## Dr Ian Short, The Open University

## Title: Integer tilings and Farey complexes

## Abstract:

In the 1970s, Coxeter studied arrays of integers that form friezes in the plane. He and Conway discovered an elegant way of classifying these friezes using triangulated polygons. Recently, research in friezes has revived, in part because of connections with cluster algebras and with integer tilings. Here we explain how much of the theory of integer tilings can be interpreted using the geometry and arithmetic of an infinite simplicial complex embedded in the hyperbolic plane called the Farey complex. We also describe how other types of integer tilings (such as integer tilings modulo n) can be interpreted using variants of the Farey complex obtained from quotients of the hyperbolic plane.