Surname frequency – supervisor Keith Briggs

Surnames propagate rather like genes, so some ideas from mathematical biology will be appropriate to this project. In England, surnames typically started about 1300, but quite rapidly settled on fixed forms in which the meanings were forgotten (so that, for example, in 1400, a *John Smith* might have been a baker, and *Roger Dawson*'s father was Edmund). In the county of Suffolk, there are lists of people surviving from 1327, 1524, 1568 and 1674 which are believed to be quite complete (they are tax lists). Data from censuses such as 1881 may also become available. These will provide sufficient data for a project with the aim of explaining the observed distribution of frequency of Suffolk surnames at each date, and perhaps more importantly, estimates of parameters such as average population growth rates over the periods between the tax lists. The latter would be novel and of interest to historians. Other things we would like to know would be the proportion of monogenetic surnames (i.e. those thought to have had a single progenitor). Some ideas to get started:

1. Mathematical model could be a standard Galton-Watson birth-death process or similar
2. Initial assumptions for other parameters will have to be made, like distribution of family size at different periods, rate of illegitimacy, rate of creation of new surnames in the later medieval period (e.g. by immigration) etc.
3. The general idea is to adjust these parameters to best fit the data at the four dates.