



**Application number/Title:** 19127 - Assortative mating in the UK population

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**Lead Collaborators:**

- 1) Dr St Pourcain
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**Collaborating Institutions and Addresses:**

- 1) Max Planck Institute for Psycholinguistics
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**Keywords provided by the Applicant PI to describe the research project:**

Genetic assortative mating, height, education

**Application Lay Summary:**

**1a:** This project looks at whether people are genetically similar to their partners. This will help us understand two things.

First, how inequality is transmitted across generations. If advantaged people form households with others like them, they can transmit extra advantage to their children. Some of this advantage may be genetic - for example, height is partly genetic, and tall people do well in the labour market (Case et al. 2006).

Second, how 'well-mixed' the population is genetically. This is important for researchers estimating the heritability of health conditions: statistical models of heritability depend on a well-mixed population.

**1b:** Our research will:

(i) Improve illness diagnosis and treatment by allowing more accurate estimates of heritability which take account of population structure. Non-random mate choice influences the genetic make-up of a population, and understanding these fundamental processes would aid in improving quantitative genetics and molecular genetics research.

(ii) Improve the promotion of health throughout society by helping us to understand the transmission of social inequality. Inequality has risen in the UK and elsewhere in recent decades, and may be a major cause of poor health outcomes (Marmot et al. 1991; Wilkinson et al. 2011).

**1c:** We will look at how cohabiting couples correlate on variables including education level, height and income. We will test for differences in correlation across age groups.

Then, using genomic data, we will measure couples' genetic similarity. Again, we will compare these measures of similarity across age groups.

We will also look specifically at whether couples have similar genes linked to height and education - two traits where "like marries like".

**1d:** All participants for whom genetic data exists for both partners cohabiting in a household.