through the pulse generation setup and then focused through the trapped atoms in the MOT onto the detector.

To observe precursors, we need a fast and sensitive detector. We use the fastest detector available to us, which is the Hamamatsu H10721-20 photosensor module. This detector is pretty fast with a rise time of 0.57 ns. The signal from the detector is observed with a Tektronix DPO 4104 Digital Phosphor Oscilloscope, which has a bandwidth of 1 GHz and a sampling rate of 5 Gs/s.

**Figure 2.9:** A schematic of the complete experimental setup. The trapping setup is explained in Fig. 2.5. The probe beam, a homemade tunable cavity diode laser, is attenuated by neutral density filters and coupled into an optical fiber. After passing through the pulse generation setup described in Fig. 2.8, the probe beam is focused through the trapped rubidium onto the photomultiplier tube detector (PMT). An oscilloscope is used to measure the signal from the detector and is triggered by the pulse generator.