Date: November 2, 1995
Time: 4:00
Speaker: Angus Macintyre (Oxford)
Title: Approximating Measures in Real and p-adic Model Theory
Abstract: Theorems of the following type will be proved:

Suppose M is an o-minimal structure on $\mathbf{R}$, with all definable sets Lebesgue measurable. Let $\Phi(v_1, \ldots, v_n, y_1, \ldots, y_m)$ be a formula, and let $\epsilon > 0$ be a real number. There is a formula $\Phi^*_\epsilon(v, y_1, \ldots, y_m)$ such that for all $\alpha, \beta_1, \ldots, \beta_m$ in $\mathbf{R}$, if $M \models \Phi^*_\epsilon(\alpha, \bar{\beta})$ then the Lebesque measure of $\{\bar{w} : \Phi(\bar{w}, \bar{\beta})\}$ is within ϵ of α; and if the measure is within $\epsilon/4$ of α, then $M =\models \Phi^*_\epsilon(\alpha, \bar{\beta})$.