My first latex file

This is a latex file.

$$S\left(\theta\right) = \frac{1}{1 + e^{-\theta}}$$

$$\dot{x}_i = -x_i + S\left(\rho_i + \sum_{j=1}^N c_{ij}x_j\right)$$
 where $x_i \in \mathbb{R}$ and $i = i, \dots, N$

I am working on a model of interactions of basal ganglia and thalamus that can help interpret Josh Burk's behavioral experiments (e.g., stop signal reaction time).