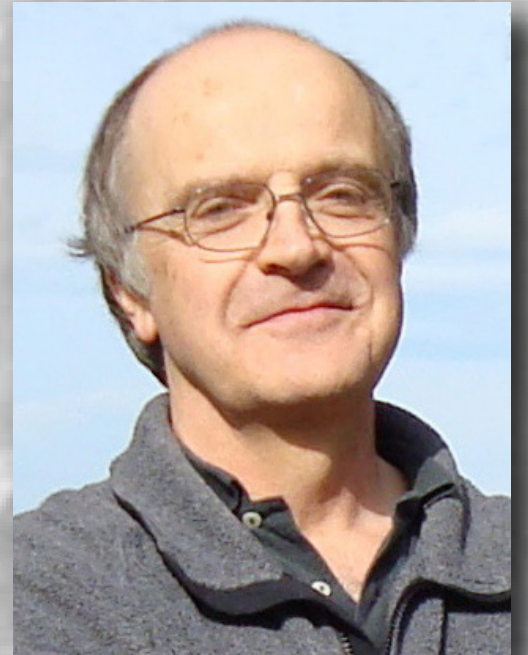


Karl Friedrich Bonhoeffer Lecture

Thursday, 8th October 2015 - 5 pm

Manfred Eigen Hall,
Max Planck Institute
for Biophysical Chemistry

Am Faßberg 11, 37077 Göttingen



Nick Proudfoot

Sir William Dunn School of Pathology
University of Oxford (Great Britain)

Defining transcription units across the human genome

The dramatic achievement of sequencing the whole human genome has been tempered by the subsequent realisation that the human transcriptome is far more complex than initially anticipated; far from any clear understanding of how and why it is made. My lab has focused on the basic mechanism of transcriptional termination and associated RNA 3'-end processing by the major RNA polymerase II (Pol II) that is responsible for the synthesis of all pre-messenger RNA and most non-coding RNAs. We have uncovered a surprising diversity of termination mechanisms using gene specific analyses. We are now applying new native elongating transcription (NET) sequencing strategies to define all Pol II transcription units (especially mammalian NET-seq). Using this technology we are uncovering unanticipated mechanistic cross-talk between the basic transcription process and associated pre-mRNA and long non-coding RNA processing.