

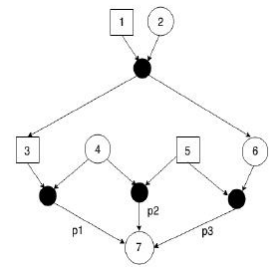
# Bruce Smith

## Statistics

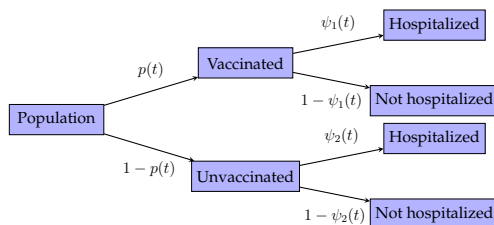


Dr. Smith has research interests in time series, and applications. He is also member of an interdisciplinary team working on inference for quantitative genetic traits.

**Modeling genetic traits with partially known pedigree:** Variation of a biological trait such as weight can typically be apportioned into genetic, environmental, and random components. The pedigree, which specifies relationships among individuals, is used by breeders to select pairs for crossing, leading to optimization of the genetic component of variation. Dr. Smith is part of a group working on examples where crosses are not tightly controlled, such as in a fish hatchery, and each offspring has a number of possible parental pairs. This entails simultaneous estimation of genetic parameters and the pedigree, the latter using marker genotypes.



**Estimation of vaccine efficacy:** Case-control designs are often used to model the association between vaccination and disease incidence. Dr. Smith is a member of a group studying influenza vaccine efficacy, the relative rate of hospitalization for influenza like illness in vaccinated vs unvaccinated individuals. Their focus is on the test negative case-control design, in which cases are those with laboratory confirmed influenza, while controls have other influenza like illnesses, but are influenza negative.



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