Fig. 2 – supplementary movie, file "Movie 1.MOV"
Reaction wavefront theory can produce a sequential pattern without defects in the presence of noise. Simulations of (A) reaction wavefront theory Eqs. (15) and (16), and (B) Eqs. (13) and (14) lacking a reaction wavefront. Activator (green line) and inhibitor (red line) dimensionless concentrations (left axis scale) together with reaction wavefront γ(x,t) (purple line and shade, right axis scale) at different times as indicated. (C) The bottom panel shows the inhibitor sinks profile (light blue line). Time is expressed in frames and 1 frame ≈ 0.0004 time units. Parameters as in Figure 2 of the main text.

Fig. 3 – supplementary movie, file "Movie 2.MOV"
A perturbation in the posterior region of the notochord vanishes in a reaction wavefront scenario. Simulations of (A) reaction wavefront theory Eqs. (15) and (16), and (B) Eqs. (13) and (14) with $\sigma = 0$, without a reaction wavefront. A perturbation is introduced in the activator at frame t = 75. Color coding and plot layout as in Fig. 3. Initial conditions are (A) random with mean $\mu = 0.01$ and standard deviation $\sigma_0 = 0.05$ and (B) vanishing except for the anterior perturbation. Time is expressed in frames and 1 frame ≈ 0.0004 time units. Other parameters as in Table I of the main text.

Fig. 5 – supplementary movie, file "Movie 3.MOV"
Sequential pattern formation is lost when the wavefront shape is too gradual. (A) Simulation of reaction wavefront theory Eqs. (15) and (16) with wavefront steepness $\beta = 0.5$. Activator (green line) and inhibitor (red line) dimensionless concentrations (left axis scale) together with reaction wavefront γ(x,t) (purple line and shade, right axis scale) at different times as indicated. (B) The bottom panel shows the inhibitor sinks profile (light blue line). Time is expressed in frames and 1 frame ≈ 0.0004 time units. Parameters as in Figure 5 of the main text.

Fig. 6A – supplementary movie, file "Movie 4.MOV"
Unmatched sinks are the predominant type of defect for sufficiently small sink profile wavelengths. (A) Simulation of reaction wavefront theory Eqs. (15) and (16) for a sink profile of wavelength $\lambda/\lambda_0 = 0.86$. Here $\lambda_0 = 0.398$ is the wavelength of the unforced pattern. Activator (green line) and inhibitor (red line) dimensionless concentrations (left axis scale) together with reaction wavefront γ(x,t) (purple line and shade, right axis scale) at different times as indicated. (B) The bottom panel shows the inhibitor sinks profile (light blue line). Time is expressed in frames and 1 frame ≈ 0.0004 time units. Parameters as in Figure 6 of the main text.

Fig. 6B – supplementary movie, file "Movie 5.MOV"
Misplaced peaks are the predominant type of defect for sufficiently large sink profile wavelengths. (A) Simulation of reaction wavefront theory Eqs. (15) and (16) for a sink profile of wavelength $\lambda/\lambda_0 = 2.086$. Here $\lambda_0 = 0.398$ is the wavelength of the unforced pattern. Activator (green line) and inhibitor (red line) dimensionless concentrations (left axis scale) together with reaction wavefront γ(x,t) (purple line and shade, right axis scale) at different times as indicated. (B) The bottom panel shows the inhibitor sinks profile (light blue line). Time is expressed in frames and 1 frame ≈ 0.0004 time units. Parameters as in Figure 6 of the main text.