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## FORENSIC APPEARANCE PREDICTION FROM DNA: A JOURNEY THROUGH 10 YEARS OF SCIENTIFIC CONTRIBUTIONS

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With great honour and appreciation I received The ISFG Biennial Scientific Prize 2017 for outstanding contributions regarding my "work related to forensic DNA phenotyping and haploid markers". On the occasion of the ISFG Scientific Prize lecture, I will take the audience on a 10 years journey of the scientific contributions my department, together with our collaborators, made to the field of forensic DNA phenotyping, particularly regarding the genetic basis and genetic prediction of human appearance for forensic applications, which begun in 2009. Within the last decade, we substantially increased the genetic knowledge of human appearance by finding new genes for eye colour, hair colour, skin colour, skin tanning, eyebrow colour, eyebrow thickness, body height, head hair shape, sagging eyelids, facial morphology, facial pigmented spots, facial wrinkles, and facial age. When the unveiled genetic appearance information was large enough, we developed and validated statistical models for predicting eye colour, hair colour, skin colour, eyebrow colour, tall stature, head hair shape, and male pattern baldness from genotype data. When the accuracies achieved by the appearance prediction models were high enough, we developed and forensically validated lab tools and made online available statistical tools for predicting eye colour, hair colour, and skin colour from DNA, which we (and others) applied in forensic casework (and anthropological studies). I am grateful to the colleagues from my department, from other departments within Erasmus MC, and the many international collaborators without whom these scientific achievements would not have been possible. To allow focus, my additionally awarded work on haploid markers will not be covered by this ISFG Scientific Prize lecture.

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