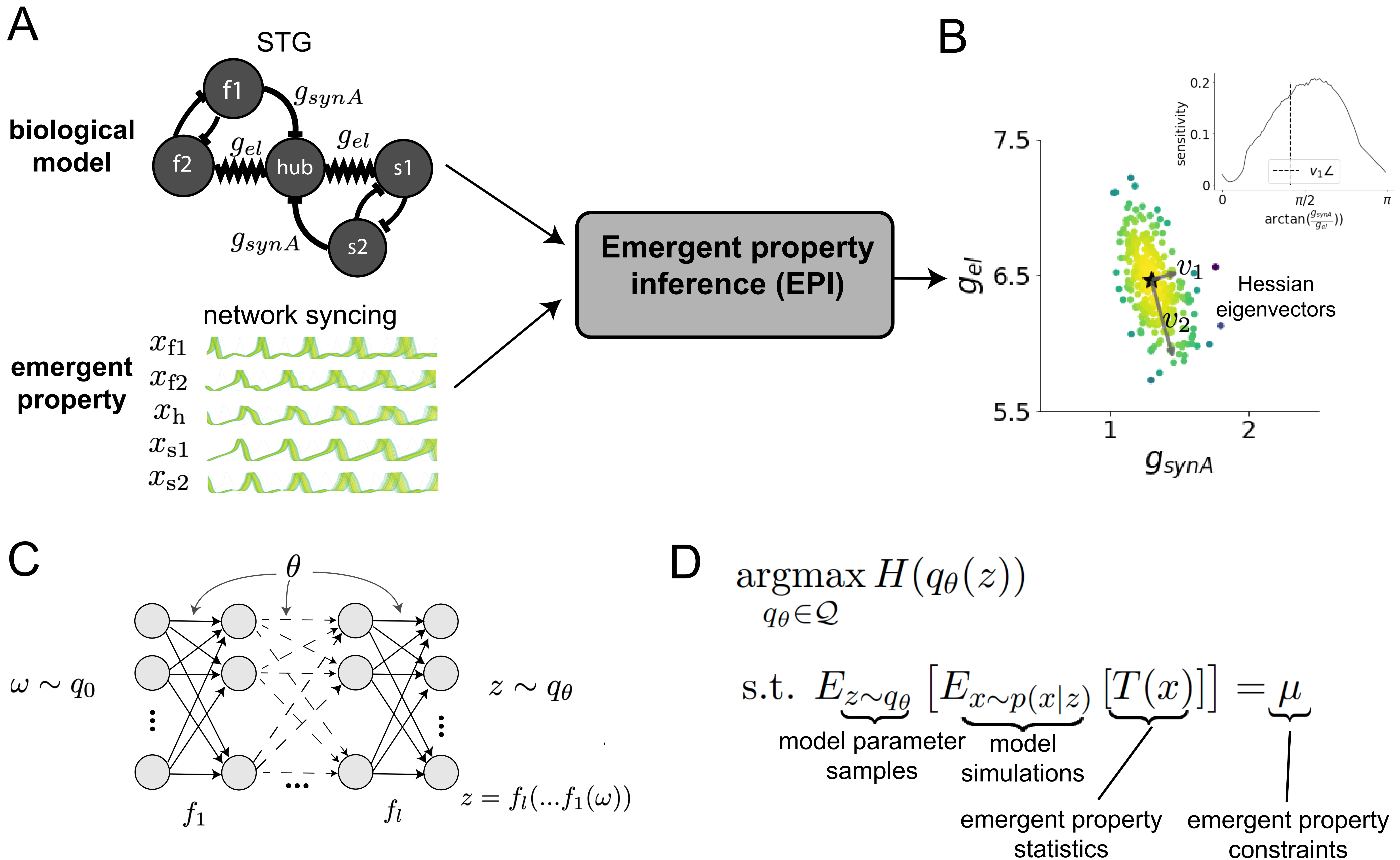

A
STG
biological model
f1
f2
hub
s1
s2
g_{synA}
g_{el}
g_{el}
g_{synA}
emergent property
network syncing
x_{f1}
x_{f2}
x_{h}
x_{s1}
x_{s2}
Emergent property inference (EPI)
B
g_{el}
7.5
6.5
5.5
1
2
g_{synA}
v_1
v_2
Hessian eigenvectors
sensitivity
0.2
0.1
0
0
π/2
π
$\arctan(\frac{g_{synA}}{g_{el}})$
$v_1\angle$
C
θ
$\omega \sim q_0$
$z \sim q_\theta$
f_1
f_l
$z = f_l(\ldots f_1(\omega))$
D
$\underset{q_\theta \in Q}{\mathrm{argmax}}\, H(q_\theta(z))$
$\text{s.t. } \underbrace{E_{z \sim q_\theta}}\left[\underbrace{E_{x \sim p(x|z)}}\left[\underbrace{T(x)}\right]\right] = \underbrace{\mu}$
model parameter samples
model simulations
emergent property statistics
emergent property constraints