Small obstacles with Neumann boundary condition:
a variant of the Crushed Ice Problem.

The classical "Crushed Ice Problem" deals with the cooling effect of a large number of very small ice cubes (or spheres). Here the fact that the obstacles are coolers is expressed by Dirichlet boundary conditions. In acoustics and other physical theories small obstacles rather act by reflection (or scattering) and Neumann boundary conditions may be appropriate.

In our talk, we give an introduction to some ideas and problems connected with Neumann boundary conditions. We will mainly focus on estimates for the lowest eigenvalue (the ground state energy) in the case of a single obstacle.