S2 Fig. Early cancer growth measurement distribution. The figure is an extension of S1 Fig and shows the measurement distribution  $p(y|\theta, t)$  of the early cancer growth model at t = 0, t = 0.3 and t = 0.6 for three different sets of parameter values. The measurement distribution corresponding to the data-generating parameters,  $\theta = (\mu_{y_0}, \sigma_{y_0}, \mu_{\lambda}, \sigma_{\lambda}, \mu_{\sigma}) = (10, 1, 2, 0.5, 0.8)$ , is shown in black. A measurement distribution that overestimates the IIV contributions to the measurement distribution that overestimates the IIV contributions to the measurement distribution that overestimates the noise contributions to the measurement variability,  $\theta = (10, 0.7, 2, 0.5, 1.127)$ , is illustrated in red.

