Title: Galois representations with open image

Abstract: Suppose that p is a prime and that $n \geq 1$. Let $G_{\mathbf{Q}} = Gal(\overline{\mathbf{Q}}/\mathbf{Q})$ be the absolute Galois group of $\mathbf{Q}$. Let $\mathbf{Z}_p$ denote the ring of p-adic integers. Our purpose in this talk is to describe a way of constructing continuous representations

$$\rho : G_{\mathbf{Q}} \longrightarrow GL_n(\mathbf{Z}_p)$$

whose image is open. This means that the image of ρ has finite index in $GL_n(\mathbf{Z}_p)$. We can do this for many pairs (n, p). One typical result is the following:

Proposition: *Suppose that p is a regular prime and that $p \geq 4\left[\frac{n}{2}\right] + 1$. Then there exists a continuous representation ρ as above with open image.*