1107-92-440 **Simon Tavaré*** (director@cruk.cam.ac.uk), Cancer Research UK Cambridge Institute, Li Ka Shing Centre, Robinson Way, Cambridge, CB2 0RE, United Kingdom. *Cancer by the numbers.*

The mathematical sciences have contributed substantially to our understanding of the way cancer evolves. Cancer is a disease of the genome, so the focus of this lecture will be on mutations in DNA and what they tell us about tumor evolution. We will discuss "tumor heterogeneity," the DNA sequence variation observed between tumors and within them, and what this tells us about progression, treatment, and relapse. Along the way we will illustrate some of the underlying mathematics that have helped in this endeavor. (Received January 20, 2015)