

# Supplementary Materials: Variable Selection Inference for BART

Justin Bleich, Adam Kapelner, Edward I. George and Shane T. Jensen  
Department of Statistics  
The Wharton School, University of Pennsylvania

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## 1 RMSE Results for Gene Regulatory Network Data

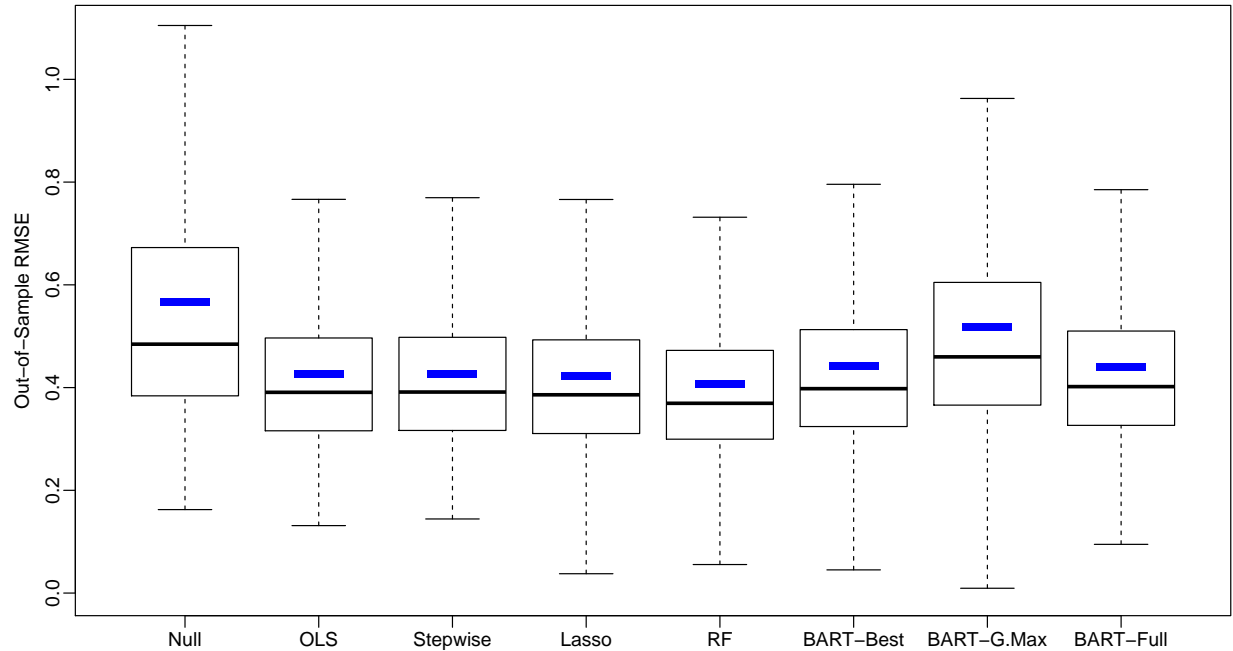


Figure 1: Distributions of RMSEs for predicting the hold-out set of data from each method across the 6026 genes. Blue bars represent the average RMSE across the 6026 genes for each method. Points beyond the whiskers are omitted.

## 2 Linear Model Simulation Results

Method	Precision	Recall	F1
BART_best	1.00	1	1.00
BART_pointwise	0.82	1	0.90
BART_simul_max	1.00	1	1.00
BART_simul_se	1.00	1	1.00
BART_best_good_prior	1.00	1	1.00
BART_pointwise_good_prior	0.88	1	0.94
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	1.00	1	1.00
BART_best_bad_prior	0.86	1	0.92
BART_pointwise_bad_prior	0.60	1	0.75
BART_simul_max_bad_prior	0.96	1	0.98
BART_simul_se_bad_prior	0.92	1	0.96
stepwise_backward	0.29	1	0.45
stepwise_forward	0.05	1	0.10
lasso	1.00	1	1.00
RF_CV	0.50	1	0.67
RF_point	0.40	1	0.57
RF_simul	0.64	1	0.78

Table 1: Results for  $p = 20$ ,  $p_0 = 1$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.94	1.00	0.97
BART_pointwise	0.80	1.00	0.89
BART_simul_max	0.92	0.96	0.94
BART_simul_se	0.92	0.96	0.94
BART_best_good_prior	0.92	1.00	0.96
BART_pointwise_good_prior	0.79	1.00	0.88
BART_simul_max_good_prior	0.98	1.00	0.99
BART_simul_se_good_prior	0.98	1.00	0.99
BART_best_bad_prior	0.65	0.96	0.78
BART_pointwise_bad_prior	0.44	1.00	0.61
BART_simul_max_bad_prior	0.74	0.88	0.80
BART_simul_se_bad_prior	0.70	0.88	0.78
stepwise_backward	0.25	1.00	0.40
stepwise_forward	0.05	1.00	0.10
lasso	0.84	0.84	0.84
RF_CV	0.38	1.00	0.55
RF_point	0.36	1.00	0.53
RF_simul	0.63	1.00	0.77

Table 2: Results for  $p = 20$ ,  $p_0 = 1$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.21	0.28	0.24
BART_pointwise	0.59	0.80	0.68
BART_simul_max	0.16	0.16	0.16
BART_simul_se	0.12	0.12	0.12
BART_best_good_prior	0.94	0.96	0.95
BART_pointwise_good_prior	0.85	1.00	0.92
BART_simul_max_good_prior	0.98	1.00	0.99
BART_simul_se_good_prior	0.94	0.96	0.95
BART_best_bad_prior	0.19	0.40	0.25
BART_pointwise_bad_prior	0.28	0.60	0.38
BART_simul_max_bad_prior	0.10	0.12	0.11
BART_simul_se_bad_prior	0.10	0.12	0.11
stepwise_backward	0.31	1.00	0.47
stepwise_forward	0.05	1.00	0.10
lasso	0.16	0.16	0.16
RF_CV	0.29	0.80	0.43
RF_point	0.23	0.92	0.37
RF_simul	0.47	0.84	0.60

Table 3: Results for  $p = 20$ ,  $p_0 = 1$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	1.00	1	1.00
BART_pointwise	0.82	1	0.90
BART_simul_max	1.00	1	1.00
BART_simul_se	1.00	1	1.00
BART_best_good_prior	1.00	1	1.00
BART_pointwise_good_prior	0.88	1	0.94
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	1.00	1	1.00
BART_best_bad_prior	0.86	1	0.92
BART_pointwise_bad_prior	0.60	1	0.75
BART_simul_max_bad_prior	0.96	1	0.98
BART_simul_se_bad_prior	0.92	1	0.96
stepwise_backward	0.29	1	0.45
stepwise_forward	0.05	1	0.10
lasso	1.00	1	1.00
RF_CV	0.50	1	0.67
RF_point	0.40	1	0.57
RF_simul	0.64	1	0.78

Table 4: Results for  $p = 20$ ,  $p_0 = 1$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.94	1.00	0.97
BART_pointwise	0.80	1.00	0.89
BART_simul_max	0.92	0.96	0.94
BART_simul_se	0.92	0.96	0.94
BART_best_good_prior	0.92	1.00	0.96
BART_pointwise_good_prior	0.79	1.00	0.88
BART_simul_max_good_prior	0.98	1.00	0.99
BART_simul_se_good_prior	0.98	1.00	0.99
BART_best_bad_prior	0.65	0.96	0.78
BART_pointwise_bad_prior	0.44	1.00	0.61
BART_simul_max_bad_prior	0.74	0.88	0.80
BART_simul_se_bad_prior	0.70	0.88	0.78
stepwise_backward	0.25	1.00	0.40
stepwise_forward	0.05	1.00	0.10
lasso	0.84	0.84	0.84
RF_CV	0.38	1.00	0.55
RF_point	0.36	1.00	0.53
RF_simul	0.63	1.00	0.77

Table 5: Results for  $p = 20$ ,  $p_0 = 1$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.21	0.28	0.24
BART_pointwise	0.59	0.80	0.68
BART_simul_max	0.16	0.16	0.16
BART_simul_se	0.12	0.12	0.12
BART_best_good_prior	0.94	0.96	0.95
BART_pointwise_good_prior	0.85	1.00	0.92
BART_simul_max_good_prior	0.98	1.00	0.99
BART_simul_se_good_prior	0.94	0.96	0.95
BART_best_bad_prior	0.19	0.40	0.25
BART_pointwise_bad_prior	0.28	0.60	0.38
BART_simul_max_bad_prior	0.10	0.12	0.11
BART_simul_se_bad_prior	0.10	0.12	0.11
stepwise_backward	0.31	1.00	0.47
stepwise_forward	0.05	1.00	0.10
lasso	0.16	0.16	0.16
RF_CV	0.29	0.80	0.43
RF_point	0.23	0.92	0.37
RF_simul	0.47	0.84	0.60

Table 6: Results for  $p = 20$ ,  $p_0 = 1$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.99	1	0.99
BART_pointwise	0.97	1	0.99
BART_simul_max	1.00	1	1.00
BART_simul_se	1.00	1	1.00
BART_best_good_prior	1.00	1	1.00
BART_pointwise_good_prior	0.97	1	0.99
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	1.00	1	1.00
BART_best_bad_prior	0.97	1	0.98
BART_pointwise_bad_prior	0.83	1	0.91
BART_simul_max_bad_prior	1.00	1	1.00
BART_simul_se_bad_prior	1.00	1	1.00
stepwise_backward	0.45	1	0.62
stepwise_forward	0.10	1	0.18
lasso	0.92	1	0.96
RF_CV	0.79	1	0.88
RF_point	0.50	1	0.67
RF_simul	0.81	1	0.89

Table 7: Results for  $p = 20$ ,  $p_0 = 2$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.86	0.98	0.92
BART_pointwise	0.87	1.00	0.93
BART_simul_max	0.94	0.84	0.89
BART_simul_se	0.98	0.86	0.92
BART_best_good_prior	1.00	1.00	1.00
BART_pointwise_good_prior	0.94	1.00	0.97
BART_simul_max_good_prior	1.00	1.00	1.00
BART_simul_se_good_prior	1.00	1.00	1.00
BART_best_bad_prior	0.63	1.00	0.77
BART_pointwise_bad_prior	0.61	0.98	0.75
BART_simul_max_bad_prior	0.77	0.76	0.76
BART_simul_se_bad_prior	0.77	0.78	0.78
stepwise_backward	0.45	1.00	0.62
stepwise_forward	0.10	1.00	0.18
lasso	0.99	1.00	0.99
RF_CV	0.63	1.00	0.77
RF_point	0.46	1.00	0.63
RF_simul	0.76	1.00	0.87

Table 8: Results for  $p = 20$ ,  $p_0 = 2$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.31	0.28	0.30
BART_pointwise	0.53	0.56	0.55
BART_simul_max	0.14	0.08	0.10
BART_simul_se	0.18	0.10	0.13
BART_best_good_prior	0.91	0.92	0.91
BART_pointwise_good_prior	0.85	1.00	0.92
BART_simul_max_good_prior	0.95	0.92	0.93
BART_simul_se_good_prior	0.95	0.90	0.92
BART_best_bad_prior	0.13	0.24	0.17
BART_pointwise_bad_prior	0.31	0.48	0.37
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.10	0.06	0.07
stepwise_backward	0.45	1.00	0.62
stepwise_forward	0.10	1.00	0.18
lasso	0.24	0.16	0.19
RF_CV	0.44	0.80	0.57
RF_point	0.42	0.84	0.56
RF_simul	0.67	0.76	0.71

Table 9: Results for  $p = 20$ ,  $p_0 = 2$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	1.00	1.00	1.00
BART_pointwise	1.00	1.00	1.00
BART_simul_max	1.00	0.99	0.99
BART_simul_se	1.00	1.00	1.00
BART_best_good_prior	1.00	1.00	1.00
BART_pointwise_good_prior	1.00	1.00	1.00
BART_simul_max_good_prior	1.00	1.00	1.00
BART_simul_se_good_prior	1.00	1.00	1.00
BART_best_bad_prior	0.99	1.00	1.00
BART_pointwise_bad_prior	0.98	1.00	0.99
BART_simul_max_bad_prior	1.00	1.00	1.00
BART_simul_se_bad_prior	1.00	0.99	0.99
stepwise_backward	0.64	1.00	0.78
stepwise_forward	0.20	1.00	0.33
lasso	0.93	1.00	0.96
RF_CV	0.94	1.00	0.97
RF_point	0.75	1.00	0.85
RF_simul	0.94	1.00	0.97

Table 10: Results for  $p = 20$ ,  $p_0 = 4$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.97	0.97	0.97
BART_pointwise	0.97	0.98	0.98
BART_simul_max	0.96	0.58	0.72
BART_simul_se	0.96	0.61	0.75
BART_best_good_prior	0.99	1.00	1.00
BART_pointwise_good_prior	0.99	1.00	1.00
BART_simul_max_good_prior	1.00	0.98	0.99
BART_simul_se_good_prior	1.00	0.97	0.98
BART_best_bad_prior	0.84	0.94	0.89
BART_pointwise_bad_prior	0.84	0.93	0.88
BART_simul_max_bad_prior	0.76	0.36	0.49
BART_simul_se_bad_prior	0.92	0.47	0.62
stepwise_backward	0.62	1.00	0.76
stepwise_forward	0.20	1.00	0.33
lasso	0.91	1.00	0.95
RF_CV	0.83	1.00	0.91
RF_point	0.69	1.00	0.82
RF_simul	0.89	1.00	0.94

Table 11: Results for  $p = 20$ ,  $p_0 = 4$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.61	0.47	0.53
BART_pointwise	0.91	0.69	0.79
BART_simul_max	0.20	0.06	0.09
BART_simul_se	0.32	0.10	0.15
BART_best_good_prior	0.98	0.98	0.98
BART_pointwise_good_prior	1.00	0.99	0.99
BART_simul_max_good_prior	0.92	0.65	0.76
BART_simul_se_good_prior	1.00	0.71	0.83
BART_best_bad_prior	0.22	0.22	0.22
BART_pointwise_bad_prior	0.38	0.37	0.38
BART_simul_max_bad_prior	0.04	0.01	0.02
BART_simul_se_bad_prior	0.08	0.02	0.03
stepwise_backward	0.68	1.00	0.81
stepwise_forward	0.20	1.00	0.33
lasso	0.78	0.68	0.73
RF_CV	0.74	0.89	0.81
RF_point	0.67	0.93	0.78
RF_simul	0.86	0.82	0.84

Table 12: Results for  $p = 20$ ,  $p_0 = 4$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.98	1	0.99
BART_pointwise	0.27	1	0.42
BART_simul_max	0.98	1	0.99
BART_simul_se	0.96	1	0.98
BART_best_good_prior	1.00	1	1.00
BART_pointwise_good_prior	0.23	1	0.38
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	0.98	1	0.99
BART_best_bad_prior	0.92	1	0.96
BART_pointwise_bad_prior	0.25	1	0.40
BART_simul_max_bad_prior	0.96	1	0.98
BART_simul_se_bad_prior	0.92	1	0.96
stepwise_backward	0.04	1	0.08
stepwise_forward	0.01	1	0.02
lasso	1.00	1	1.00
RF_CV	0.30	1	0.46
RF_point	0.12	1	0.22
RF_simul	0.59	1	0.74

Table 13: Results for  $p = 100$ ,  $p_0 = 1$ ,  $\sigma^2 = 1$ .



Method	Precision	Recall	F1
BART_best	0.86	0.88	0.87
BART_pointwise	0.22	1.00	0.37
BART_simul_max	0.90	0.92	0.91
BART_simul_se	0.86	0.92	0.89
BART_best_good_prior	0.94	1.00	0.97
BART_pointwise_good_prior	0.21	1.00	0.35
BART_simul_max_good_prior	0.98	1.00	0.99
BART_simul_se_good_prior	0.92	1.00	0.96
BART_best_bad_prior	0.90	0.96	0.93
BART_pointwise_bad_prior	0.23	1.00	0.38
BART_simul_max_bad_prior	0.90	0.92	0.91
BART_simul_se_bad_prior	0.86	0.88	0.87
stepwise_backward	0.04	1.00	0.08
stepwise_forward	0.01	1.00	0.02
lasso	0.98	1.00	0.99
RF_CV	0.19	1.00	0.32
RF_point	0.14	1.00	0.24
RF_simul	0.66	1.00	0.79

Table 14: Results for  $p = 100$ ,  $p_0 = 1$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.09	0.12	0.10
BART_pointwise	0.18	0.84	0.29
BART_simul_max	0.12	0.12	0.12
BART_simul_se	0.12	0.12	0.12
BART_best_good_prior	0.52	0.52	0.52
BART_pointwise_good_prior	0.24	0.92	0.39
BART_simul_max_good_prior	0.36	0.36	0.36
BART_simul_se_good_prior	0.54	0.56	0.55
BART_best_bad_prior	0.08	0.08	0.08
BART_pointwise_bad_prior	0.17	0.84	0.28
BART_simul_max_bad_prior	0.04	0.04	0.04
BART_simul_se_bad_prior	0.04	0.04	0.04
stepwise_backward	0.04	0.96	0.09
stepwise_forward	0.01	1.00	0.02
lasso	0.12	0.16	0.14
RF_CV	0.13	0.64	0.22
RF_point	0.13	0.76	0.22
RF_simul	0.44	0.60	0.51

Table 15: Results for  $p = 100$ ,  $p_0 = 1$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.98	1	0.99
BART_pointwise	0.91	1	0.95
BART_simul_max	1.00	1	1.00
BART_simul_se	1.00	1	1.00
BART_best_good_prior	0.99	1	1.00
BART_pointwise_good_prior	0.90	1	0.95
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	1.00	1	1.00
BART_best_bad_prior	1.00	1	1.00
BART_pointwise_bad_prior	0.89	1	0.94
BART_simul_max_bad_prior	1.00	1	1.00
BART_simul_se_bad_prior	1.00	1	1.00
stepwise_backward	0.18	1	0.31
stepwise_forward	0.05	1	0.10
lasso	0.89	1	0.94
RF_CV	0.96	1	0.98
RF_point	0.46	1	0.63
RF_simul	0.96	1	0.98

Table 16: Results for  $p = 100$ ,  $p_0 = 5$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.77	0.99	0.87
BART_pointwise	0.70	1.00	0.82
BART_simul_max	1.00	0.77	0.87
BART_simul_se	1.00	0.86	0.92
BART_best_good_prior	0.97	0.98	0.97
BART_pointwise_good_prior	0.73	1.00	0.84
BART_simul_max_good_prior	1.00	0.94	0.97
BART_simul_se_good_prior	0.99	0.97	0.98
BART_best_bad_prior	0.75	0.98	0.85
BART_pointwise_bad_prior	0.69	1.00	0.82
BART_simul_max_bad_prior	1.00	0.78	0.88
BART_simul_se_bad_prior	1.00	0.89	0.94
stepwise_backward	0.19	1.00	0.31
stepwise_forward	0.05	1.00	0.10
lasso	0.87	1.00	0.93
RF_CV	0.77	0.98	0.86
RF_point	0.42	1.00	0.60
RF_simul	0.91	0.98	0.94

Table 17: Results for  $p = 100$ ,  $p_0 = 5$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.54	0.39	0.45
BART_pointwise	0.58	0.79	0.67
BART_simul_max	0.20	0.05	0.08
BART_simul_se	0.52	0.16	0.24
BART_best_good_prior	0.69	0.65	0.67
BART_pointwise_good_prior	0.62	0.95	0.75
BART_simul_max_good_prior	0.78	0.34	0.47
BART_simul_se_good_prior	0.98	0.48	0.64
BART_best_bad_prior	0.48	0.46	0.47
BART_pointwise_bad_prior	0.48	0.75	0.58
BART_simul_max_bad_prior	0.20	0.06	0.09
BART_simul_se_bad_prior	0.53	0.18	0.26
stepwise_backward	0.16	0.97	0.27
stepwise_forward	0.05	1.00	0.10
lasso	0.62	0.54	0.58
RF_CV	0.41	0.75	0.53
RF_point	0.35	0.72	0.47
RF_simul	0.74	0.50	0.60

Table 18: Results for  $p = 100$ ,  $p_0 = 5$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.99	1.00	0.99
BART_pointwise	0.98	1.00	0.99
BART_simul_max	1.00	0.93	0.96
BART_simul_se	1.00	0.96	0.98
BART_best_good_prior	1.00	1.00	1.00
BART_pointwise_good_prior	0.99	1.00	1.00
BART_simul_max_good_prior	1.00	0.99	0.99
BART_simul_se_good_prior	1.00	0.99	0.99
BART_best_bad_prior	0.96	1.00	0.98
BART_pointwise_bad_prior	0.98	1.00	0.99
BART_simul_max_bad_prior	1.00	0.91	0.95
BART_simul_se_bad_prior	1.00	0.91	0.95
stepwise_backward	0.32	1.00	0.48
stepwise_forward	0.10	1.00	0.18
lasso	0.62	1.00	0.77
RF_CV	0.95	0.96	0.95
RF_point	0.62	0.99	0.76
RF_simul	0.98	0.93	0.95

Table 19: Results for  $p = 100$ ,  $p_0 = 10$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.88	1.00	0.93
BART_pointwise	0.91	0.99	0.94
BART_simul_max	0.96	0.38	0.55
BART_simul_se	1.00	0.54	0.70
BART_best_good_prior	0.92	1.00	0.96
BART_pointwise_good_prior	0.90	1.00	0.94
BART_simul_max_good_prior	1.00	0.66	0.80
BART_simul_se_good_prior	0.99	0.78	0.88
BART_best_bad_prior	0.86	0.99	0.92
BART_pointwise_bad_prior	0.86	0.98	0.92
BART_simul_max_bad_prior	0.88	0.28	0.42
BART_simul_se_bad_prior	0.99	0.50	0.67
stepwise_backward	0.31	1.00	0.47
stepwise_forward	0.10	1.00	0.18
lasso	0.66	1.00	0.79
RF_CV	0.71	0.89	0.79
RF_point	0.63	0.92	0.74
RF_simul	0.95	0.79	0.86

Table 20: Results for  $p = 100$ ,  $p_0 = 10$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.60	0.49	0.54
BART_pointwise	0.77	0.69	0.73
BART_simul_max	0.28	0.03	0.06
BART_simul_se	0.71	0.12	0.20
BART_best_good_prior	0.81	0.82	0.82
BART_pointwise_good_prior	0.86	0.88	0.87
BART_simul_max_good_prior	0.60	0.09	0.16
BART_simul_se_good_prior	0.95	0.27	0.42
BART_best_bad_prior	0.48	0.41	0.44
BART_pointwise_bad_prior	0.73	0.70	0.72
BART_simul_max_bad_prior	0.06	0.01	0.01
BART_simul_se_bad_prior	0.47	0.06	0.11
stepwise_backward	0.29	0.96	0.44
stepwise_forward	0.10	1.00	0.18
lasso	0.74	0.76	0.75
RF_CV	0.50	0.63	0.56
RF_point	0.50	0.61	0.55
RF_simul	0.85	0.35	0.50

Table 21: Results for  $p = 100$ ,  $p_0 = 10$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.99	0.96	0.98
BART_pointwise	0.99	0.95	0.97
BART_simul_max	0.72	0.06	0.12
BART_simul_se	0.96	0.16	0.27
BART_best_good_prior	1.00	0.99	0.99
BART_pointwise_good_prior	1.00	0.99	0.99
BART_simul_max_good_prior	0.88	0.10	0.19
BART_simul_se_good_prior	1.00	0.25	0.39
BART_best_bad_prior	0.99	0.95	0.97
BART_pointwise_bad_prior	0.99	0.94	0.96
BART_simul_max_bad_prior	0.56	0.04	0.07
BART_simul_se_bad_prior	0.96	0.13	0.23
stepwise_backward	0.50	1.00	0.67
stepwise_forward	0.20	1.00	0.33
lasso	0.61	1.00	0.76
RF_CV	0.75	0.81	0.78
RF_point	0.76	0.81	0.79
RF_simul	0.97	0.53	0.68

Table 22: Results for  $p = 100$ ,  $p_0 = 20$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.98	0.83	0.90
BART_pointwise	0.97	0.87	0.92
BART_simul_max	0.44	0.02	0.05
BART_simul_se	0.96	0.12	0.22
BART_best_good_prior	0.99	0.94	0.97
BART_pointwise_good_prior	0.99	0.91	0.95
BART_simul_max_good_prior	0.84	0.09	0.17
BART_simul_se_good_prior	1.00	0.19	0.32
BART_best_bad_prior	0.96	0.81	0.88
BART_pointwise_bad_prior	0.96	0.81	0.88
BART_simul_max_bad_prior	0.24	0.01	0.03
BART_simul_se_bad_prior	0.84	0.09	0.17
stepwise_backward	0.49	1.00	0.66
stepwise_forward	0.20	1.00	0.33
lasso	0.60	1.00	0.75
RF_CV	0.76	0.72	0.74
RF_point	0.70	0.71	0.70
RF_simul	0.96	0.45	0.61

Table 23: Results for  $p = 100$ ,  $p_0 = 20$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.79	0.44	0.57
BART_pointwise	0.87	0.50	0.64
BART_simul_max	0.24	0.01	0.03
BART_simul_se	0.52	0.05	0.08
BART_best_good_prior	0.94	0.67	0.78
BART_pointwise_good_prior	0.93	0.67	0.78
BART_simul_max_good_prior	0.48	0.04	0.07
BART_simul_se_good_prior	0.84	0.11	0.20
BART_best_bad_prior	0.56	0.33	0.41
BART_pointwise_bad_prior	0.81	0.46	0.59
BART_simul_max_bad_prior	0.12	0.01	0.01
BART_simul_se_bad_prior	0.34	0.02	0.03
stepwise_backward	0.47	0.95	0.63
stepwise_forward	0.20	1.00	0.33
lasso	0.71	0.86	0.78
RF_CV	0.62	0.49	0.55
RF_point	0.63	0.48	0.54
RF_simul	0.91	0.23	0.36

Table 24: Results for  $p = 100$ ,  $p_0 = 20$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.99	1	0.99
BART_pointwise	0.21	1	0.35
BART_simul_max	1.00	1	1.00
BART_simul_se	0.92	1	0.96
BART_best_good_prior	0.99	1	0.99
BART_pointwise_good_prior	0.29	1	0.45
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	0.91	1	0.95
BART_best_bad_prior	0.99	1	0.99
BART_pointwise_bad_prior	0.23	1	0.38
BART_simul_max_bad_prior	1.00	1	1.00
BART_simul_se_bad_prior	0.99	1	0.99
stepwise_backward	0.02	1	0.03
stepwise_forward	0.01	1	0.02
lasso	0.88	1	0.94
RF_CV	0.95	1	0.97
RF_point	0.15	1	0.26
RF_simul	0.87	1	0.93

Table 25: Results for  $p = 200$ ,  $p_0 = 2$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.94	0.96	0.95
BART_pointwise	0.21	1.00	0.35
BART_simul_max	1.00	0.88	0.94
BART_simul_se	0.89	0.92	0.91
BART_best_good_prior	0.98	0.96	0.97
BART_pointwise_good_prior	0.22	1.00	0.36
BART_simul_max_good_prior	1.00	0.98	0.99
BART_simul_se_good_prior	0.89	0.94	0.91
BART_best_bad_prior	0.93	0.96	0.95
BART_pointwise_bad_prior	0.21	1.00	0.34
BART_simul_max_bad_prior	0.96	0.84	0.90
BART_simul_se_bad_prior	0.91	0.88	0.90
stepwise_backward	0.02	0.98	0.03
stepwise_forward	0.01	1.00	0.02
lasso	0.88	1.00	0.94
RF_CV	0.38	1.00	0.55
RF_point	0.14	1.00	0.25
RF_simul	0.83	1.00	0.91

Table 26: Results for  $p = 200$ ,  $p_0 = 2$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.21	0.16	0.18
BART_pointwise	0.16	0.78	0.26
BART_simul_max	0.20	0.12	0.15
BART_simul_se	0.28	0.26	0.27
BART_best_good_prior	0.34	0.26	0.29
BART_pointwise_good_prior	0.20	0.94	0.33
BART_simul_max_good_prior	0.48	0.30	0.37
BART_simul_se_good_prior	0.58	0.44	0.50
BART_best_bad_prior	0.18	0.12	0.14
BART_pointwise_bad_prior	0.17	0.82	0.28
BART_simul_max_bad_prior	0.08	0.04	0.05
BART_simul_se_bad_prior	0.32	0.22	0.26
stepwise_backward	0.01	0.84	0.03
stepwise_forward	0.01	1.00	0.02
lasso	0.14	0.14	0.14
RF_CV	0.13	0.66	0.22
RF_point	0.10	0.66	0.17
RF_simul	0.56	0.42	0.48

Table 27: Results for  $p = 200$ ,  $p_0 = 2$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.85	1.00	0.92
BART_pointwise	0.82	1.00	0.90
BART_simul_max	1.00	0.91	0.95
BART_simul_se	1.00	0.92	0.96
BART_best_good_prior	0.91	1.00	0.95
BART_pointwise_good_prior	0.88	1.00	0.93
BART_simul_max_good_prior	1.00	0.98	0.99
BART_simul_se_good_prior	1.00	0.97	0.98
BART_best_bad_prior	0.86	1.00	0.92
BART_pointwise_bad_prior	0.84	1.00	0.91
BART_simul_max_bad_prior	1.00	0.93	0.96
BART_simul_se_bad_prior	1.00	0.97	0.98
stepwise_backward	0.08	1.00	0.16
stepwise_forward	0.05	1.00	0.10
lasso	0.61	1.00	0.76
RF_CV	0.90	0.89	0.90
RF_point	0.44	0.98	0.61
RF_simul	0.99	0.88	0.93

Table 28: Results for  $p = 200$ ,  $p_0 = 10$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.70	0.99	0.82
BART_pointwise	0.71	1.00	0.83
BART_simul_max	0.96	0.32	0.48
BART_simul_se	1.00	0.54	0.70
BART_best_good_prior	0.75	0.99	0.85
BART_pointwise_good_prior	0.76	1.00	0.87
BART_simul_max_good_prior	1.00	0.62	0.76
BART_simul_se_good_prior	0.99	0.74	0.85
BART_best_bad_prior	0.70	0.99	0.82
BART_pointwise_bad_prior	0.71	1.00	0.83
BART_simul_max_bad_prior	1.00	0.31	0.47
BART_simul_se_bad_prior	1.00	0.62	0.76
stepwise_backward	0.08	0.99	0.15
stepwise_forward	0.05	1.00	0.10
lasso	0.63	1.00	0.77
RF_CV	0.55	0.86	0.67
RF_point	0.46	0.91	0.61
RF_simul	0.94	0.66	0.78

Table 29: Results for  $p = 200$ ,  $p_0 = 10$ ,  $\sigma^2 = 5$ .



Method	Precision	Recall	F1
BART_best	0.40	0.26	0.32
BART_pointwise	0.51	0.68	0.58
BART_simul_max	0.08	0.01	0.01
BART_simul_se	0.72	0.15	0.25
BART_best_good_prior	0.61	0.75	0.67
BART_pointwise_good_prior	0.59	0.85	0.70
BART_simul_max_good_prior	0.60	0.10	0.17
BART_simul_se_good_prior	0.87	0.27	0.41
BART_best_bad_prior	0.30	0.30	0.30
BART_pointwise_bad_prior	0.46	0.66	0.54
BART_simul_max_bad_prior	0.16	0.02	0.03
BART_simul_se_bad_prior	0.81	0.16	0.27
stepwise_backward	0.08	0.89	0.14
stepwise_forward	0.05	1.00	0.10
lasso	0.51	0.69	0.59
RF_CV	0.33	0.61	0.43
RF_point	0.30	0.50	0.38
RF_simul	0.76	0.26	0.39

Table 30: Results for  $p = 200$ ,  $p_0 = 10$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.94	0.98	0.96
BART_pointwise	0.93	0.95	0.94
BART_simul_max	0.88	0.08	0.14
BART_simul_se	1.00	0.32	0.48
BART_best_good_prior	0.96	0.98	0.97
BART_pointwise_good_prior	0.96	0.99	0.97
BART_simul_max_good_prior	0.96	0.18	0.30
BART_simul_se_good_prior	1.00	0.43	0.61
BART_best_bad_prior	0.91	0.95	0.93
BART_pointwise_bad_prior	0.92	0.96	0.94
BART_simul_max_bad_prior	0.68	0.06	0.11
BART_simul_se_bad_prior	1.00	0.31	0.48
stepwise_backward	0.16	1.00	0.27
stepwise_forward	0.10	1.00	0.18
lasso	0.55	1.00	0.71
RF_CV	0.59	0.70	0.64
RF_point	0.57	0.77	0.65
RF_simul	0.98	0.41	0.57

Table 31: Results for  $p = 200$ ,  $p_0 = 20$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.87	0.88	0.87
BART_pointwise	0.87	0.88	0.88
BART_simul_max	0.60	0.04	0.07
BART_simul_se	0.94	0.19	0.32
BART_best_good_prior	0.92	0.96	0.94
BART_pointwise_good_prior	0.91	0.95	0.93
BART_simul_max_good_prior	0.84	0.08	0.15
BART_simul_se_good_prior	1.00	0.34	0.50
BART_best_bad_prior	0.82	0.86	0.84
BART_pointwise_bad_prior	0.85	0.86	0.86
BART_simul_max_bad_prior	0.36	0.03	0.06
BART_simul_se_bad_prior	0.92	0.19	0.31
stepwise_backward	0.16	1.00	0.28
stepwise_forward	0.10	1.00	0.18
lasso	0.56	1.00	0.72
RF_CV	0.58	0.61	0.59
RF_point	0.54	0.62	0.58
RF_simul	0.98	0.32	0.49

Table 32: Results for  $p = 200$ ,  $p_0 = 20$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.56	0.40	0.46
BART_pointwise	0.70	0.55	0.62
BART_simul_max	0.04	0.00	0.00
BART_simul_se	0.81	0.07	0.14
BART_best_good_prior	0.76	0.74	0.75
BART_pointwise_good_prior	0.80	0.74	0.77
BART_simul_max_good_prior	0.44	0.04	0.07
BART_simul_se_good_prior	0.95	0.18	0.30
BART_best_bad_prior	0.53	0.42	0.47
BART_pointwise_bad_prior	0.64	0.54	0.59
BART_simul_max_bad_prior	0.08	0.00	0.01
BART_simul_se_bad_prior	0.83	0.10	0.17
stepwise_backward	0.15	0.88	0.25
stepwise_forward	0.10	1.00	0.18
lasso	0.65	0.78	0.71
RF_CV	0.45	0.43	0.44
RF_point	0.45	0.44	0.44
RF_simul	0.82	0.16	0.27

Table 33: Results for  $p = 200$ ,  $p_0 = 20$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.91	0.53	0.67
BART_pointwise	0.88	0.52	0.65
BART_simul_max	0.00	0.00	
BART_simul_se	0.91	0.04	0.09
BART_best_good_prior	0.95	0.66	0.78
BART_pointwise_good_prior	0.97	0.65	0.78
BART_simul_max_good_prior	0.16	0.00	0.01
BART_simul_se_good_prior	0.96	0.09	0.16
BART_best_bad_prior	0.82	0.46	0.59
BART_pointwise_bad_prior	0.85	0.46	0.60
BART_simul_max_bad_prior	0.08	0.00	0.00
BART_simul_se_bad_prior	0.80	0.05	0.09
stepwise_backward	0.29	1.00	0.45
stepwise_forward	0.20	1.00	0.33
lasso	0.54	1.00	0.70
RF_CV	0.64	0.41	0.50
RF_point	0.63	0.40	0.49
RF_simul	0.97	0.13	0.23

Table 34: Results for  $p = 200$ ,  $p_0 = 40$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.82	0.44	0.57
BART_pointwise	0.86	0.47	0.61
BART_simul_max	0.08	0.00	0.00
BART_simul_se	0.84	0.05	0.09
BART_best_good_prior	0.94	0.63	0.75
BART_pointwise_good_prior	0.95	0.61	0.75
BART_simul_max_good_prior	0.00	0.00	
BART_simul_se_good_prior	0.93	0.07	0.13
BART_best_bad_prior	0.78	0.41	0.54
BART_pointwise_bad_prior	0.79	0.43	0.56
BART_simul_max_bad_prior	0.04	0.00	0.00
BART_simul_se_bad_prior	0.80	0.04	0.08
stepwise_backward	0.30	0.99	0.46
stepwise_forward	0.20	1.00	0.33
lasso	0.50	1.00	0.67
RF_CV	0.63	0.39	0.48
RF_point	0.64	0.39	0.48
RF_simul	0.95	0.11	0.20

Table 35: Results for  $p = 200$ ,  $p_0 = 40$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.38	0.16	0.23
BART_pointwise	0.77	0.35	0.48
BART_simul_max	0.04	0.00	0.00
BART_simul_se	0.71	0.04	0.07
BART_best_good_prior	0.86	0.49	0.62
BART_pointwise_good_prior	0.89	0.49	0.64
BART_simul_max_good_prior	0.16	0.00	0.01
BART_simul_se_good_prior	0.96	0.05	0.10
BART_best_bad_prior	0.43	0.15	0.22
BART_pointwise_bad_prior	0.71	0.30	0.42
BART_simul_max_bad_prior	0.08	0.00	0.00
BART_simul_se_bad_prior	0.58	0.02	0.05
stepwise_backward	0.28	0.89	0.43
stepwise_forward	0.20	1.00	0.33
lasso	0.58	0.86	0.69
RF_CV	0.55	0.29	0.38
RF_point	0.53	0.29	0.37
RF_simul	0.85	0.07	0.14

Table 36: Results for  $p = 200$ ,  $p_0 = 40$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.99	1	0.99
BART_pointwise	0.23	1	0.37
BART_simul_max	1.00	1	1.00
BART_simul_se	0.97	1	0.98
BART_best_good_prior	0.99	1	0.99
BART_pointwise_good_prior	0.24	1	0.38
BART_simul_max_good_prior	1.00	1	1.00
BART_simul_se_good_prior	0.98	1	0.99
BART_best_bad_prior	0.99	1	0.99
BART_pointwise_bad_prior	0.22	1	0.36
BART_simul_max_bad_prior	1.00	1	1.00
BART_simul_se_bad_prior	0.97	1	0.98
stepwise_backward			
stepwise_forward			
lasso	0.67	1	0.80
RF_CV	0.97	1	0.99
RF_point	0.16	1	0.27
RF_simul	0.99	1	0.99

Table 37: Results for  $p = 500$ ,  $p_0 = 5$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.83	0.89	0.86
BART_pointwise	0.22	1.00	0.36
BART_simul_max	1.00	0.67	0.80
BART_simul_se	0.93	0.86	0.90
BART_best_good_prior	0.93	0.95	0.94
BART_pointwise_good_prior	0.22	1.00	0.36
BART_simul_max_good_prior	1.00	0.82	0.90
BART_simul_se_good_prior	0.92	0.91	0.91
BART_best_bad_prior	0.83	0.86	0.85
BART_pointwise_bad_prior	0.21	1.00	0.35
BART_simul_max_bad_prior	1.00	0.62	0.76
BART_simul_se_bad_prior	0.94	0.88	0.91
stepwise_backward			
stepwise_forward			
lasso	0.85	1.00	0.92
RF_CV	0.65	0.89	0.75
RF_point	0.16	0.95	0.27
RF_simul	0.98	0.84	0.91

Table 38: Results for  $p = 500$ ,  $p_0 = 5$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.19	0.07	0.10
BART_pointwise	0.14	0.74	0.24
BART_simul_max	0.12	0.02	0.04
BART_simul_se	0.59	0.27	0.37
BART_best_good_prior	0.44	0.31	0.36
BART_pointwise_good_prior	0.17	0.89	0.29
BART_simul_max_good_prior	0.40	0.08	0.13
BART_simul_se_good_prior	0.56	0.31	0.40
BART_best_bad_prior	0.18	0.10	0.13
BART_pointwise_bad_prior	0.14	0.70	0.24
BART_simul_max_bad_prior	0.20	0.04	0.07
BART_simul_se_bad_prior	0.51	0.26	0.34
stepwise_backward			
stepwise_forward			
lasso	0.28	0.22	0.25
RF_CV	0.08	0.50	0.14
RF_point	0.09	0.50	0.15
RF_simul	0.51	0.21	0.29

Table 39: Results for  $p = 500$ ,  $p_0 = 5$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.58	0.84	0.69
BART_pointwise	0.58	0.83	0.68
BART_simul_max	0.36	0.02	0.03
BART_simul_se	0.98	0.29	0.45
BART_best_good_prior	0.65	0.95	0.77
BART_pointwise_good_prior	0.66	0.93	0.77
BART_simul_max_good_prior	0.64	0.05	0.09
BART_simul_se_good_prior	0.99	0.46	0.62
BART_best_bad_prior	0.57	0.83	0.68
BART_pointwise_bad_prior	0.56	0.81	0.66
BART_simul_max_bad_prior	0.32	0.01	0.03
BART_simul_se_bad_prior	0.99	0.27	0.42
stepwise_backward			
stepwise_forward			
lasso	0.41	1.00	0.58
RF_CV	0.33	0.49	0.39
RF_point	0.31	0.47	0.37
RF_simul	0.93	0.14	0.25

Table 40: Results for  $p = 500$ ,  $p_0 = 25$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.53	0.72	0.61
BART_pointwise	0.52	0.71	0.60
BART_simul_max	0.28	0.01	0.02
BART_simul_se	0.96	0.22	0.36
BART_best_good_prior	0.59	0.86	0.70
BART_pointwise_good_prior	0.61	0.86	0.71
BART_simul_max_good_prior	0.40	0.02	0.04
BART_simul_se_good_prior	0.98	0.34	0.50
BART_best_bad_prior	0.51	0.71	0.59
BART_pointwise_bad_prior	0.48	0.69	0.57
BART_simul_max_bad_prior	0.20	0.01	0.02
BART_simul_se_bad_prior	0.97	0.21	0.34
stepwise_backward			
stepwise_forward			
lasso	0.40	1.00	0.57
RF_CV	0.29	0.42	0.35
RF_point	0.30	0.43	0.36
RF_simul	0.98	0.14	0.24

Table 41: Results for  $p = 500$ ,  $p_0 = 25$ ,  $\sigma^2 = 5$ .



Method	Precision	Recall	F1
BART_best	0.21	0.22	0.22
BART_pointwise	0.39	0.46	0.42
BART_simul_max	0.08	0.00	0.01
BART_simul_se	0.82	0.11	0.20
BART_best_good_prior	0.47	0.57	0.52
BART_pointwise_good_prior	0.52	0.67	0.58
BART_simul_max_good_prior	0.12	0.00	0.01
BART_simul_se_good_prior	0.92	0.19	0.31
BART_best_bad_prior	0.23	0.18	0.20
BART_pointwise_bad_prior	0.38	0.47	0.42
BART_simul_max_bad_prior	0.04	0.00	0.00
BART_simul_se_bad_prior	0.82	0.10	0.18
stepwise_backward			
stepwise_forward			
lasso	0.60	0.60	0.60
RF_CV	0.22	0.28	0.24
RF_point	0.23	0.29	0.26
RF_simul	0.85	0.07	0.12

Table 42: Results for  $p = 500$ ,  $p_0 = 25$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.47	0.35	0.40
BART_pointwise	0.56	0.41	0.48
BART_simul_max	0.04	0.00	0.00
BART_simul_se	0.92	0.07	0.13
BART_best_good_prior	0.66	0.55	0.60
BART_pointwise_good_prior	0.69	0.55	0.61
BART_simul_max_good_prior	0.08	0.00	0.00
BART_simul_se_good_prior	0.94	0.11	0.19
BART_best_bad_prior	0.46	0.31	0.37
BART_pointwise_bad_prior	0.51	0.36	0.42
BART_simul_max_bad_prior	0.12	0.00	0.00
BART_simul_se_bad_prior	0.76	0.07	0.13
stepwise_backward			
stepwise_forward			
lasso	0.37	1.00	0.54
RF_CV	0.31	0.22	0.25
RF_point	0.32	0.23	0.27
RF_simul	0.78	0.04	0.07

Table 43: Results for  $p = 500$ ,  $p_0 = 50$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.42	0.29	0.34
BART_pointwise	0.54	0.38	0.45
BART_simul_max	0.00	0.00	
BART_simul_se	0.93	0.06	0.11
BART_best_good_prior	0.69	0.56	0.62
BART_pointwise_good_prior	0.67	0.54	0.60
BART_simul_max_good_prior	0.12	0.00	0.00
BART_simul_se_good_prior	0.97	0.10	0.18
BART_best_bad_prior	0.38	0.27	0.31
BART_pointwise_bad_prior	0.52	0.36	0.43
BART_simul_max_bad_prior	0.04	0.00	0.00
BART_simul_se_bad_prior	0.88	0.05	0.10
stepwise_backward			
stepwise_forward			
lasso	0.45	0.96	0.61
RF_CV	0.31	0.22	0.26
RF_point	0.33	0.22	0.26
RF_simul	0.77	0.03	0.06

Table 44: Results for  $p = 500$ ,  $p_0 = 50$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.28	0.14	0.19
BART_pointwise	0.48	0.32	0.38
BART_simul_max	0.00	0.00	
BART_simul_se	0.70	0.04	0.08
BART_best_good_prior	0.57	0.40	0.47
BART_pointwise_good_prior	0.68	0.50	0.57
BART_simul_max_good_prior	0.08	0.00	0.00
BART_simul_se_good_prior	0.90	0.07	0.14
BART_best_bad_prior	0.09	0.04	0.06
BART_pointwise_bad_prior	0.46	0.31	0.37
BART_simul_max_bad_prior	0.04	0.00	0.00
BART_simul_se_bad_prior	0.77	0.05	0.09
stepwise_backward			
stepwise_forward			
lasso	0.52	0.48	0.50
RF_CV	0.27	0.17	0.21
RF_point	0.29	0.19	0.23
RF_simul	0.81	0.03	0.06

Table 45: Results for  $p = 500$ ,  $p_0 = 50$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.29	0.11	0.16
BART_pointwise	0.60	0.21	0.31
BART_simul_max	0.00	0.00	
BART_simul_se	0.84	0.03	0.05
BART_best_good_prior	0.62	0.27	0.37
BART_pointwise_good_prior	0.77	0.32	0.45
BART_simul_max_good_prior	0.04	0.00	0.00
BART_simul_se_good_prior	0.94	0.04	0.07
BART_best_bad_prior	0.17	0.06	0.09
BART_pointwise_bad_prior	0.52	0.18	0.27
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.64	0.02	0.03
stepwise_backward			
stepwise_forward			
lasso	0.56	0.73	0.64
RF_CV	0.40	0.14	0.21
RF_point	0.40	0.14	0.20
RF_simul	0.47	0.01	0.02

Table 46: Results for  $p = 500$ ,  $p_0 = 100$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.30	0.06	0.10
BART_pointwise	0.60	0.21	0.31
BART_simul_max	0.00	0.00	
BART_simul_se	0.80	0.02	0.04
BART_best_good_prior	0.61	0.25	0.36
BART_pointwise_good_prior	0.75	0.31	0.44
BART_simul_max_good_prior	0.00	0.00	
BART_simul_se_good_prior	0.90	0.03	0.06
BART_best_bad_prior	0.10	0.02	0.04
BART_pointwise_bad_prior	0.51	0.18	0.26
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.75	0.02	0.04
stepwise_backward			
stepwise_forward			
lasso	0.63	0.53	0.58
RF_CV	0.40	0.15	0.21
RF_point	0.36	0.12	0.18
RF_simul	0.78	0.01	0.03

Table 47: Results for  $p = 500$ ,  $p_0 = 100$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.19	0.05	0.07
BART_pointwise	0.57	0.19	0.29
BART_simul_max	0.00	0.00	
BART_simul_se	0.76	0.02	0.04
BART_best_good_prior	0.45	0.17	0.25
BART_pointwise_good_prior	0.74	0.30	0.42
BART_simul_max_good_prior	0.04	0.00	0.00
BART_simul_se_good_prior	0.85	0.03	0.06
BART_best_bad_prior	0.04	0.01	0.02
BART_pointwise_bad_prior	0.50	0.17	0.26
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.81	0.02	0.03
stepwise_backward			
stepwise_forward			
lasso	0.64	0.26	0.37
RF_CV	0.35	0.12	0.18
RF_point	0.38	0.13	0.19
RF_simul	0.68	0.01	0.02

Table 48: Results for  $p = 500$ ,  $p_0 = 100$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.80	0.97	0.87
BART_pointwise	0.26	1.00	0.41
BART_simul_max	1.00	0.68	0.81
BART_simul_se	0.95	0.97	0.96
BART_best_good_prior	0.95	0.98	0.96
BART_pointwise_good_prior	0.29	1.00	0.45
BART_simul_max_good_prior	1.00	0.92	0.96
BART_simul_se_good_prior	0.98	0.98	0.98
BART_best_bad_prior	0.83	0.96	0.89
BART_pointwise_bad_prior	0.25	1.00	0.40
BART_simul_max_bad_prior	1.00	0.73	0.85
BART_simul_se_bad_prior	0.97	0.96	0.96
stepwise_backward			
stepwise_forward			
lasso	0.53	1.00	0.69
RF_CV	0.46	0.81	0.59
RF_point	0.16	0.92	0.27
RF_simul	0.99	0.60	0.75

Table 49: Results for  $p = 1000$ ,  $p_0 = 10$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.39	0.92	0.55
BART_pointwise	0.22	0.98	0.36
BART_simul_max	0.56	0.10	0.17
BART_simul_se	0.86	0.65	0.74
BART_best_good_prior	0.66	0.89	0.76
BART_pointwise_good_prior	0.24	1.00	0.38
BART_simul_max_good_prior	0.96	0.28	0.43
BART_simul_se_good_prior	0.91	0.82	0.86
BART_best_bad_prior	0.51	0.88	0.64
BART_pointwise_bad_prior	0.22	0.99	0.36
BART_simul_max_bad_prior	0.60	0.07	0.12
BART_simul_se_bad_prior	0.87	0.68	0.76
stepwise_backward			
stepwise_forward			
lasso	0.48	0.99	0.65
RF_CV	0.17	0.73	0.27
RF_point	0.13	0.76	0.22
RF_simul	0.97	0.39	0.55

Table 50: Results for  $p = 1000$ ,  $p_0 = 10$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.06	0.06	0.06
BART_pointwise	0.14	0.64	0.22
BART_simul_max	0.00	0.00	
BART_simul_se	0.61	0.24	0.34
BART_best_good_prior	0.21	0.23	0.22
BART_pointwise_good_prior	0.18	0.82	0.29
BART_simul_max_good_prior	0.20	0.03	0.05
BART_simul_se_good_prior	0.71	0.36	0.48
BART_best_bad_prior	0.14	0.07	0.09
BART_pointwise_bad_prior	0.13	0.62	0.21
BART_simul_max_bad_prior	0.04	0.00	0.01
BART_simul_se_bad_prior	0.57	0.23	0.33
stepwise_backward			
stepwise_forward			
lasso	0.35	0.32	0.33
RF_CV	0.10	0.31	0.15
RF_point	0.07	0.36	0.12
RF_simul	0.59	0.09	0.16

Table 51: Results for  $p = 1000$ ,  $p_0 = 10$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.22	0.22	0.22
BART_pointwise	0.34	0.36	0.35
BART_simul_max	0.00	0.00	
BART_simul_se	0.75	0.09	0.16
BART_best_good_prior	0.49	0.58	0.53
BART_pointwise_good_prior	0.48	0.57	0.52
BART_simul_max_good_prior	0.08	0.00	0.00
BART_simul_se_good_prior	0.89	0.14	0.24
BART_best_bad_prior	0.20	0.21	0.21
BART_pointwise_bad_prior	0.36	0.38	0.37
BART_simul_max_bad_prior	0.04	0.00	0.00
BART_simul_se_bad_prior	0.74	0.08	0.14
stepwise_backward			
stepwise_forward			
lasso	0.43	0.92	0.58
RF_CV	0.15	0.16	0.16
RF_point	0.16	0.18	0.17
RF_simul	0.58	0.02	0.03

Table 52: Results for  $p = 1000$ ,  $p_0 = 50$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.16	0.17	0.17
BART_pointwise	0.33	0.37	0.35
BART_simul_max	0.04	0.00	0.00
BART_simul_se	0.66	0.07	0.13
BART_best_good_prior	0.46	0.49	0.47
BART_pointwise_good_prior	0.47	0.54	0.50
BART_simul_max_good_prior	0.24	0.01	0.01
BART_simul_se_good_prior	0.83	0.12	0.21
BART_best_bad_prior	0.20	0.12	0.15
BART_pointwise_bad_prior	0.31	0.35	0.33
BART_simul_max_bad_prior	0.04	0.00	0.00
BART_simul_se_bad_prior	0.79	0.08	0.14
stepwise_backward			
stepwise_forward			
lasso	0.49	0.65	0.56
RF_CV	0.15	0.16	0.16
RF_point	0.17	0.19	0.18
RF_simul	0.81	0.03	0.05

Table 53: Results for  $p = 1000$ ,  $p_0 = 50$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.05	0.02	0.03
BART_pointwise	0.28	0.29	0.28
BART_simul_max	0.08	0.00	0.00
BART_simul_se	0.62	0.05	0.10
BART_best_good_prior	0.26	0.21	0.23
BART_pointwise_good_prior	0.43	0.46	0.45
BART_simul_max_good_prior	0.08	0.00	0.00
BART_simul_se_good_prior	0.77	0.09	0.16
BART_best_bad_prior	0.15	0.02	0.04
BART_pointwise_bad_prior	0.28	0.29	0.29
BART_simul_max_bad_prior	0.08	0.00	0.00
BART_simul_se_bad_prior	0.56	0.05	0.09
stepwise_backward			
stepwise_forward			
lasso	0.45	0.26	0.33
RF_CV	0.15	0.12	0.14
RF_point	0.15	0.16	0.15
RF_simul	0.46	0.01	0.02

Table 54: Results for  $p = 1000$ ,  $p_0 = 50$ ,  $\sigma^2 = 20$ .

Method	Precision	Recall	F1
BART_best	0.05	0.03	0.04
BART_pointwise	0.38	0.20	0.27
BART_simul_max	0.00	0.00	
BART_simul_se	0.65	0.03	0.06
BART_best_good_prior	0.33	0.20	0.25
BART_pointwise_good_prior	0.54	0.33	0.41
BART_simul_max_good_prior	0.00	0.00	
BART_simul_se_good_prior	0.81	0.05	0.10
BART_best_bad_prior	0.02	0.01	0.01
BART_pointwise_bad_prior	0.33	0.19	0.24
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.57	0.03	0.05
stepwise_backward			
stepwise_forward			
lasso	0.49	0.22	0.31
RF_CV	0.18	0.11	0.13
RF_point	0.20	0.11	0.14
RF_simul	0.57	0.01	0.01

Table 55: Results for  $p = 1000$ ,  $p_0 = 100$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.03	0.02	0.02
BART_pointwise	0.35	0.19	0.25
BART_simul_max	0.00	0.00	
BART_simul_se	0.61	0.02	0.05
BART_best_good_prior	0.28	0.17	0.21
BART_pointwise_good_prior	0.51	0.32	0.39
BART_simul_max_good_prior	0.04	0.00	0.00
BART_simul_se_good_prior	0.80	0.04	0.08
BART_best_bad_prior	0.06	0.03	0.04
BART_pointwise_bad_prior	0.31	0.17	0.22
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.63	0.03	0.05
stepwise_backward			
stepwise_forward			
lasso	0.41	0.21	0.28
RF_CV	0.19	0.09	0.13
RF_point	0.21	0.11	0.14
RF_simul	0.40	0.01	0.01

Table 56: Results for  $p = 1000$ ,  $p_0 = 100$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.06	0.00	0.01
BART_pointwise	0.32	0.17	0.22
BART_simul_max	0.00	0.00	
BART_simul_se	0.60	0.02	0.05
BART_best_good_prior	0.14	0.08	0.10
BART_pointwise_good_prior	0.51	0.30	0.38
BART_simul_max_good_prior	0.08	0.00	0.00
BART_simul_se_good_prior	0.73	0.04	0.07
BART_best_bad_prior	0.04	0.00	0.00
BART_pointwise_bad_prior	0.29	0.16	0.20
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.58	0.03	0.05
stepwise_backward			
stepwise_forward			
lasso	0.36	0.09	0.14
RF_CV	0.16	0.09	0.11
RF_point	0.19	0.10	0.13
RF_simul	0.60	0.01	0.02

Table 57: Results for  $p = 1000$ ,  $p_0 = 100$ ,  $\sigma^2 = 20$ .



Method	Precision	Recall	F1
BART_best	0.03	0.00	0.00
BART_pointwise	0.41	0.11	0.18
BART_simul_max	0.00	0.00	
BART_simul_se	0.63	0.01	0.02
BART_best_good_prior	0.12	0.04	0.06
BART_pointwise_good_prior	0.62	0.19	0.30
BART_simul_max_good_prior	0.00	0.00	
BART_simul_se_good_prior	0.75	0.02	0.04
BART_best_bad_prior	0.00	0.00	
BART_pointwise_bad_prior	0.34	0.10	0.15
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.56	0.01	0.02
stepwise_backward			
stepwise_forward			
lasso	0.35	0.06	0.10
RF_CV	0.28	0.08	0.12
RF_point	0.28	0.07	0.12
RF_simul	0.30	0.00	0.00

Table 58: Results for  $p = 1000$ ,  $p_0 = 200$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.07	0.00	0.00
BART_pointwise	0.42	0.12	0.18
BART_simul_max	0.00	0.00	
BART_simul_se	0.67	0.01	0.02
BART_best_good_prior	0.22	0.06	0.09
BART_pointwise_good_prior	0.64	0.19	0.30
BART_simul_max_good_prior	0.00	0.00	
BART_simul_se_good_prior	0.79	0.02	0.04
BART_best_bad_prior	0.03	0.00	0.00
BART_pointwise_bad_prior	0.35	0.10	0.15
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.49	0.01	0.02
stepwise_backward			
stepwise_forward			
lasso	0.23	0.04	0.06
RF_CV	0.29	0.08	0.13
RF_point	0.29	0.08	0.12
RF_simul	0.28	0.00	0.00

Table 59: Results for  $p = 1000$ ,  $p_0 = 200$ ,  $\sigma^2 = 5$ .

Method	Precision	Recall	F1
BART_best	0.00	0.00	
BART_pointwise	0.39	0.11	0.17
BART_simul_max	0.00	0.00	
BART_simul_se	0.74	0.01	0.02
BART_best_good_prior	0.08	0.02	0.04
BART_pointwise_good_prior	0.61	0.19	0.29
BART_simul_max_good_prior	0.04	0.00	0.00
BART_simul_se_good_prior	0.80	0.02	0.03
BART_best_bad_prior	0.00	0.00	
BART_pointwise_bad_prior	0.31	0.09	0.14
BART_simul_max_bad_prior	0.00	0.00	
BART_simul_se_bad_prior	0.56	0.01	0.02
stepwise_backward			
stepwise_forward			
lasso	0.24	0.03	0.06
RF_CV	0.25	0.07	0.11
RF_point	0.27	0.07	0.11
RF_simul	0.29	0.00	0.00

Table 60: Results for  $p = 1000$ ,  $p_0 = 200$ ,  $\sigma^2 = 20$ .

### 3 Friedman Data Results

Method	Precision	Recall	F1
BART_best	1.00	0.59	0.74
BART_pointwise	1.00	0.59	0.74
BART_simul_max	1.00	0.45	0.62
BART_simul_se	1.00	0.46	0.63
BART_best_good_prior	1.00	0.65	0.79
BART_pointwise_good_prior	1.00	0.61	0.76
BART_simul_max_good_prior	1.00	0.49	0.66
BART_simul_se_good_prior	1.00	0.51	0.68
BART_best_bad_prior	1.00	0.59	0.74
BART_pointwise_bad_prior	1.00	0.60	0.75
BART_simul_max_bad_prior	1.00	0.44	0.61
BART_simul_se_bad_prior	1.00	0.42	0.60
stepwise_backward	0.48	0.66	0.55
stepwise_forward	0.20	1.00	0.33
lasso	0.97	0.38	0.55
RF_CV	0.84	0.54	0.66
RF_point	0.64	0.62	0.63
RF_simul	0.92	0.52	0.66

Table 61: Results for  $p = 25$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	1.00	0.50	0.66
BART_pointwise	1.00	0.52	0.68
BART_simul_max	1.00	0.37	0.54
BART_simul_se	1.00	0.39	0.56
BART_best_good_prior	1.00	0.58	0.74
BART_pointwise_good_prior	1.00	0.63	0.77
BART_simul_max_good_prior	1.00	0.45	0.62
BART_simul_se_good_prior	1.00	0.46	0.63
BART_best_bad_prior	1.00	0.46	0.63
BART_pointwise_bad_prior	1.00	0.51	0.68
BART_simul_max_bad_prior	1.00	0.35	0.52
BART_simul_se_bad_prior	1.00	0.36	0.53
stepwise_backward	0.56	0.66	0.60
stepwise_forward	0.20	1.00	0.33
lasso	0.92	0.32	0.47
RF_CV	0.90	0.51	0.65
RF_point	0.70	0.58	0.64
RF_simul	0.92	0.50	0.65

Table 62: Results for  $p = 25$ ,  $\sigma^2 = 100$ .

Method	Precision	Recall	F1
BART_best	0.93	0.39	0.55
BART_pointwise	0.93	0.45	0.60
BART_simul_max	1.00	0.22	0.37
BART_simul_se	1.00	0.26	0.41
BART_best_good_prior	0.99	0.50	0.66
BART_pointwise_good_prior	0.98	0.60	0.74
BART_simul_max_good_prior	1.00	0.34	0.50
BART_simul_se_good_prior	1.00	0.35	0.52
BART_best_bad_prior	0.86	0.29	0.43
BART_pointwise_bad_prior	0.78	0.42	0.54
BART_simul_max_bad_prior	1.00	0.21	0.34
BART_simul_se_bad_prior	0.98	0.21	0.34
stepwise_backward	0.53	0.64	0.58
stepwise_forward	0.20	1.00	0.33
lasso	0.84	0.28	0.42
RF_CV	0.78	0.48	0.59
RF_point	0.56	0.56	0.56
RF_simul	0.83	0.47	0.60

Table 63: Results for  $p = 25$ ,  $\sigma^2 = 625$ .

Method	Precision	Recall	F1
BART_best	0.96	0.59	0.73
BART_pointwise	0.93	0.61	0.74
BART_simul_max	1.00	0.50	0.66
BART_simul_se	1.00	0.52	0.68
BART_best_good_prior	0.99	0.58	0.73
BART_pointwise_good_prior	0.98	0.62	0.76
BART_simul_max_good_prior	1.00	0.50	0.67
BART_simul_se_good_prior	1.00	0.54	0.70
BART_best_bad_prior	0.95	0.58	0.72
BART_pointwise_bad_prior	0.91	0.60	0.72
BART_simul_max_bad_prior	1.00	0.47	0.64
BART_simul_se_bad_prior	1.00	0.54	0.70
stepwise_backward	0.11	0.63	0.19
stepwise_forward	0.05	1.00	0.10
lasso	0.87	0.30	0.44
RF_CV	0.90	0.51	0.65
RF_point	0.35	0.59	0.44
RF_simul	0.90	0.50	0.65

Table 64: Results for  $p = 100$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.99	0.50	0.66
BART_pointwise	0.86	0.60	0.71
BART_simul_max	1.00	0.45	0.62
BART_simul_se	1.00	0.47	0.64
BART_best_good_prior	0.95	0.54	0.69
BART_pointwise_good_prior	0.84	0.62	0.72
BART_simul_max_good_prior	1.00	0.49	0.66
BART_simul_se_good_prior	1.00	0.50	0.66
BART_best_bad_prior	0.95	0.50	0.66
BART_pointwise_bad_prior	0.84	0.59	0.69
BART_simul_max_bad_prior	1.00	0.43	0.60
BART_simul_se_bad_prior	1.00	0.46	0.63
stepwise_backward	0.12	0.66	0.20
stepwise_forward	0.05	1.00	0.10
lasso	0.82	0.31	0.45
RF_CV	0.91	0.49	0.64
RF_point	0.31	0.54	0.39
RF_simul	0.89	0.46	0.61

Table 65: Results for  $p = 100$ ,  $\sigma^2 = 100$ .

Method	Precision	Recall	F1
BART_best	0.95	0.29	0.44
BART_pointwise	0.60	0.50	0.55
BART_simul_max	1.00	0.24	0.39
BART_simul_se	1.00	0.29	0.45
BART_best_good_prior	0.99	0.41	0.58
BART_pointwise_good_prior	0.65	0.59	0.62
BART_simul_max_good_prior	1.00	0.30	0.47
BART_simul_se_good_prior	1.00	0.41	0.58
BART_best_bad_prior	0.99	0.28	0.44
BART_pointwise_bad_prior	0.59	0.50	0.54
BART_simul_max_bad_prior	1.00	0.23	0.38
BART_simul_se_bad_prior	1.00	0.26	0.42
stepwise_backward	0.12	0.62	0.20
stepwise_forward	0.05	1.00	0.10
lasso	0.78	0.22	0.35
RF_CV	0.62	0.44	0.51
RF_point	0.30	0.54	0.39
RF_simul	0.84	0.42	0.56

Table 66: Results for  $p = 100$ ,  $\sigma^2 = 625$ .

Method	Precision	Recall	F1
BART_best	0.97	0.50	0.66
BART_pointwise	0.60	0.62	0.61
BART_simul_max	1.00	0.47	0.64
BART_simul_se	1.00	0.54	0.70
BART_best_good_prior	0.93	0.56	0.70
BART_pointwise_good_prior	0.65	0.65	0.65
BART_simul_max_good_prior	1.00	0.54	0.70
BART_simul_se_good_prior	1.00	0.58	0.73
BART_best_bad_prior	0.94	0.53	0.68
BART_pointwise_bad_prior	0.63	0.61	0.62
BART_simul_max_bad_prior	1.00	0.51	0.68
BART_simul_se_bad_prior	1.00	0.54	0.70
stepwise_backward	0.03	0.80	0.07
stepwise_forward	0.02	1.00	0.05
lasso	0.92	0.30	0.45
RF_CV	0.82	0.50	0.62
RF_point	0.21	0.60	0.31
RF_simul	0.87	0.49	0.63

Table 67: Results for  $p = 200$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.93	0.46	0.62
BART_pointwise	0.50	0.60	0.55
BART_simul_max	1.00	0.41	0.58
BART_simul_se	1.00	0.44	0.61
BART_best_good_prior	0.99	0.49	0.65
BART_pointwise_good_prior	0.52	0.62	0.57
BART_simul_max_good_prior	1.00	0.44	0.61
BART_simul_se_good_prior	0.99	0.50	0.66
BART_best_bad_prior	0.96	0.43	0.60
BART_pointwise_bad_prior	0.55	0.60	0.57
BART_simul_max_bad_prior	1.00	0.41	0.58
BART_simul_se_bad_prior	1.00	0.45	0.62
stepwise_backward	0.03	0.81	0.07
stepwise_forward	0.02	1.00	0.05
lasso	0.92	0.28	0.43
RF_CV	0.87	0.49	0.63
RF_point	0.19	0.54	0.28
RF_simul	0.91	0.46	0.61

Table 68: Results for  $p = 200$ ,  $\sigma^2 = 100$ .

Method	Precision	Recall	F1
BART_best	0.96	0.25	0.39
BART_pointwise	0.31	0.54	0.40
BART_simul_max	1.00	0.25	0.40
BART_simul_se	0.95	0.30	0.46
BART_best_good_prior	0.99	0.31	0.47
BART_pointwise_good_prior	0.34	0.58	0.43
BART_simul_max_good_prior	1.00	0.30	0.47
BART_simul_se_good_prior	0.97	0.37	0.53
BART_best_bad_prior	0.97	0.25	0.39
BART_pointwise_bad_prior	0.29	0.54	0.37
BART_simul_max_bad_prior	1.00	0.24	0.39
BART_simul_se_bad_prior	0.98	0.30	0.45
stepwise_backward	0.03	0.70	0.06
stepwise_forward	0.02	1.00	0.05
lasso	0.62	0.22	0.33
RF_CV	0.40	0.47	0.44
RF_point	0.15	0.48	0.23
RF_simul	0.82	0.38	0.51

Table 69: Results for  $p = 200$ ,  $\sigma^2 = 625$ .

Method	Precision	Recall	F1
BART_best	0.97	0.47	0.64
BART_pointwise	0.12	0.63	0.20
BART_simul_max	1.00	0.43	0.60
BART_simul_se	0.99	0.48	0.65
BART_best_good_prior	1.00	0.55	0.71
BART_pointwise_good_prior	0.15	0.65	0.25
BART_simul_max_good_prior	1.00	0.51	0.68
BART_simul_se_good_prior	1.00	0.52	0.68
BART_best_bad_prior	1.00	0.52	0.68
BART_pointwise_bad_prior	0.12	0.62	0.20
BART_simul_max_bad_prior	1.00	0.43	0.60
BART_simul_se_bad_prior	0.97	0.50	0.66
stepwise_backward			
stepwise_forward			
lasso	0.95	0.29	0.44
RF_CV	0.95	0.43	0.59
RF_point	0.11	0.60	0.19
RF_simul	0.99	0.45	0.62

Table 70: Results for  $p = 500$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	1.00	0.42	0.60
BART_pointwise	0.13	0.62	0.22
BART_simul_max	1.00	0.38	0.55
BART_simul_se	0.95	0.45	0.61
BART_best_good_prior	0.98	0.45	0.61
BART_pointwise_good_prior	0.14	0.64	0.23
BART_simul_max_good_prior	1.00	0.41	0.58
BART_simul_se_good_prior	1.00	0.49	0.66
BART_best_bad_prior	0.99	0.43	0.60
BART_pointwise_bad_prior	0.11	0.62	0.19
BART_simul_max_bad_prior	1.00	0.40	0.57
BART_simul_se_bad_prior	0.98	0.47	0.64
stepwise_backward			
stepwise_forward			
lasso	0.92	0.30	0.46
RF_CV	0.87	0.42	0.57
RF_point	0.10	0.55	0.17
RF_simul	0.89	0.45	0.60

Table 71: Results for  $p = 500$ ,  $\sigma^2 = 100$ .



Method	Precision	Recall	F1
BART_best	0.98	0.26	0.42
BART_pointwise	0.11	0.53	0.19
BART_simul_max	1.00	0.23	0.38
BART_simul_se	0.90	0.34	0.49
BART_best_good_prior	0.99	0.30	0.47
BART_pointwise_good_prior	0.12	0.59	0.20
BART_simul_max_good_prior	1.00	0.29	0.45
BART_simul_se_good_prior	0.88	0.38	0.54
BART_best_bad_prior	0.95	0.30	0.46
BART_pointwise_bad_prior	0.10	0.53	0.17
BART_simul_max_bad_prior	1.00	0.23	0.38
BART_simul_se_bad_prior	0.84	0.35	0.50
stepwise_backward			
stepwise_forward			
lasso	0.63	0.20	0.30
RF_CV	0.27	0.38	0.32
RF_point	0.07	0.45	0.13
RF_simul	0.83	0.31	0.45

Table 72: Results for  $p = 500$ ,  $\sigma^2 = 625$ .

Method	Precision	Recall	F1
BART_best	0.92	0.49	0.64
BART_pointwise	0.05	0.64	0.10
BART_simul_max	1.00	0.42	0.59
BART_simul_se	0.82	0.51	0.63
BART_best_good_prior	0.89	0.53	0.66
BART_pointwise_good_prior	0.06	0.67	0.12
BART_simul_max_good_prior	1.00	0.46	0.63
BART_simul_se_good_prior	0.81	0.56	0.66
BART_best_bad_prior	0.83	0.50	0.62
BART_pointwise_bad_prior	0.05	0.62	0.10
BART_simul_max_bad_prior	1.00	0.38	0.55
BART_simul_se_bad_prior	0.81	0.50	0.62
stepwise_backward			
stepwise_forward			
lasso	0.88	0.26	0.41
RF_CV	0.96	0.46	0.62
RF_point	0.06	0.59	0.12
RF_simul	0.93	0.46	0.61

Table 73: Results for  $p = 1000$ ,  $\sigma^2 = 1$ .

Method	Precision	Recall	F1
BART_best	0.89	0.40	0.55
BART_pointwise	0.05	0.60	0.10
BART_simul_max	1.00	0.34	0.50
BART_simul_se	0.74	0.43	0.55
BART_best_good_prior	0.93	0.42	0.57
BART_pointwise_good_prior	0.06	0.63	0.11
BART_simul_max_good_prior	1.00	0.40	0.57
BART_simul_se_good_prior	0.78	0.52	0.62
BART_best_bad_prior	0.87	0.40	0.55
BART_pointwise_bad_prior	0.05	0.62	0.10
BART_simul_max_bad_prior	1.00	0.33	0.49
BART_simul_se_bad_prior	0.72	0.42	0.53
stepwise_backward			
stepwise_forward			
lasso	0.81	0.24	0.37
RF_CV	0.92	0.41	0.57
RF_point	0.05	0.50	0.10
RF_simul	0.94	0.41	0.57

Table 74: Results for  $p = 1000$ ,  $\sigma^2 = 100$ .

Method	Precision	Recall	F1
BART_best	0.95	0.23	0.37
BART_pointwise	0.05	0.50	0.09
BART_simul_max	1.00	0.22	0.36
BART_simul_se	0.62	0.31	0.42
BART_best_good_prior	0.93	0.26	0.41
BART_pointwise_good_prior	0.06	0.57	0.11
BART_simul_max_good_prior	1.00	0.26	0.41
BART_simul_se_good_prior	0.56	0.37	0.44
BART_best_bad_prior	0.94	0.23	0.37
BART_pointwise_bad_prior	0.05	0.49	0.09
BART_simul_max_bad_prior	1.00	0.21	0.34
BART_simul_se_bad_prior	0.59	0.34	0.43
stepwise_backward			
stepwise_forward			
lasso	0.68	0.18	0.29
RF_CV	0.10	0.41	0.17
RF_point	0.04	0.38	0.07
RF_simul	0.93	0.30	0.46

Table 75: Results for  $p = 1000$ ,  $\sigma^2 = 625$ .