For the seminar on Monday, September 26, and the working seminar on Wednesday, September 28.

Speaker: Al Taylor
Title: Extremal plurisubharmonic functions for linear growth.

Abstract: We will discuss properties of the extremal function $\Lambda_E(z)$, associated to plurisubharmonic functions of linear growth, i.e. the upper envelope of all psh functions $u$ that are bounded above by zero on the set $E$ and satisfy $u(z) \leq |z| + o(|z|)$. Questions about this function arise naturally in trying to classify the algebraic varieties with sufficiently many real points that they satisfy the strong radial Phragmén-Lindelöf condition. This extremal function is also an analogue of the Siciak-Zaharuta extremal psh function $L_E$ of logarithmic growth. However, we will show that it fails to have most of the properties that make $L_E$ such a useful function in pluripotential theory.

In Monday’s seminar talk, we will give an overview of these results, but very few proofs. In the working seminar on Wednesday, we will present enough of the proofs to explain all the main techniques used in the work. All of the material is taken from the 1998 Ph.D. thesis of David Bainbridge.