



**Fig. S1** Visualization of the performance of our proposed method in response to white noise increase. We use the source and target data from Liver1 in PBSM-inSilicoData [6]. Row # 1 compares the noise-free mesh (white) and target point cloud with noise (red). Row # 2 shows the registration results. Row # 3 illustrates the predicted matches and the initial configuration.

The results of this stability experiment suggest that an increase in anisotropic noise magnitude makes it slightly more difficult for our method to identify correct matches, which may, in turn, lead to inaccurate rigid alignment. Nevertheless, the noise magnitude must be substantial in order to compromise the robustness of the method.