISFG Fellowship 2023

**Applicant:**

Laura Carrara  
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**Short report:** Research visit to the Center for Human Identification, University of North Texas Science Center (Fort Worth, United States of America)

Lausanne, 11<sup>th</sup> September 2023

Dear ISFG Fellowship Review Board,

I would like to take this opportunity to thank the ISFG Fellowship Review Board for awarding me the Peter M. Schneider Fellowship. Because of their generous support I was able to join Dr. Michael Coble's research group as a visiting scholar at the Center for Human Identification (CHI). In my time with Dr. Coble's group I received training on analytical and computational solutions to working with DIP-STRs as analyzed by massive parallel sequencing (MPS). DIP-STR markers are very sensitive to minor contributor(s) in imbalanced DNA mixtures. These markers are employed in my Ph.D. project, which involves the development of noninvasive pre-natal paternity tests.

During my visit to the CHI, I worked under the supervision of Dr. August Woerner on the analysis of MPS data generated in the frame of my doctoral project. Throughout my stay, I had the chance to deepen my knowledge on MPS sequencing techniques and I received hands-on training on bioinformatics tools, computational techniques, including gaining practical experience on working with large biological datasets. For instance, I was guided towards the development of an appropriate bioinformatics pipeline for the evaluation of noise and artefacts in my datasets. This would allow me to set analytical thresholds suitable to my experimental design. We also worked on the optimization of STRait Razor for the analysis of DIP-STR markers. The main outcome of the collaboration was a bioinformatic workflow customized towards my research project's objectives.

The short-term visit to CHI, supported by the ISFG funding, has proven invaluable for enhancing my bioinformatics skills and knowledge on MPS techniques. This experience significantly contributed to the advancement of my doctoral research.

Finally, I would also like to thank the hosting institution for all the guidance and teaching provided all along my visit.

Kind regards,

Laura Carrara