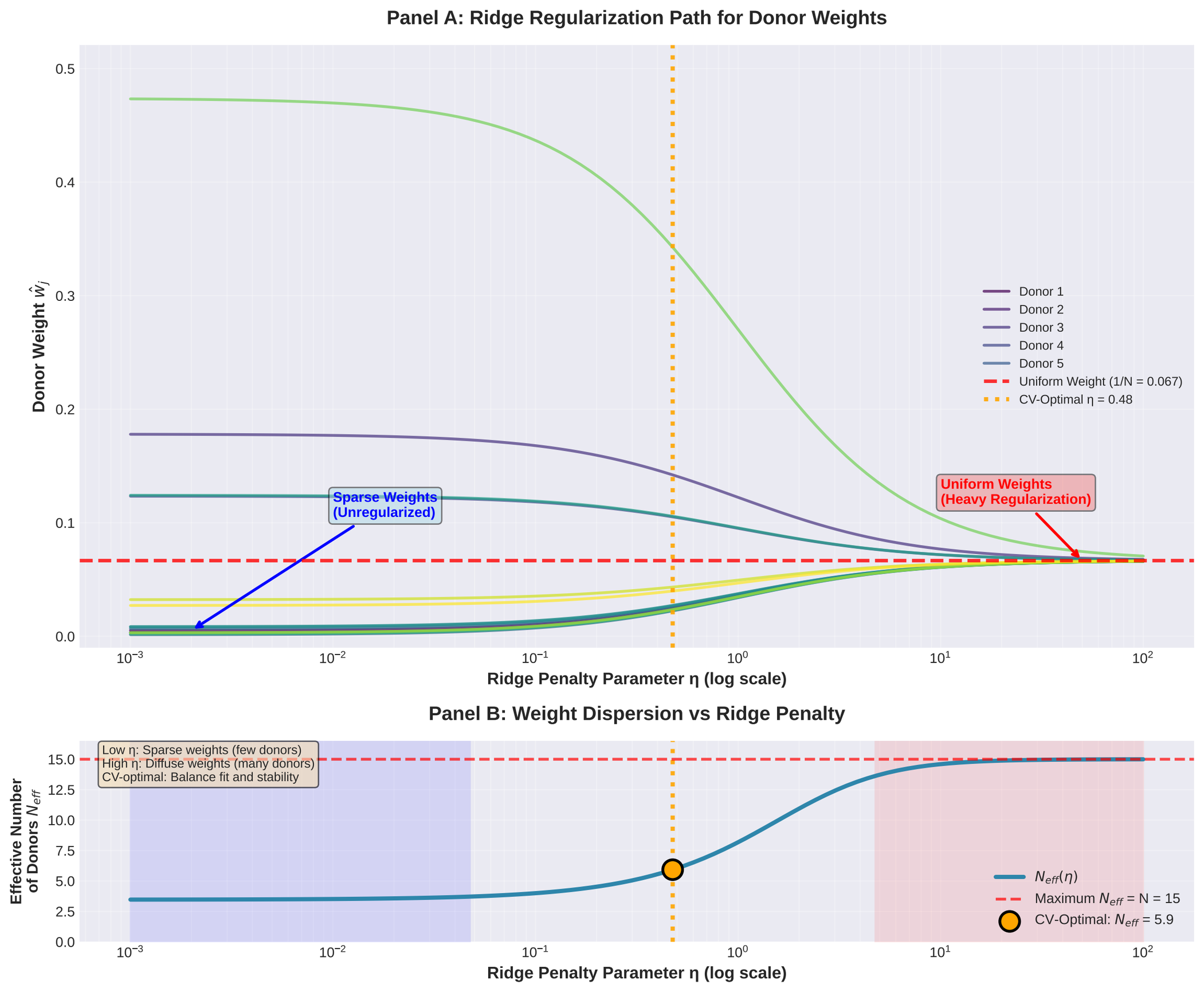
Panel A: Ridge Regularization Path for Donor Weights
Donor Weight $\hat{w}_j$
0.5
0.4
0.3
0.2
0.1
0.0
Donor 1
Donor 2
Donor 3
Donor 4
Donor 5
Uniform Weight (1/N = 0.067)
CV-Optimal η = 0.48
Sparse Weights
(Unregularized)
Uniform Weights
(Heavy Regularization)
10^{-3}
10^{-2}
10^{-1}
10^{0}
10^{1}
10^{2}
Ridge Penalty Parameter η (log scale)
Panel B: Weight Dispersion vs Ridge Penalty
Low η: Sparse weights (few donors)
High η: Diffuse weights (many donors)
CV-optimal: Balance fit and stability
Effective Number
of Donors N_{eff}
15.0
12.5
10.0
7.5
5.0
2.5
0.0
$N_{eff}(\eta)$
Maximum N_{eff} = N = 15
CV-Optimal: N_{eff} = 5.9
10^{-3}
10^{-2}
10^{-1}
10^{0}
10^{1}
10^{2}
Ridge Penalty Parameter η (log scale)