Disease Mapping: Project

deadline: June 10

In this project, we will investigate the spatial distribution of cervix cancer among females in Antwerp. The following data is given:

- The observed number of cases per age group (5 age-years per group) and per municipality
- The population counts per age group (5 age-years per group) and per municipality
- Shape-file of Antwerp
- Map of Antwerp to be imported in WinBugs (antwerp.txt)
- Covariates at the municipality level
- Centroids of the municipalites
- Adjacency matrix (ordering of municipalities is the ordering of NIS numbers)

The questions of interest are:

1. What are the expected values corresponding to an indirect standardization with the whole study region as standard population?
2. Do some of the municipalities have a SIR (significantly) larger than 1?
3. What is the most appropriate model to describe the spatial trend in the data?
4. Do the priors have a large impact on the estimated relative risks? (Check this for the best fitting model.)
5. Do the covariates have an effect on the relative risk of cervix cancer in a municipality?
6. Are there clusters of increased or decreased risk?