Biomarker Discovery for Meta-Classification and Prognosis of Melanoma using Transfer Learning

1 Supplementary Materials
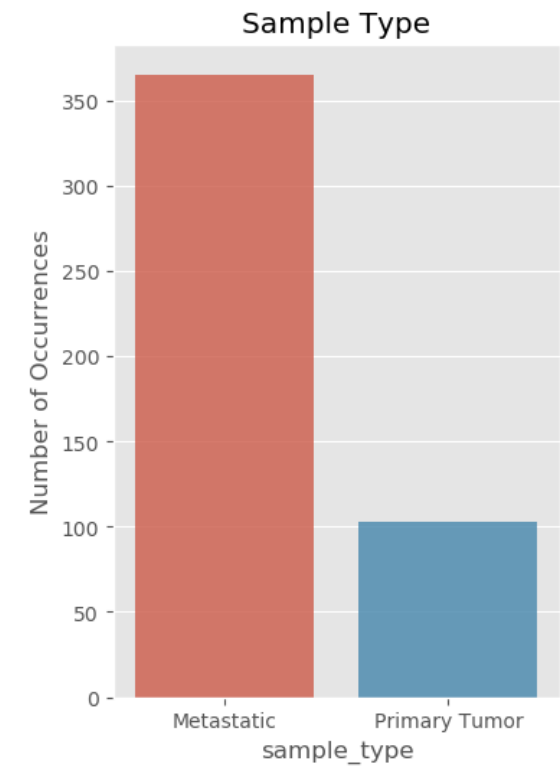

Figure S 1. Distribution of Sample Type
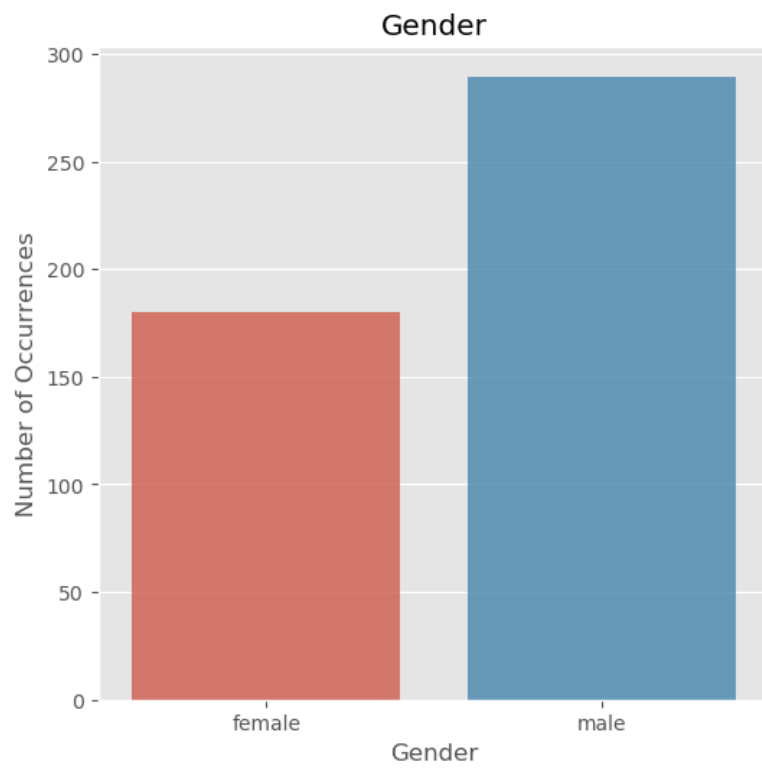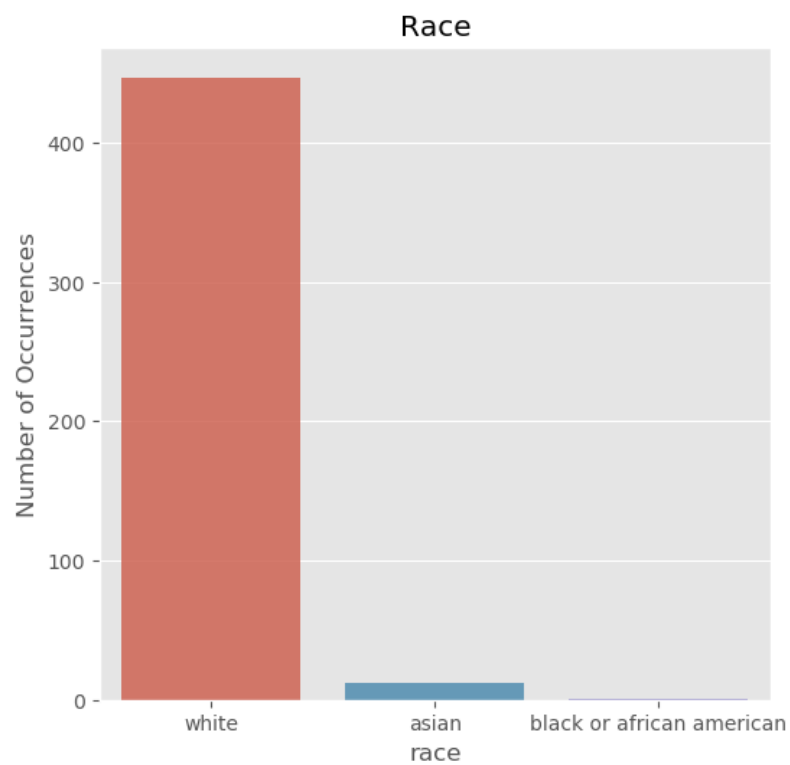
Figure S 2. Distribution of Gender
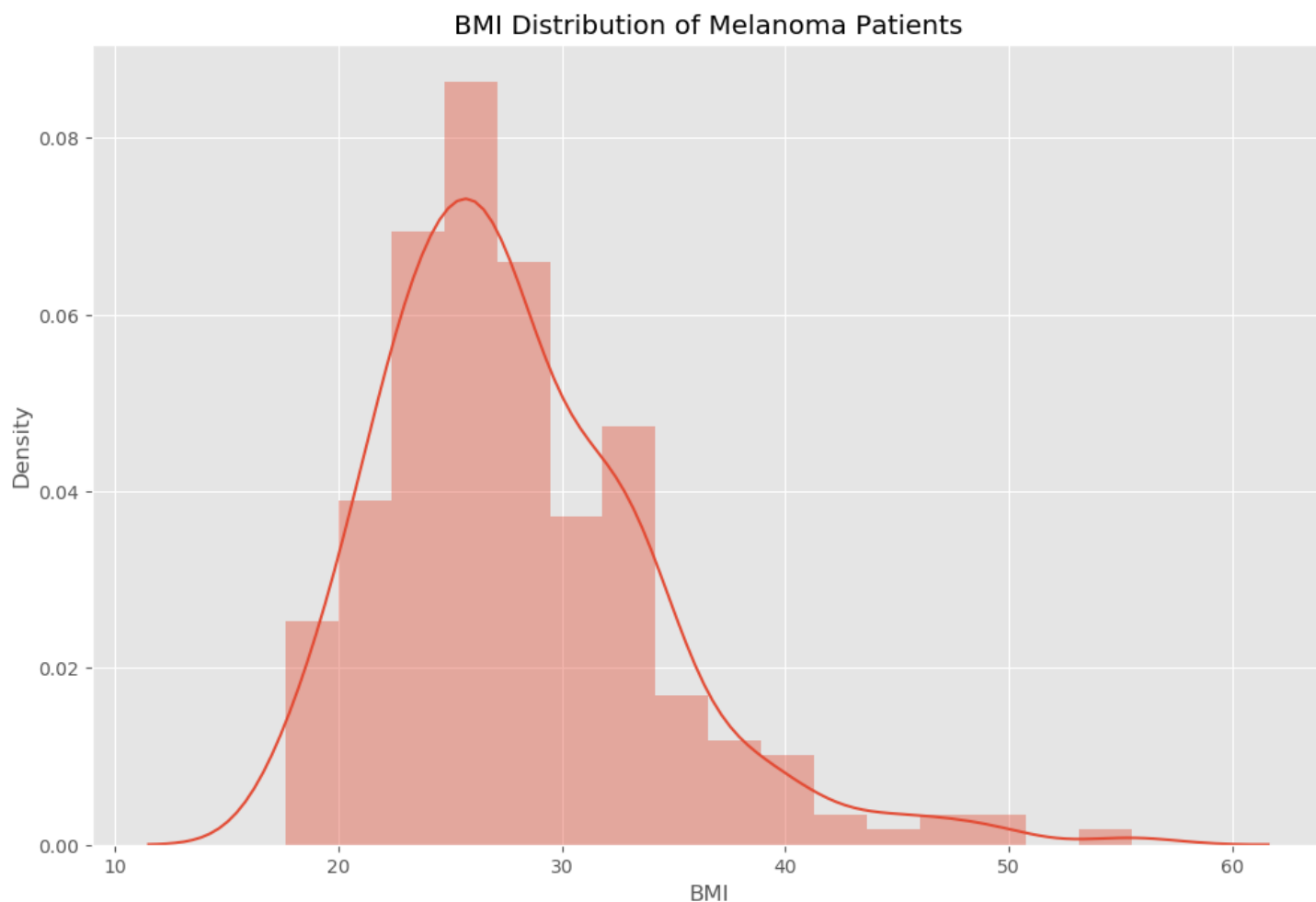

Figure S 3. Distribution of Race
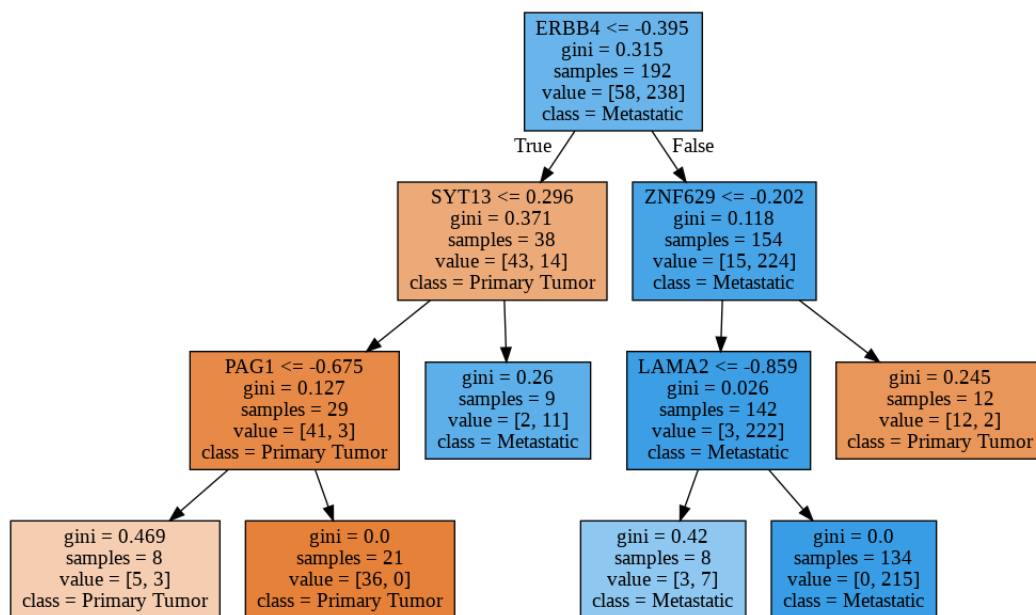
Figure S 4. Distribution of BMI

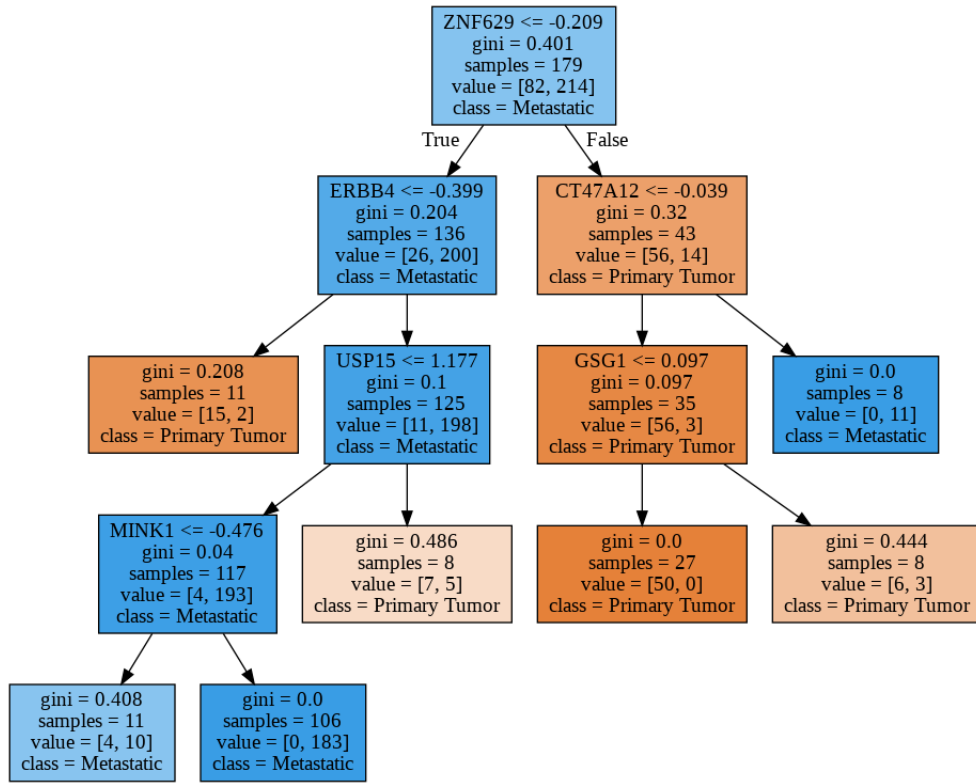**Figure S 5.** Biomarker Discovery - Random Forest Estimator 1

Figure S 6. Biomarker Discovery - Random Forest Estimator 2
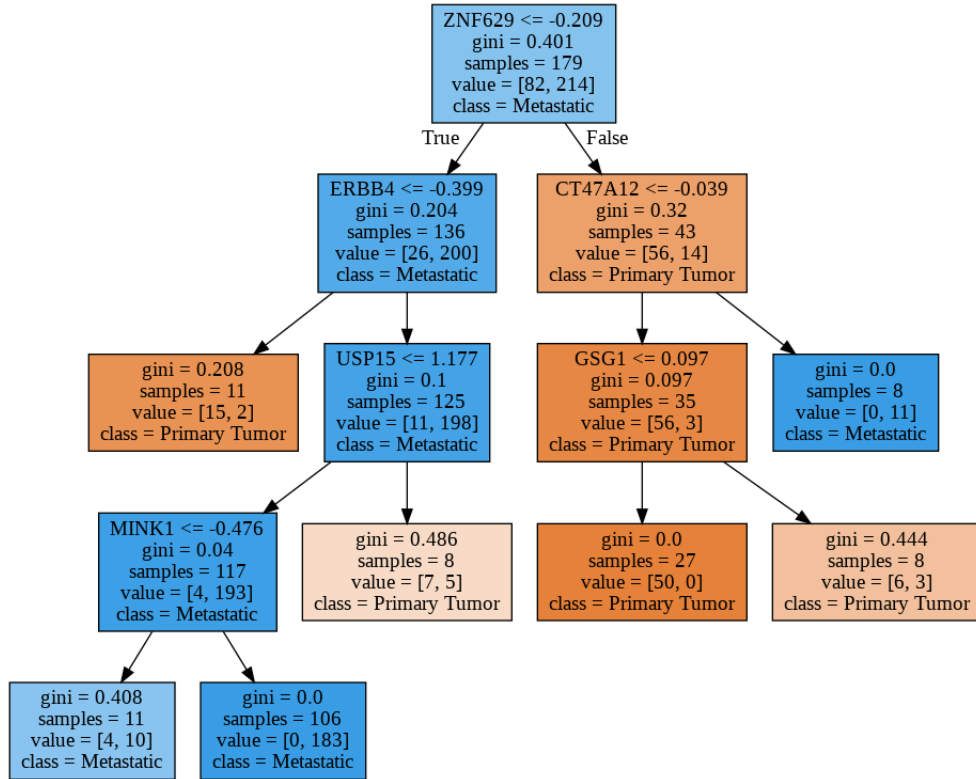

Figure S 7. Biomarker Discovery - Random Forest Estimator 3

Figure S 8. Biomarker Discovery - Random Forest Estimator 4

Figure S 9. Biomarker Discovery - Random Forest Estimator 5
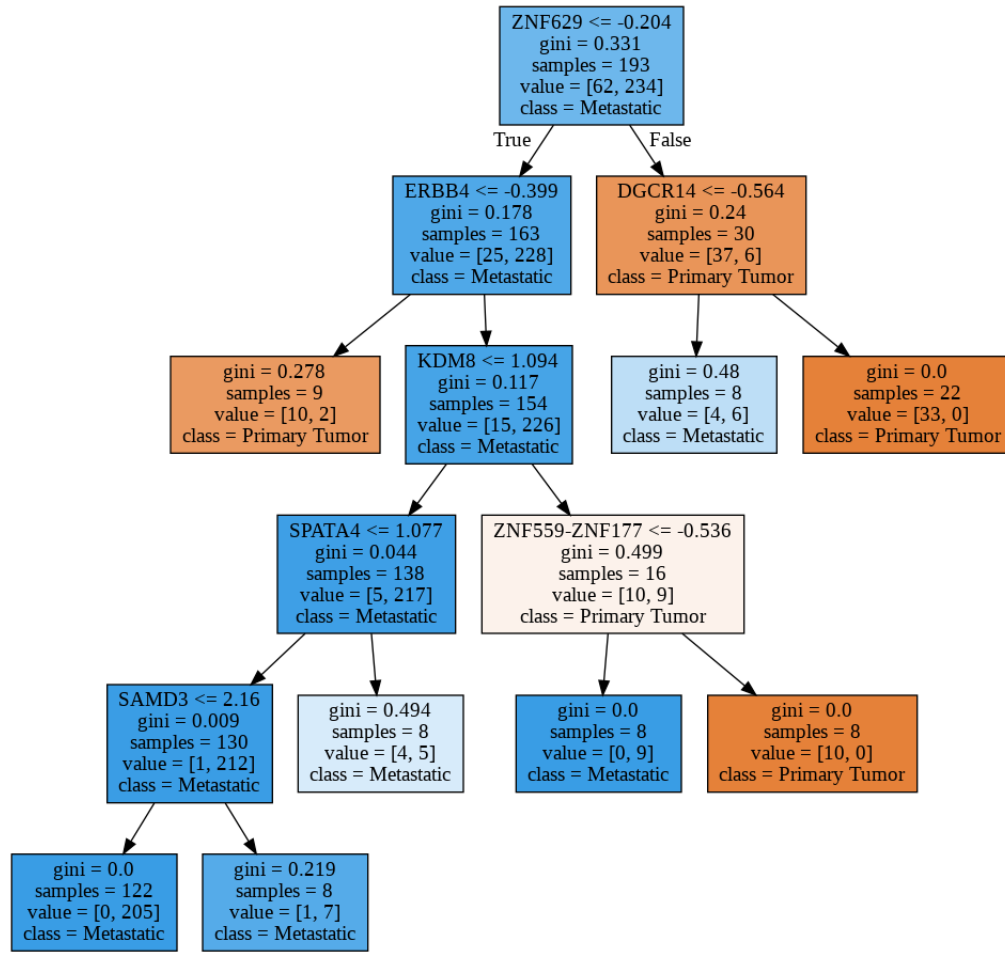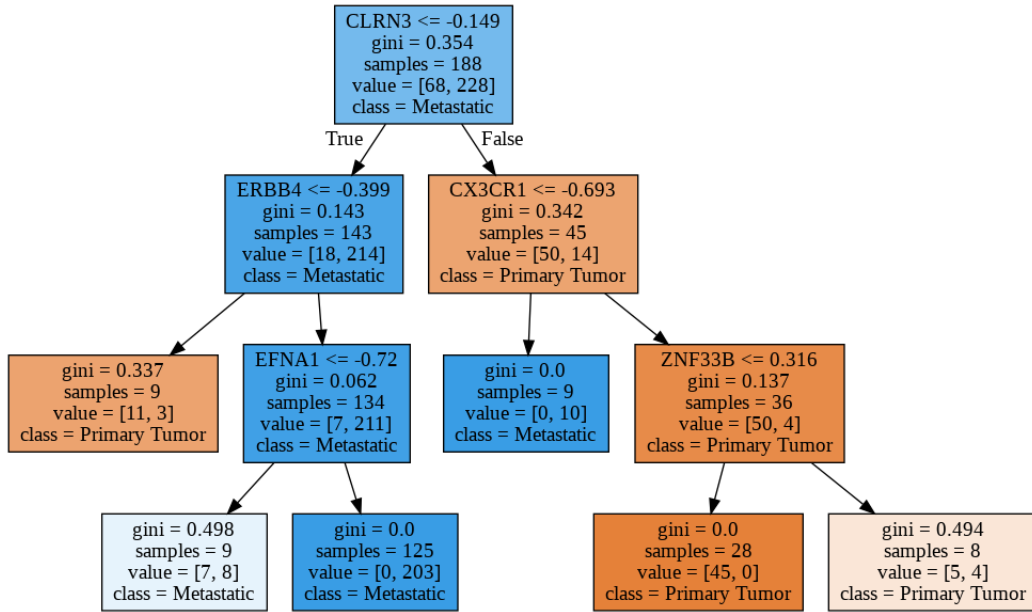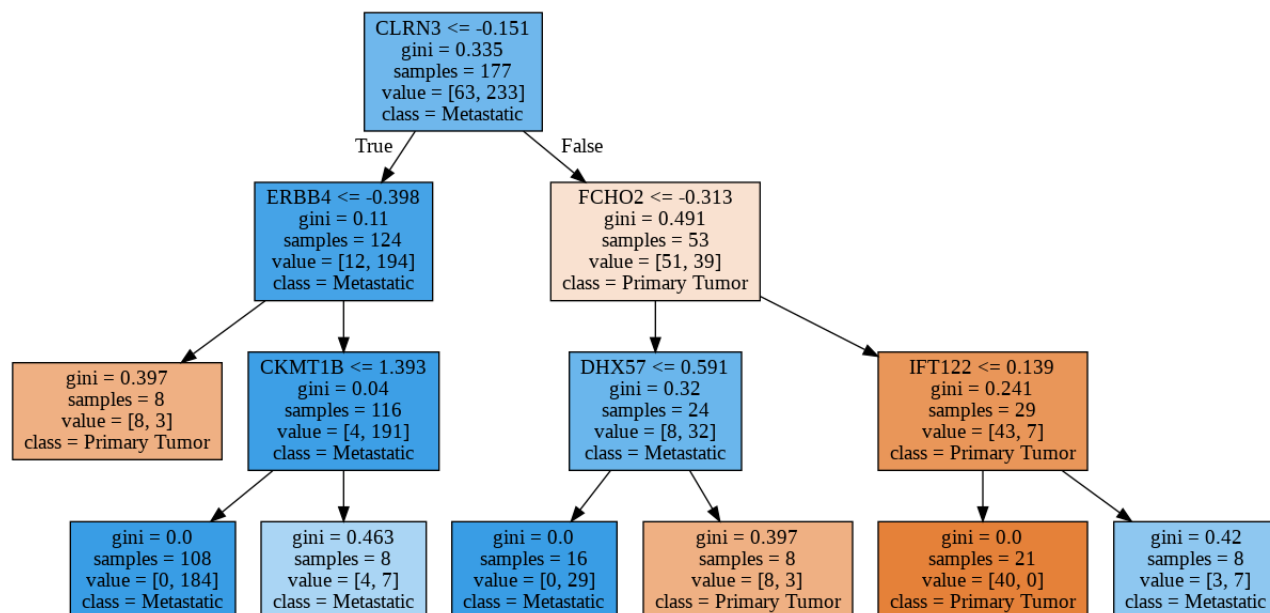
Figure S 10. Biomarker Discovery - Random Forest Estimator 6

Figure S 11. Biomarker Discovery - Random Forest Estimator 7

Figure S 12. Biomarker Discovery - Random Forest Estimator 8

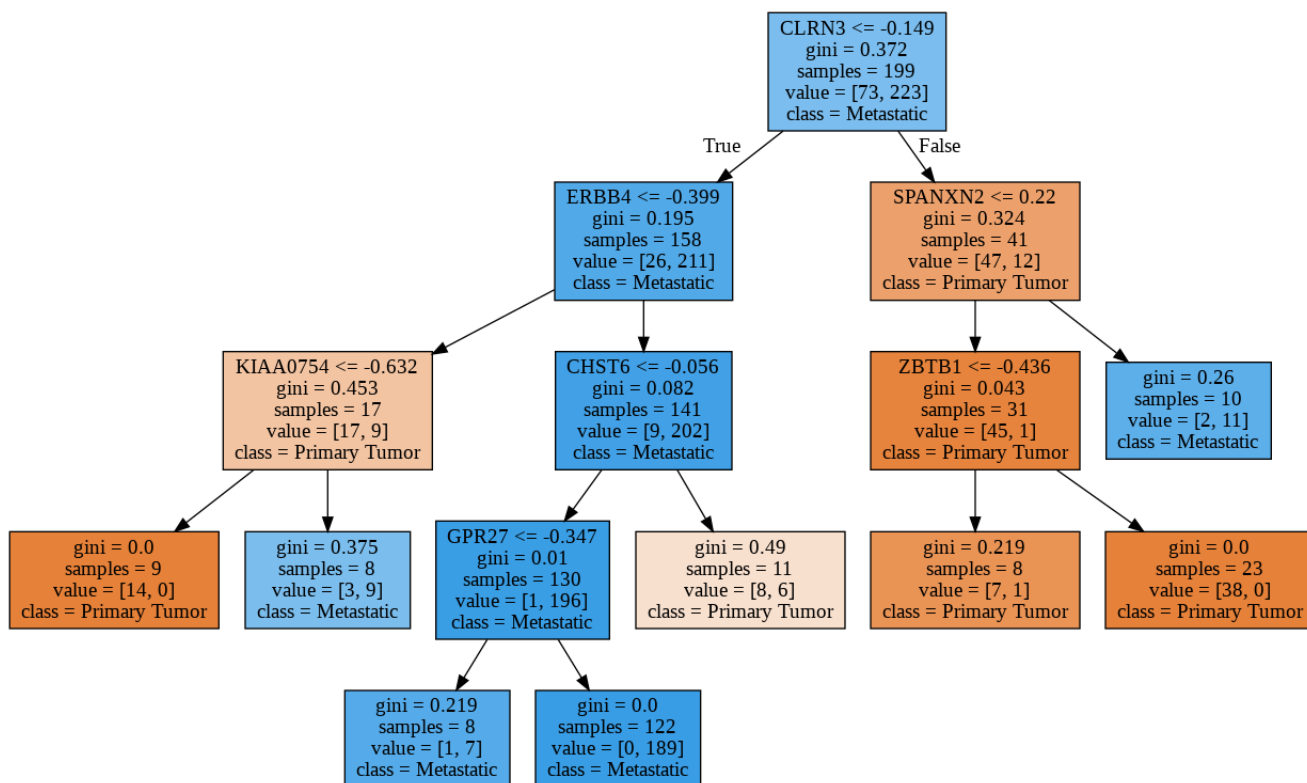**Figure S 13.** Biomarker Discovery - Random Forest Estimator 9

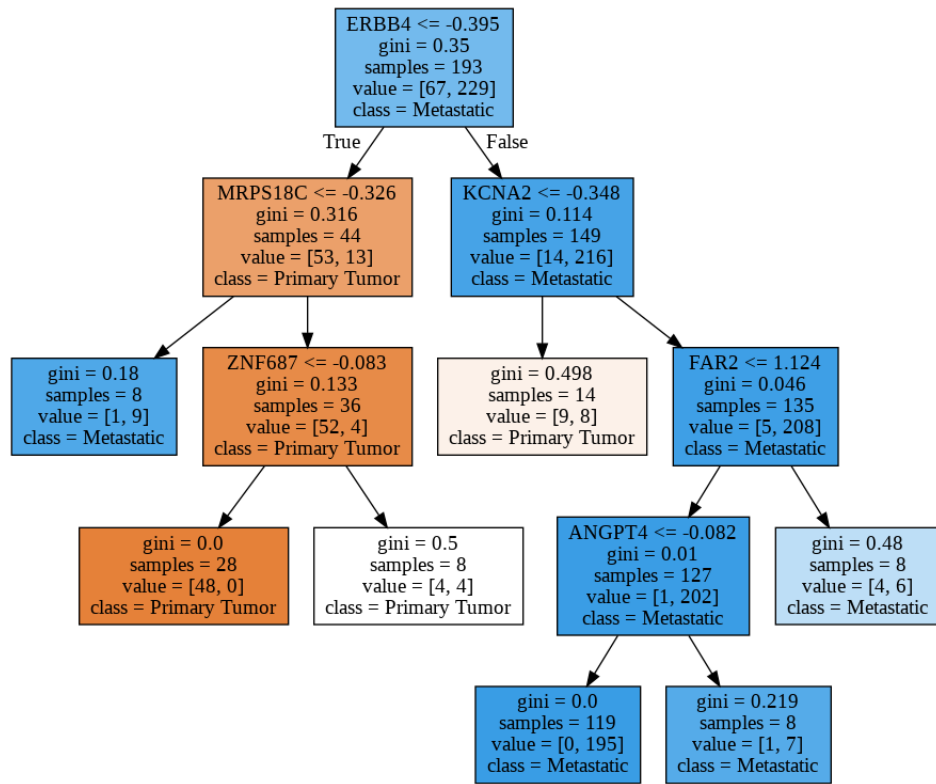**Figure S 14.** Biomarker Discovery - Random Forest Estimator 10
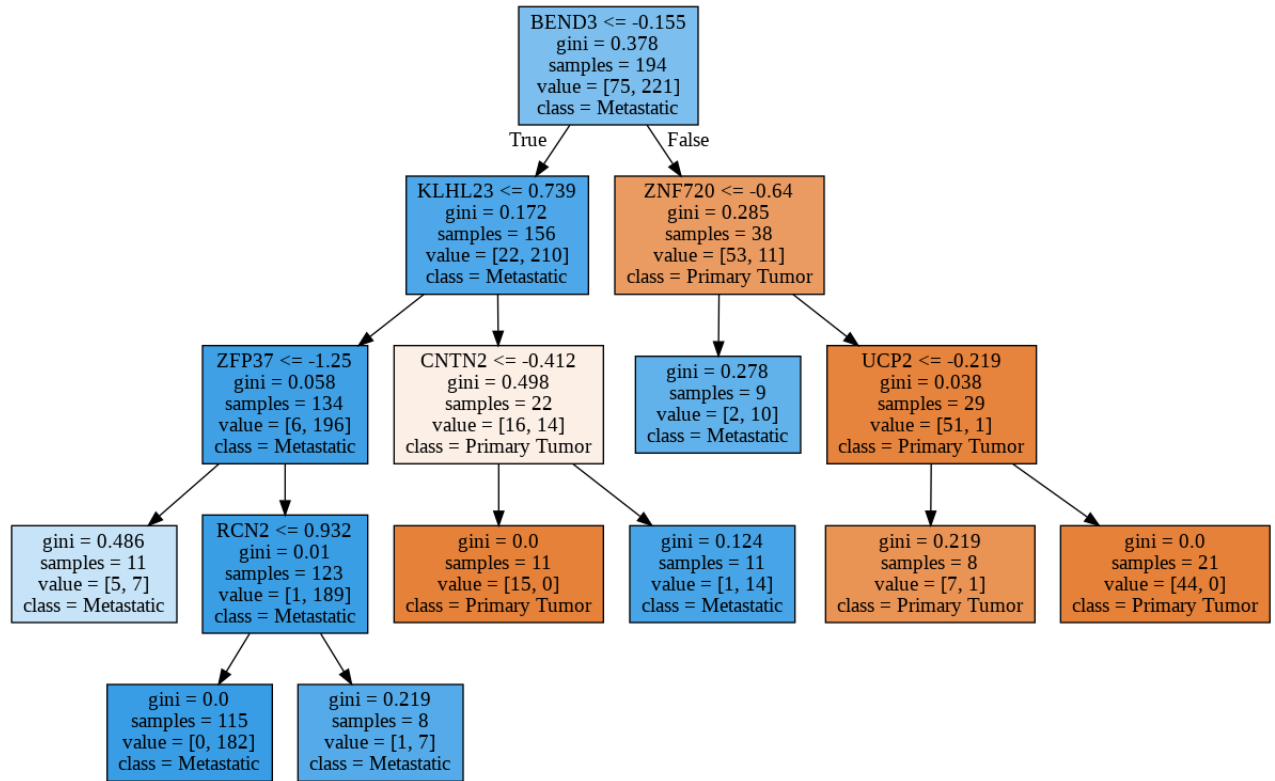

Figure S 15. Biomarker Discovery - Random Forest Estimator 11

Figure S 16. Biomarker Discovery - Random Forest Estimator 12

Figure S 17. Biomarker Discovery - Random Forest Estimator 13

Figure S 18. Biomarker Discovery - Random Forest Estimator 14

Figure S 19. Biomarker Discovery - Random Forest Estimator 15

Figure S 20. Biomarker Discovery - Random Forest Estimator 16

Figure S 21. Biomarker Discovery - Random Forest Estimator 17

Figure S 22. Biomarker Discovery - Random Forest Estimator 18
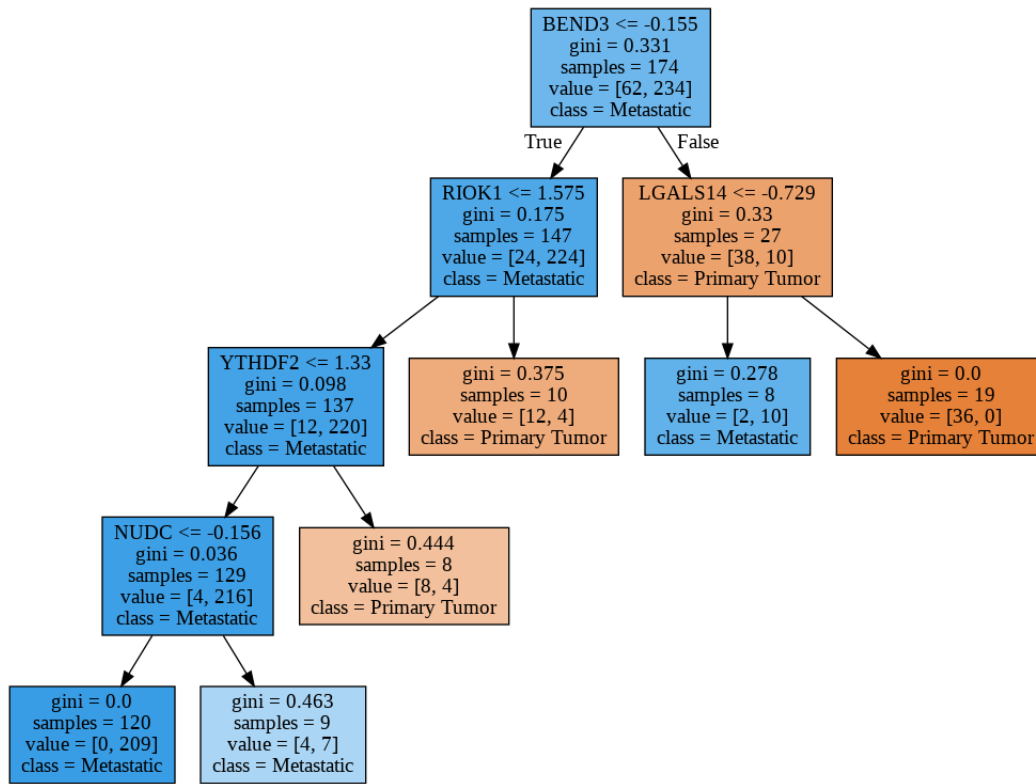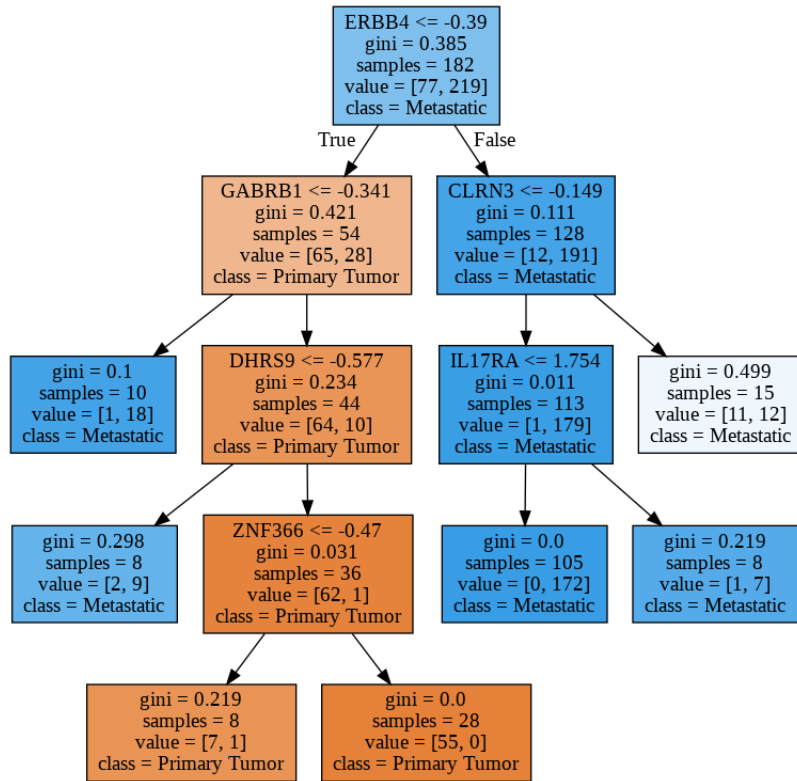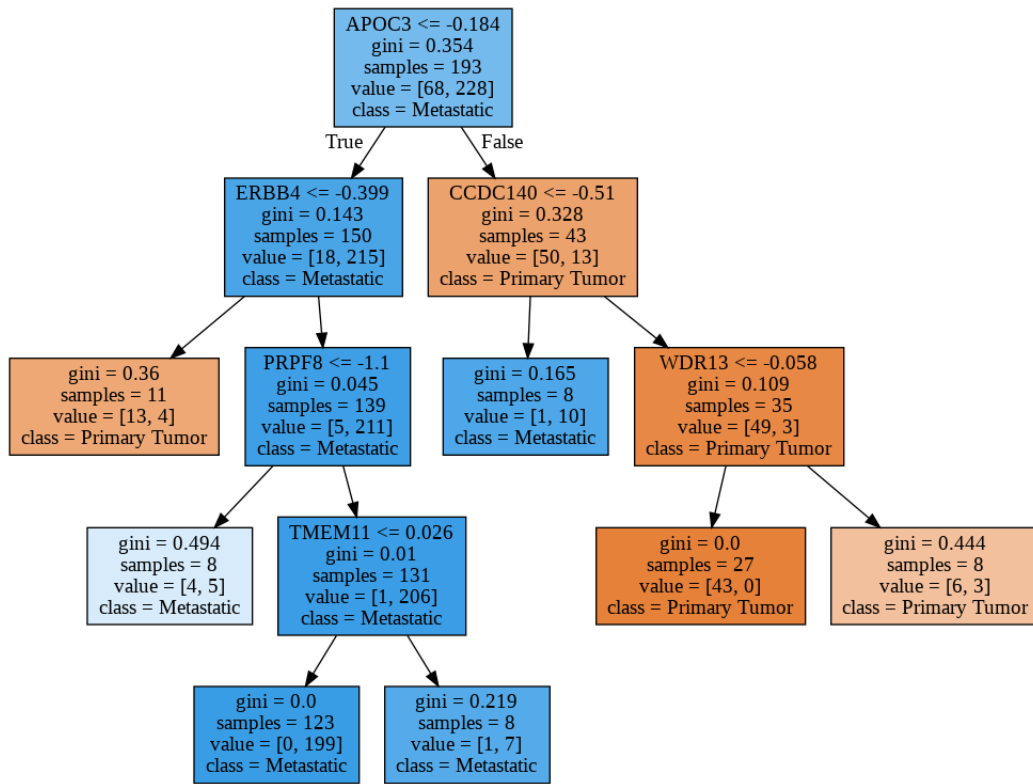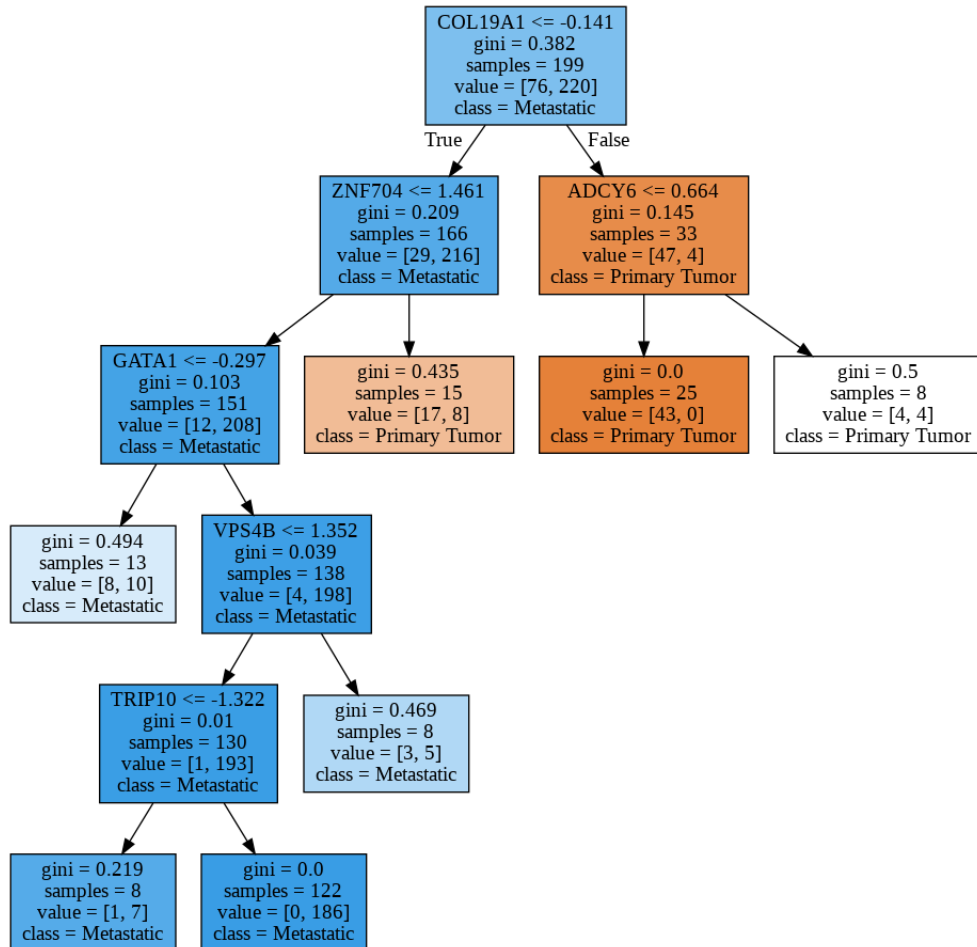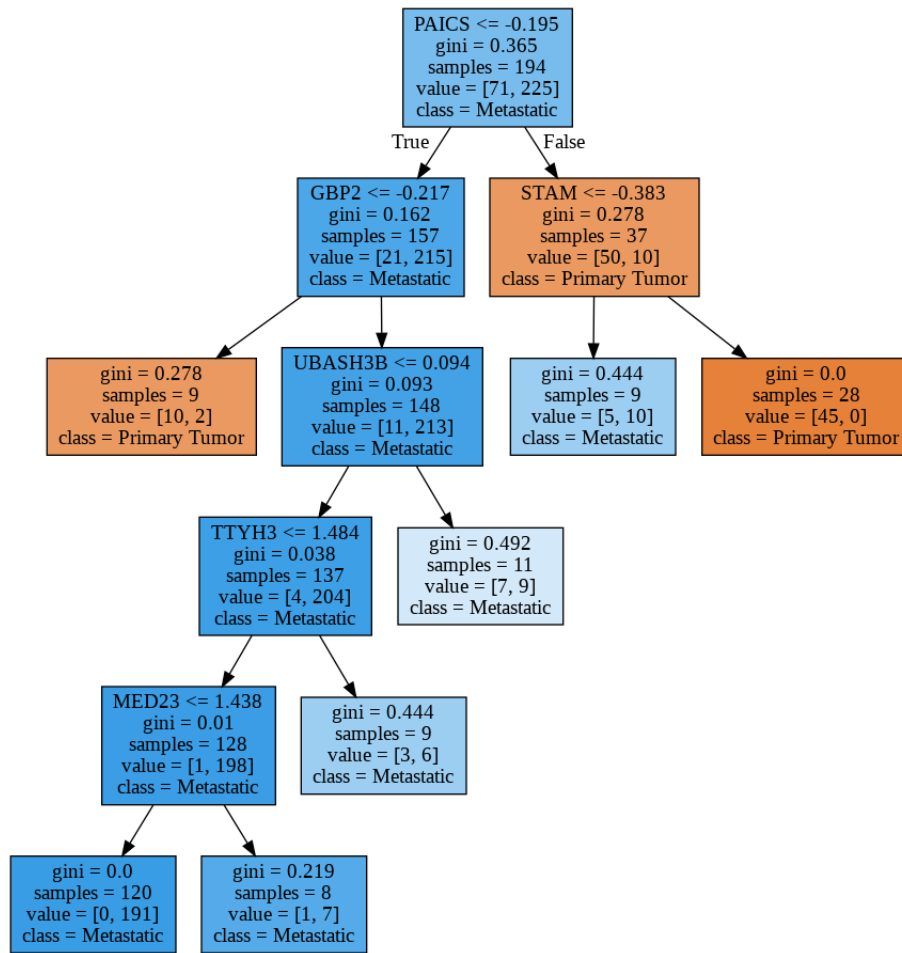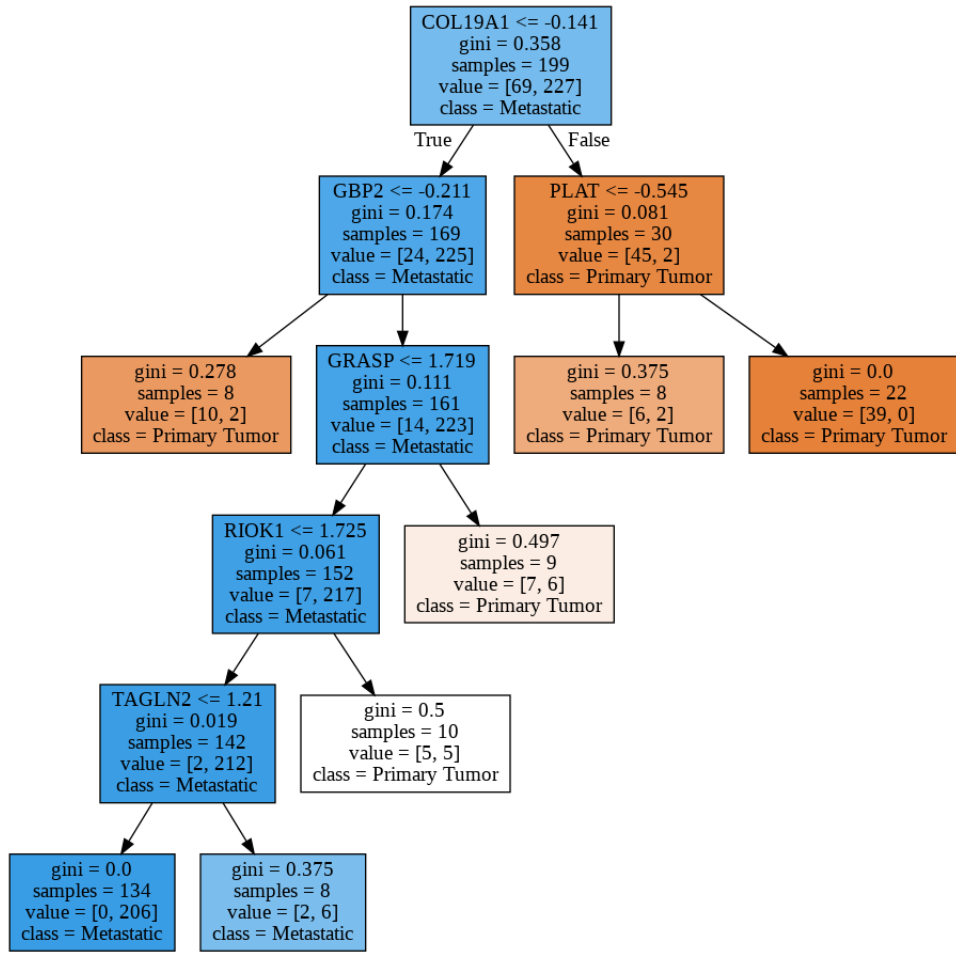
Figure S 23. Biomarker Discovery - Random Forest Estimator 19

Figure S 24. Biomarker Discovery - Random Forest Estimator 20

Figure S 25. Biomarker Discovery - Random Forest Estimator 21

Figure S 26. Biomarker Discovery - Random Forest Estimator 22

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Figure S 27. Biomarker Discovery - Random Forest Estimator 23

Figure S 28. Biomarker Discovery - Random Forest Estimator 24

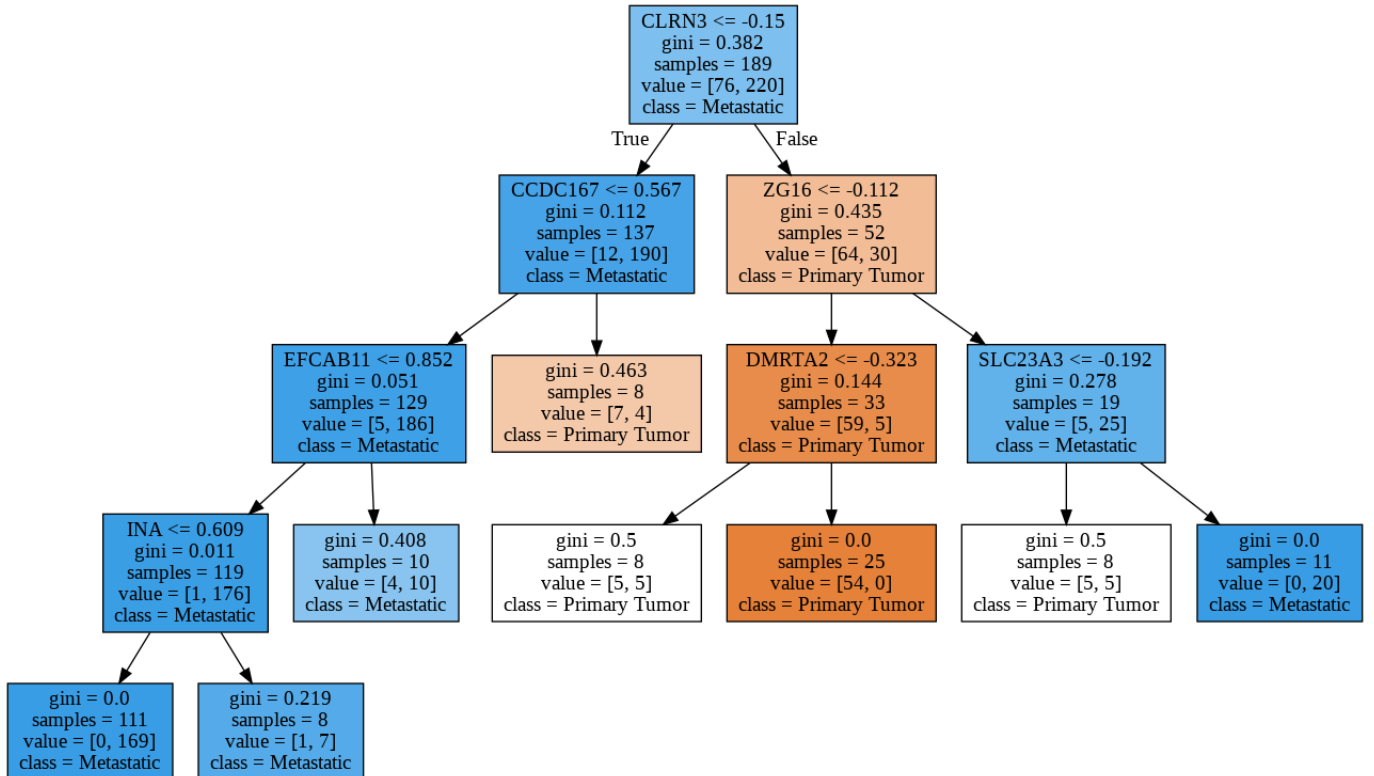**Figure S 29.** Biomarker Discovery - Random Forest Estimator 25

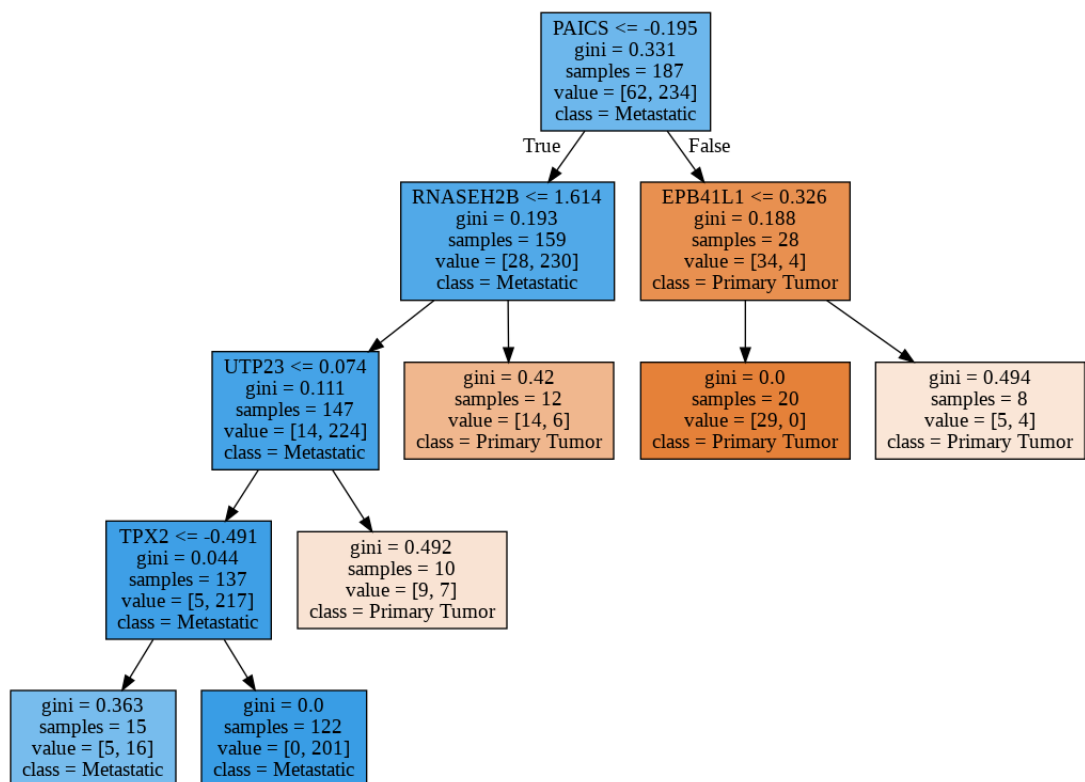**Figure S 30.** Biomarker Discovery - Random Forest Estimator 26

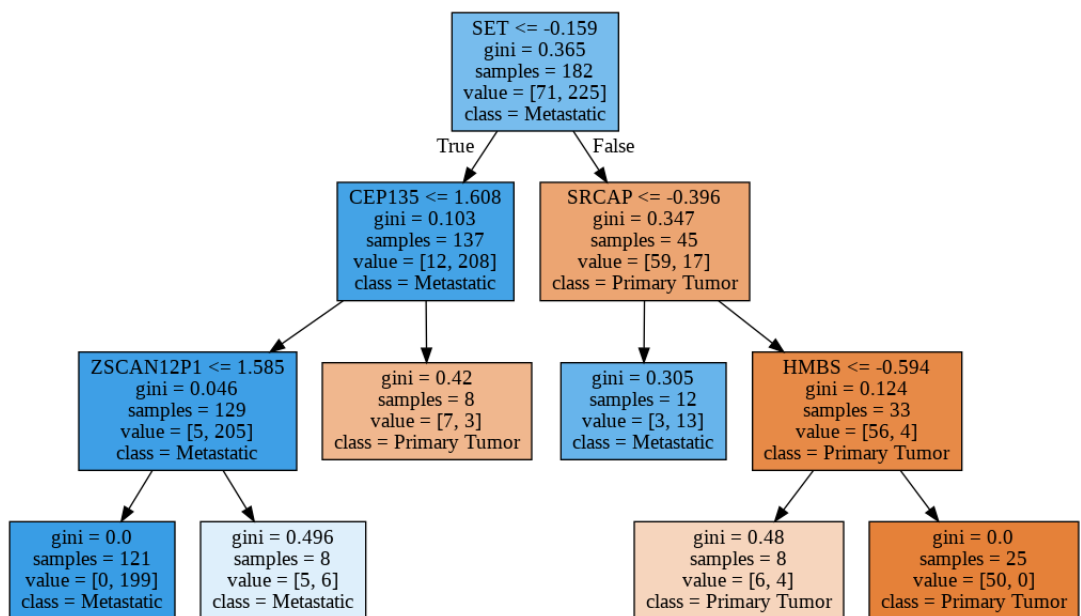**Figure S 31.** Biomarker Discovery - Random Forest Estimator 27

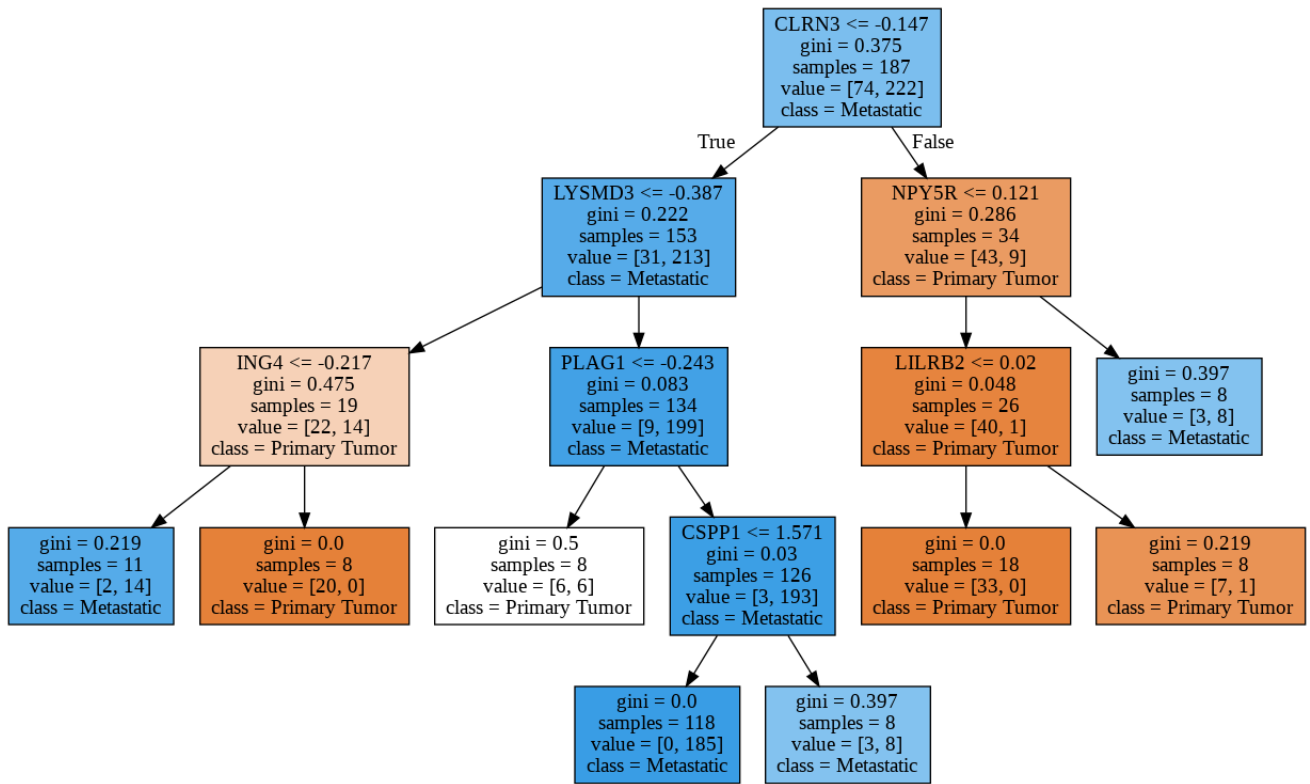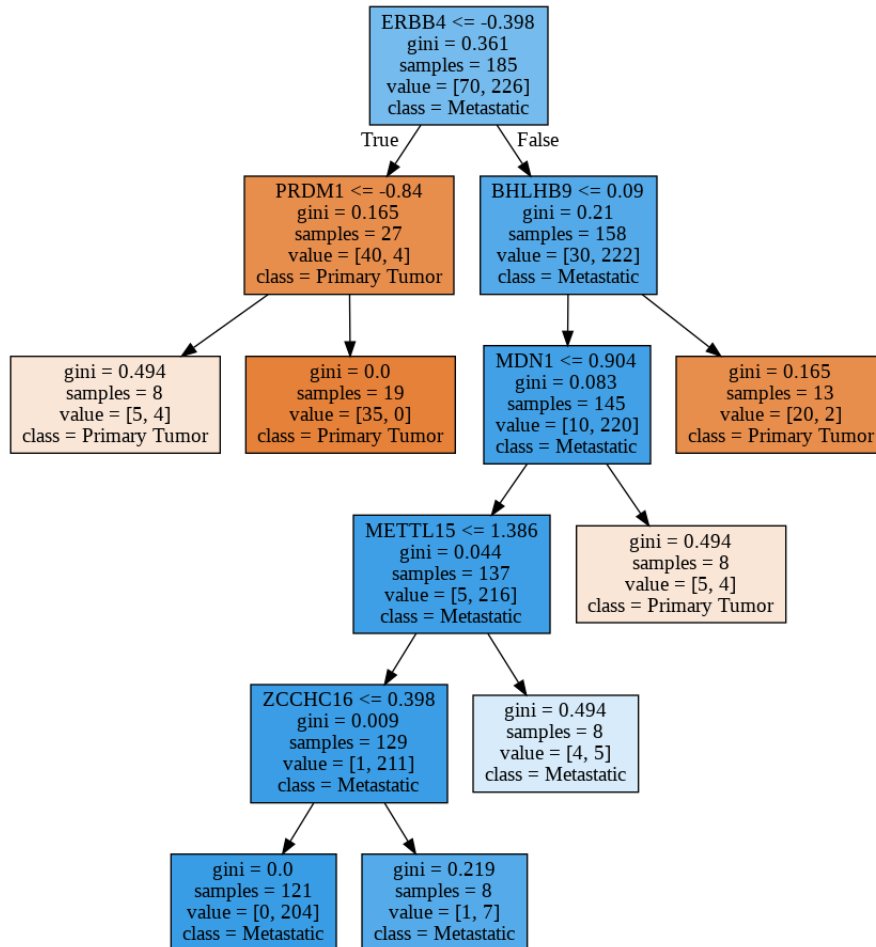**Figure S 32.** Biomarker Discovery - Random Forest Estimator 28

Figure S 33. Biomarker Discovery - Random Forest Estimator 29

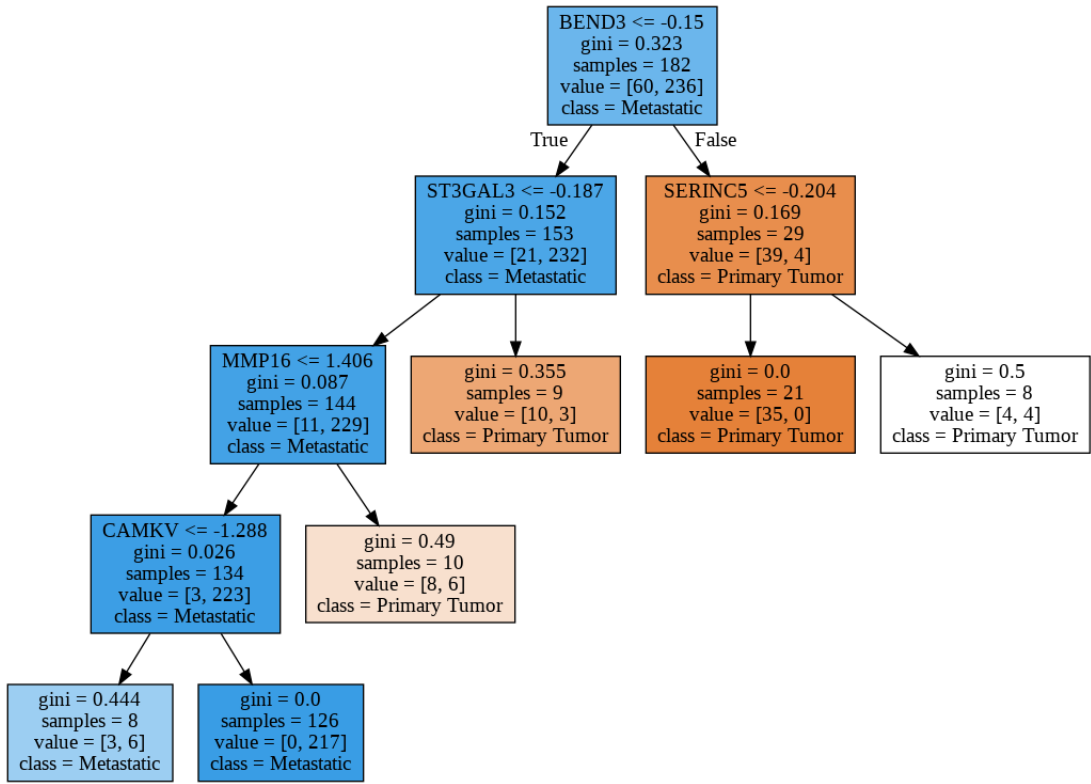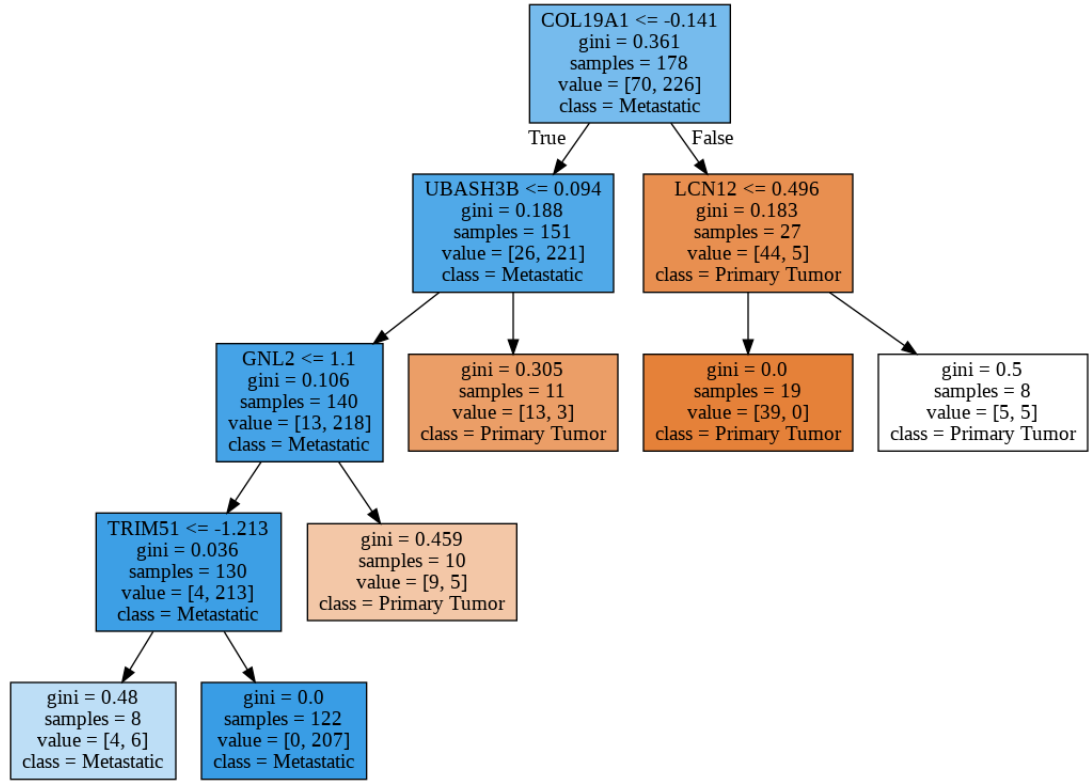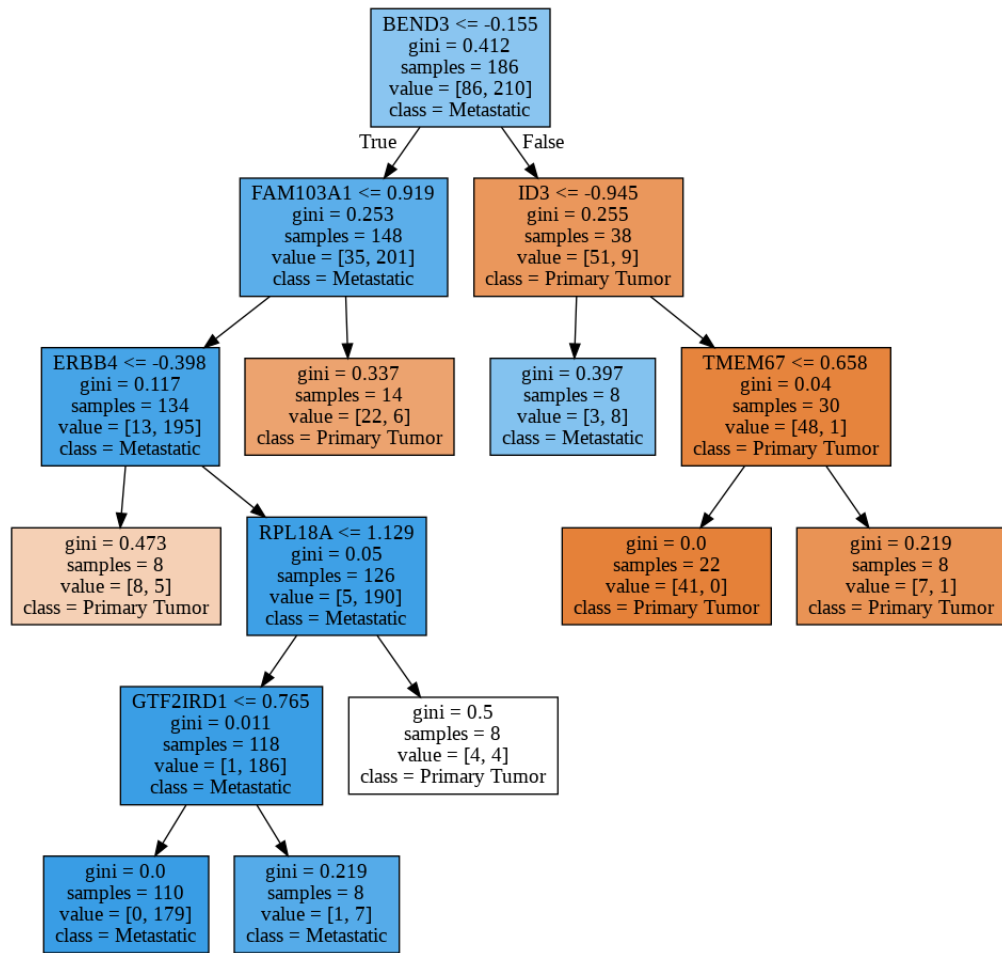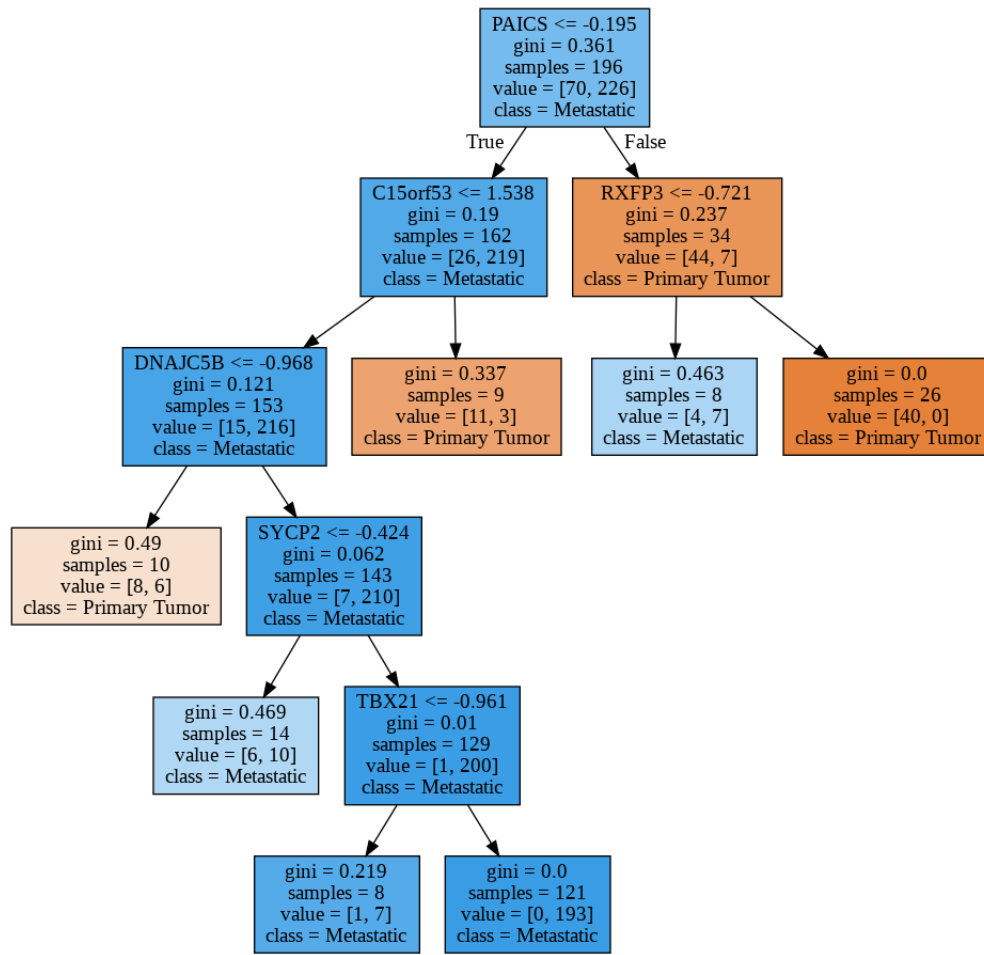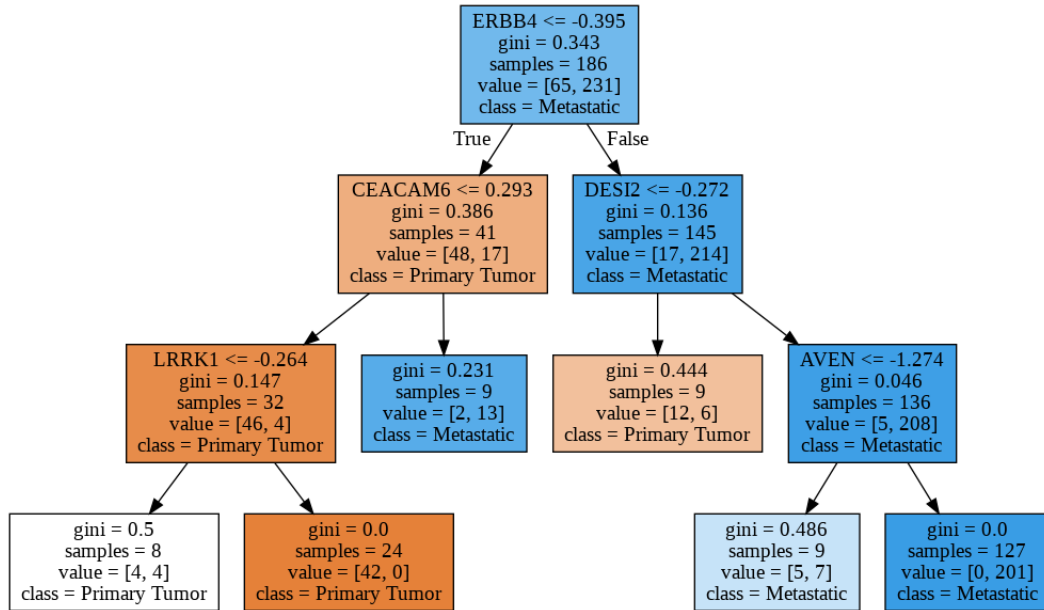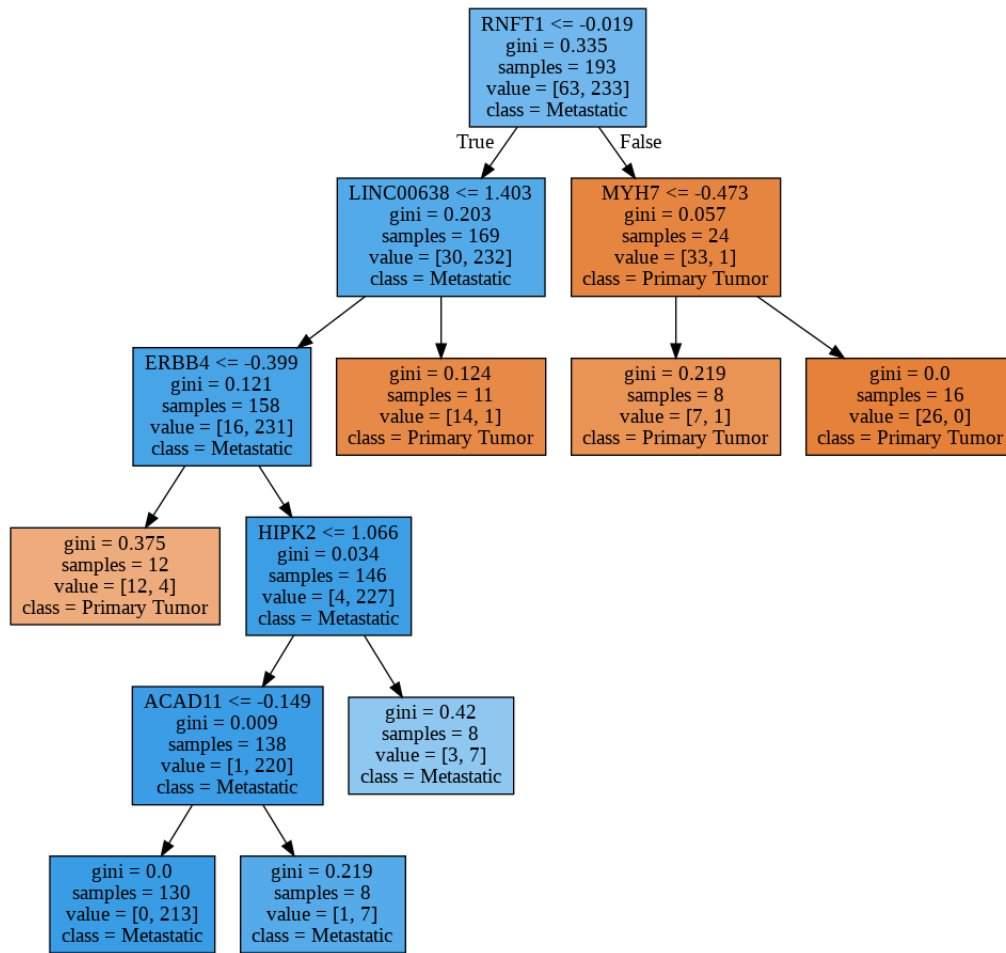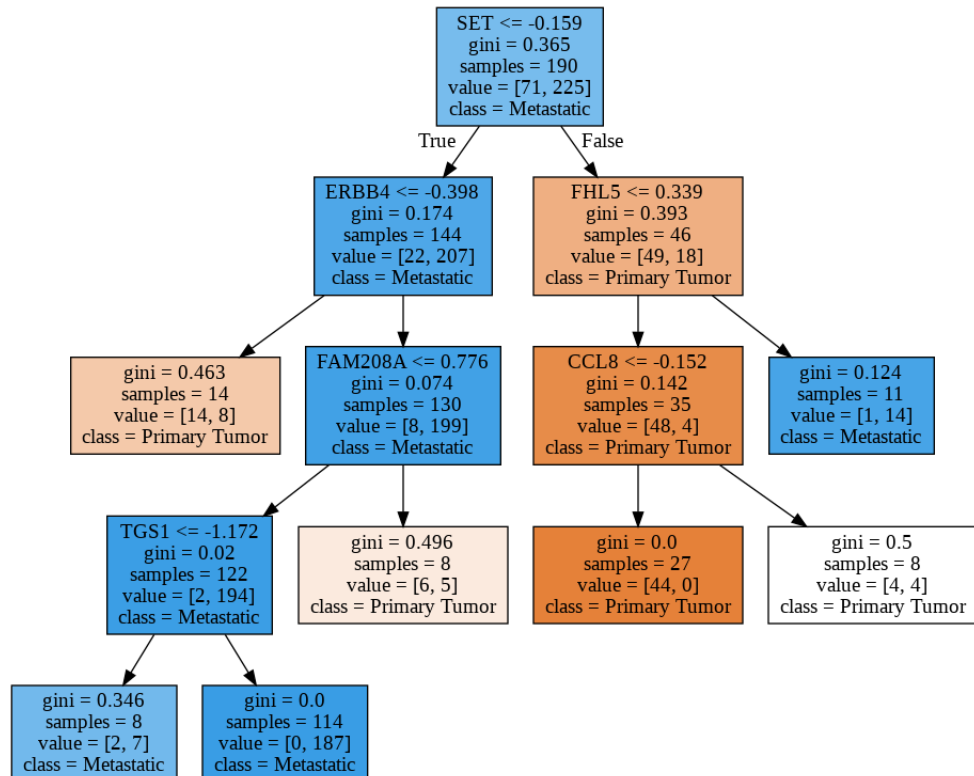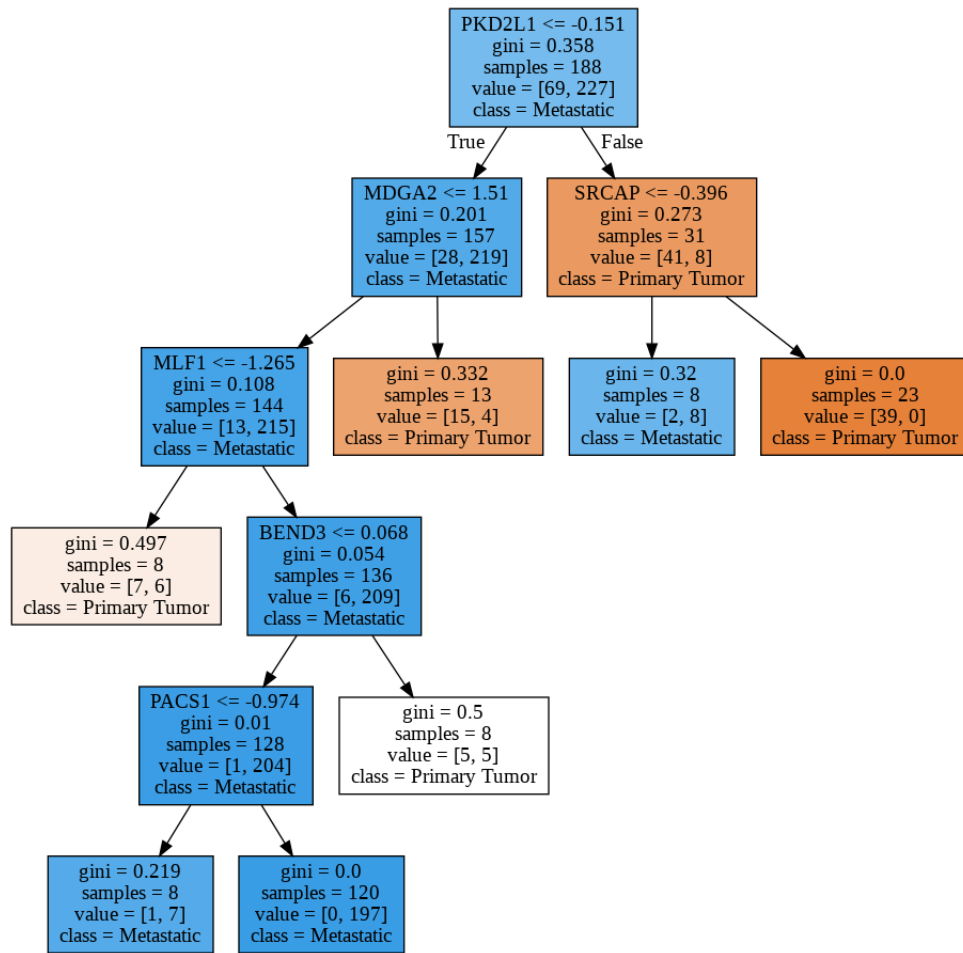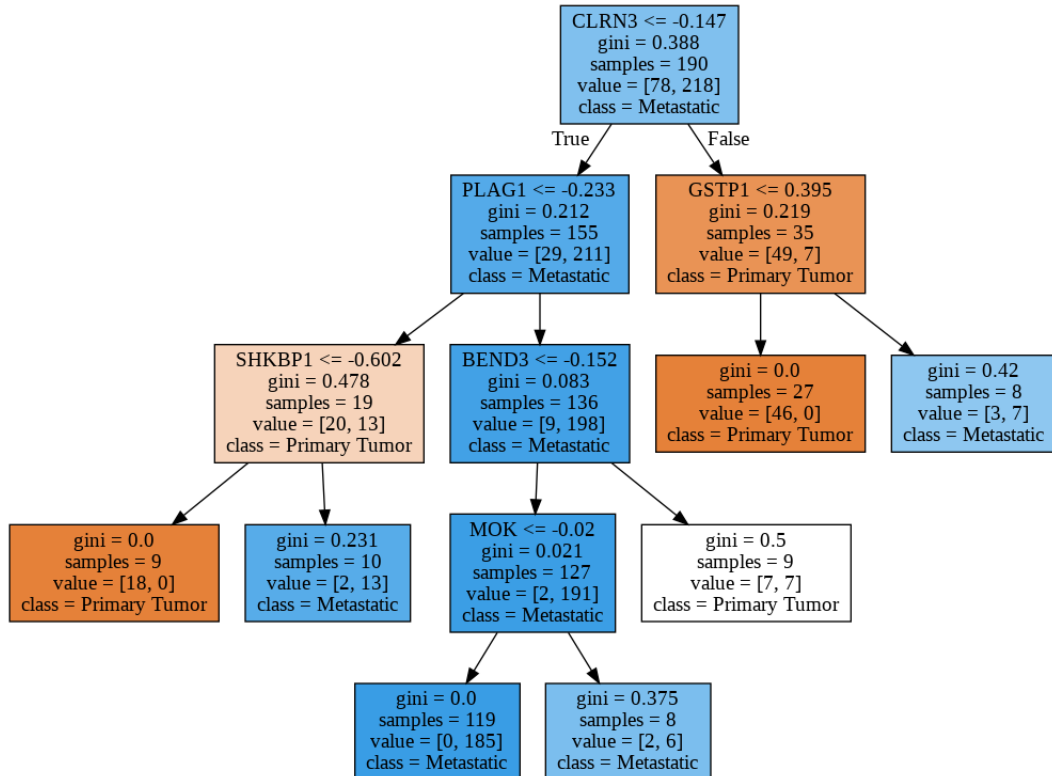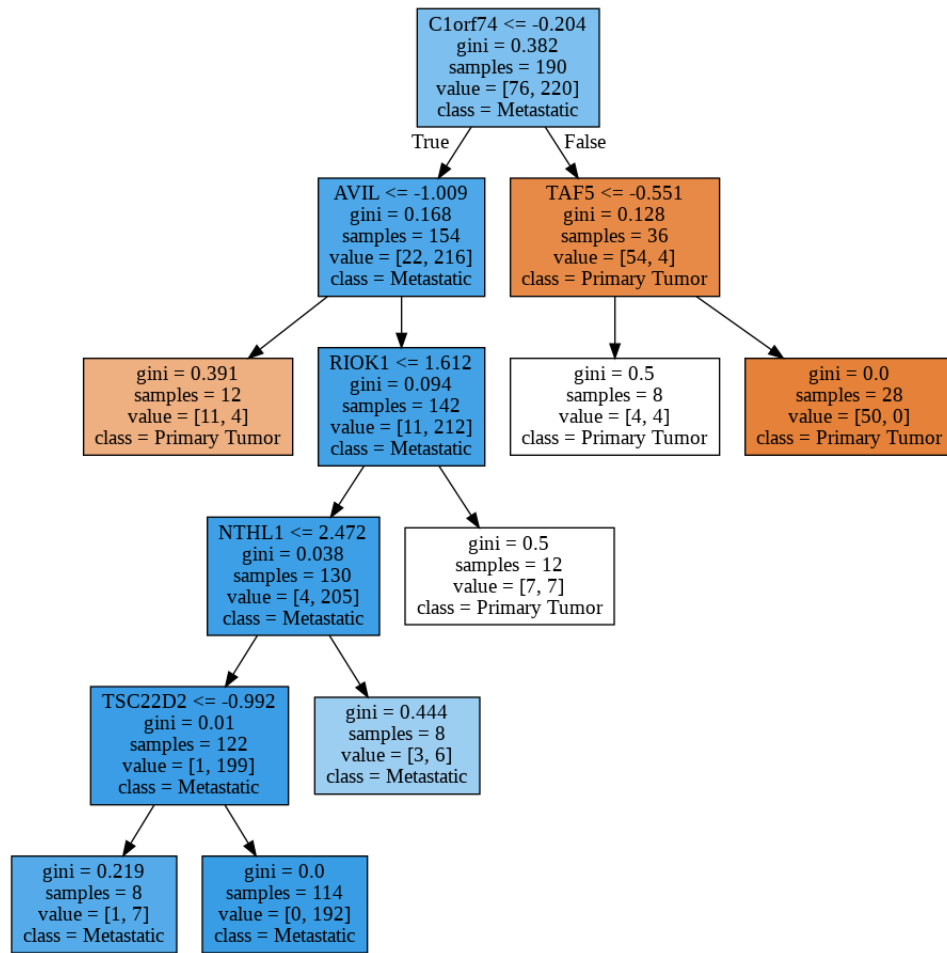**Figure S 34.** Biomarker Discovery - Random Forest Estimator 30
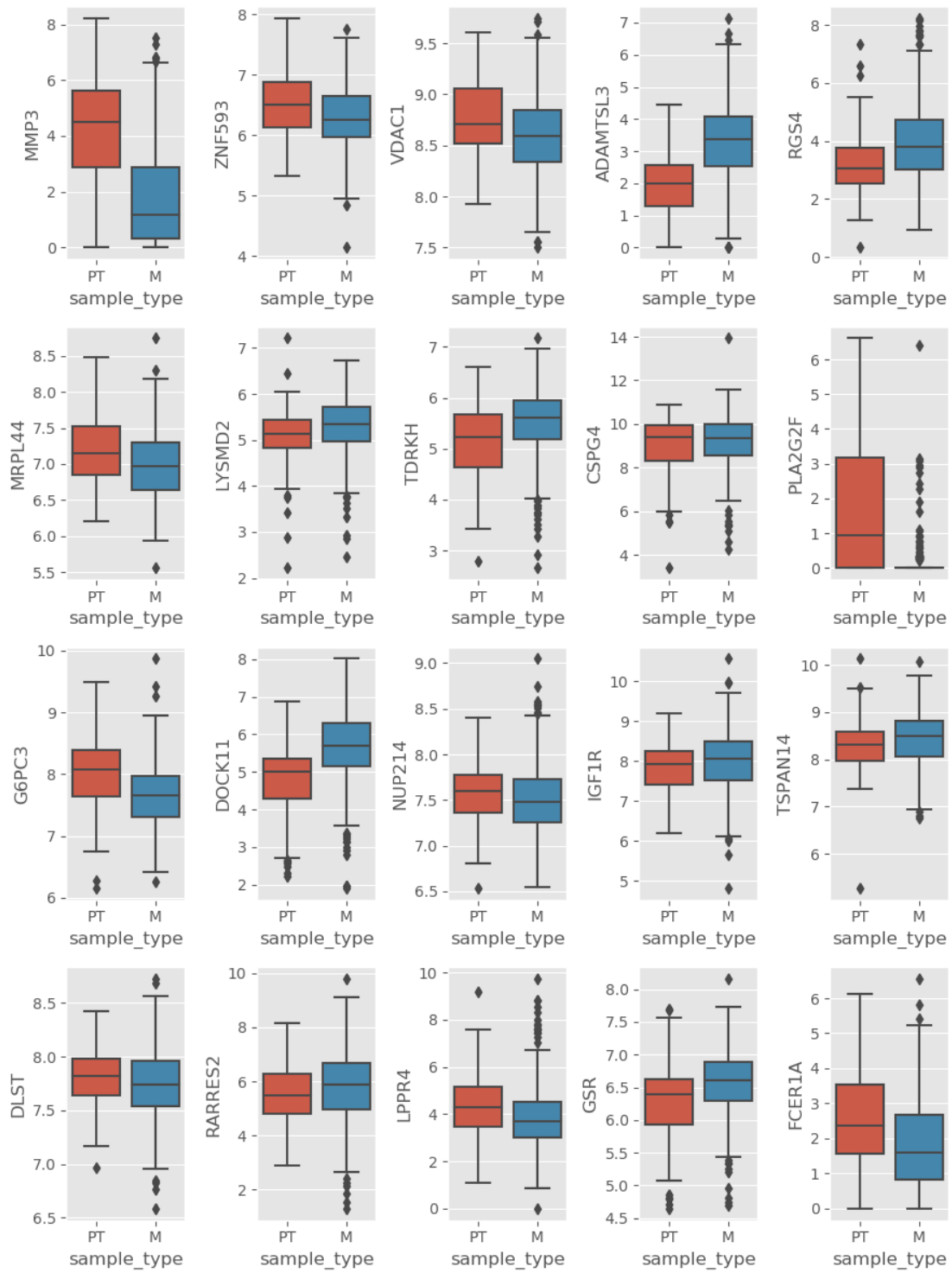
Figure S 35. Box Plots of Top 21 - 40 Gene Expressions.
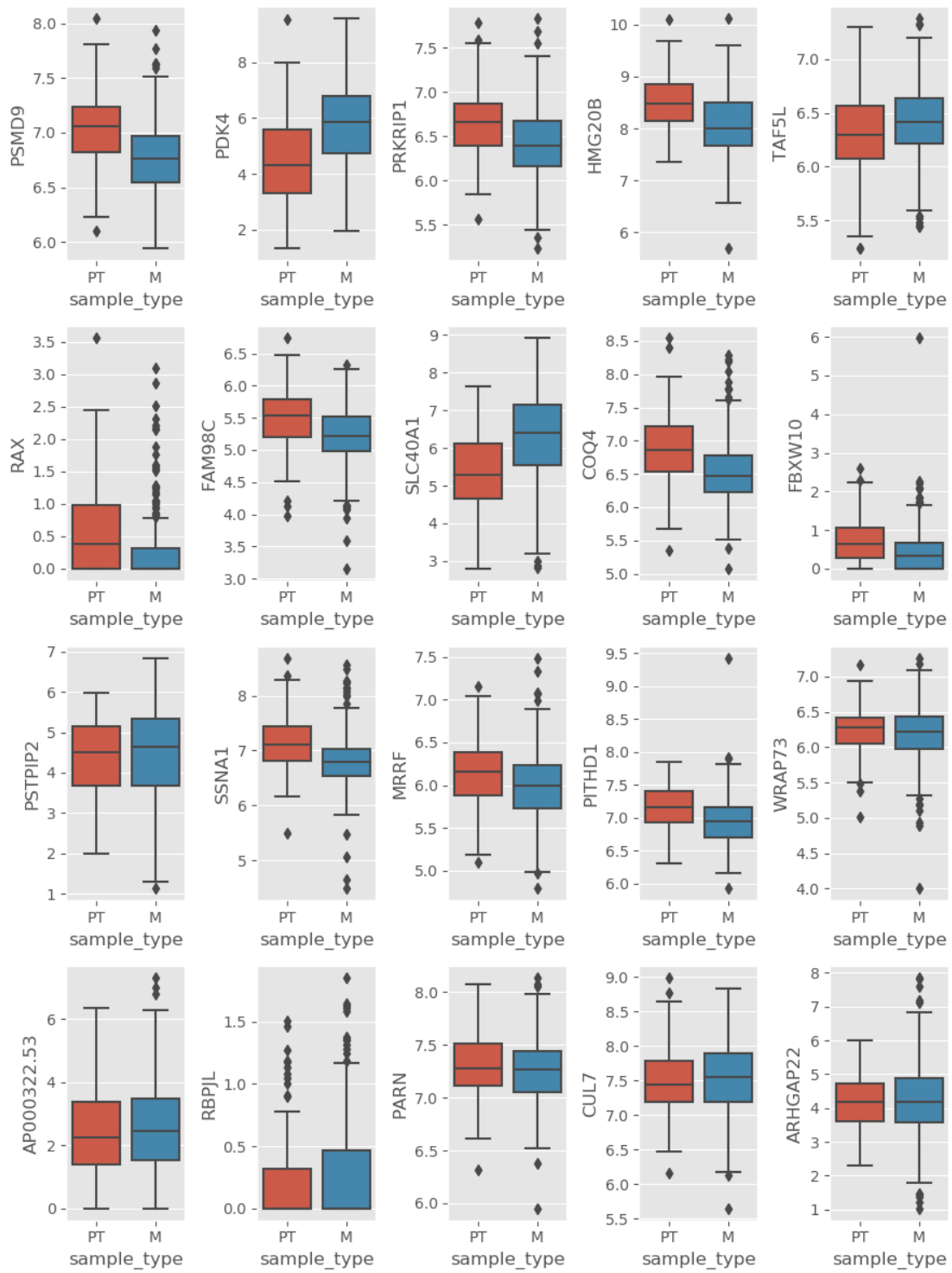
Figure S 36. Box Plots of Top 41 - 60 Gene Expressions.
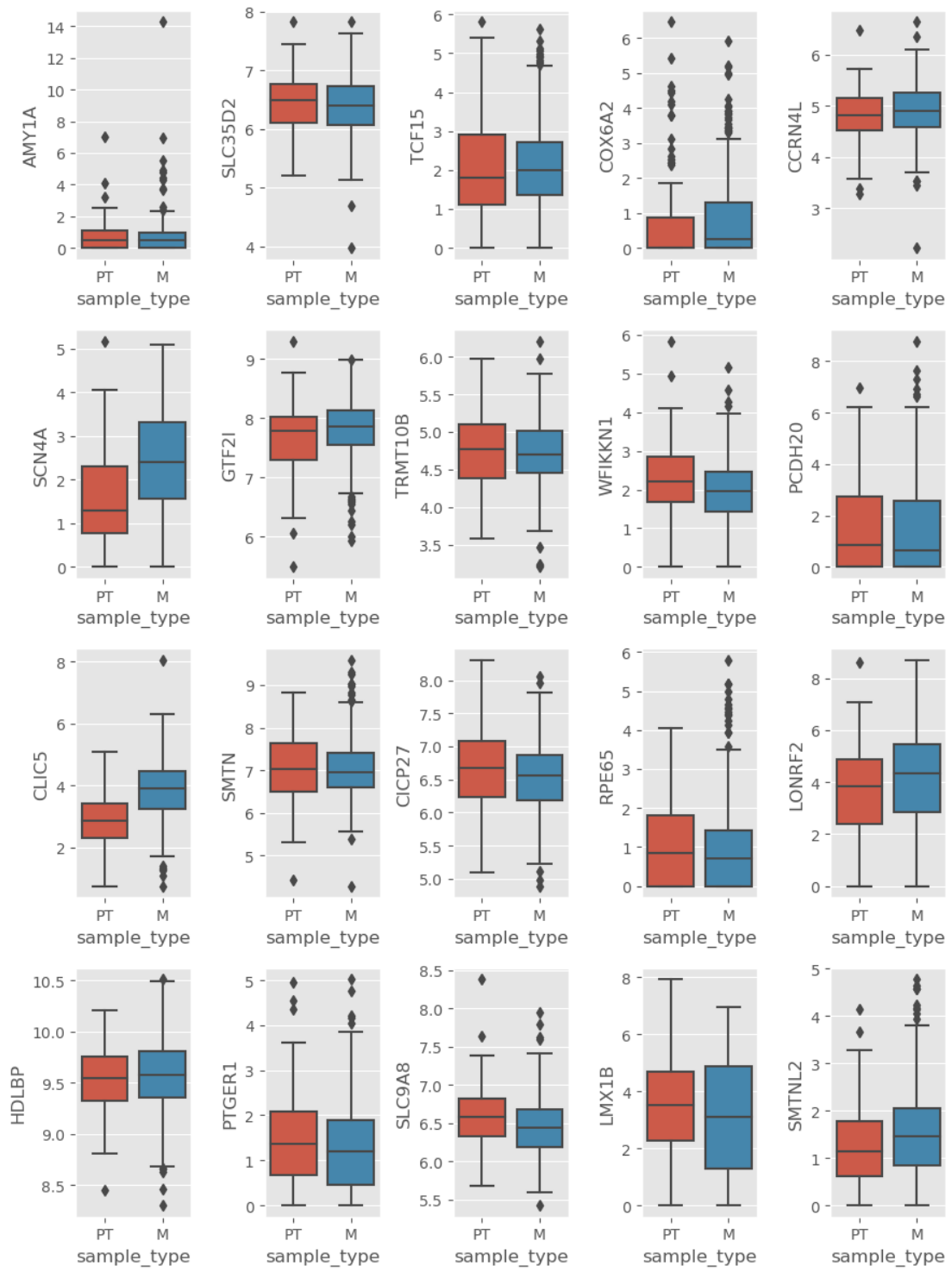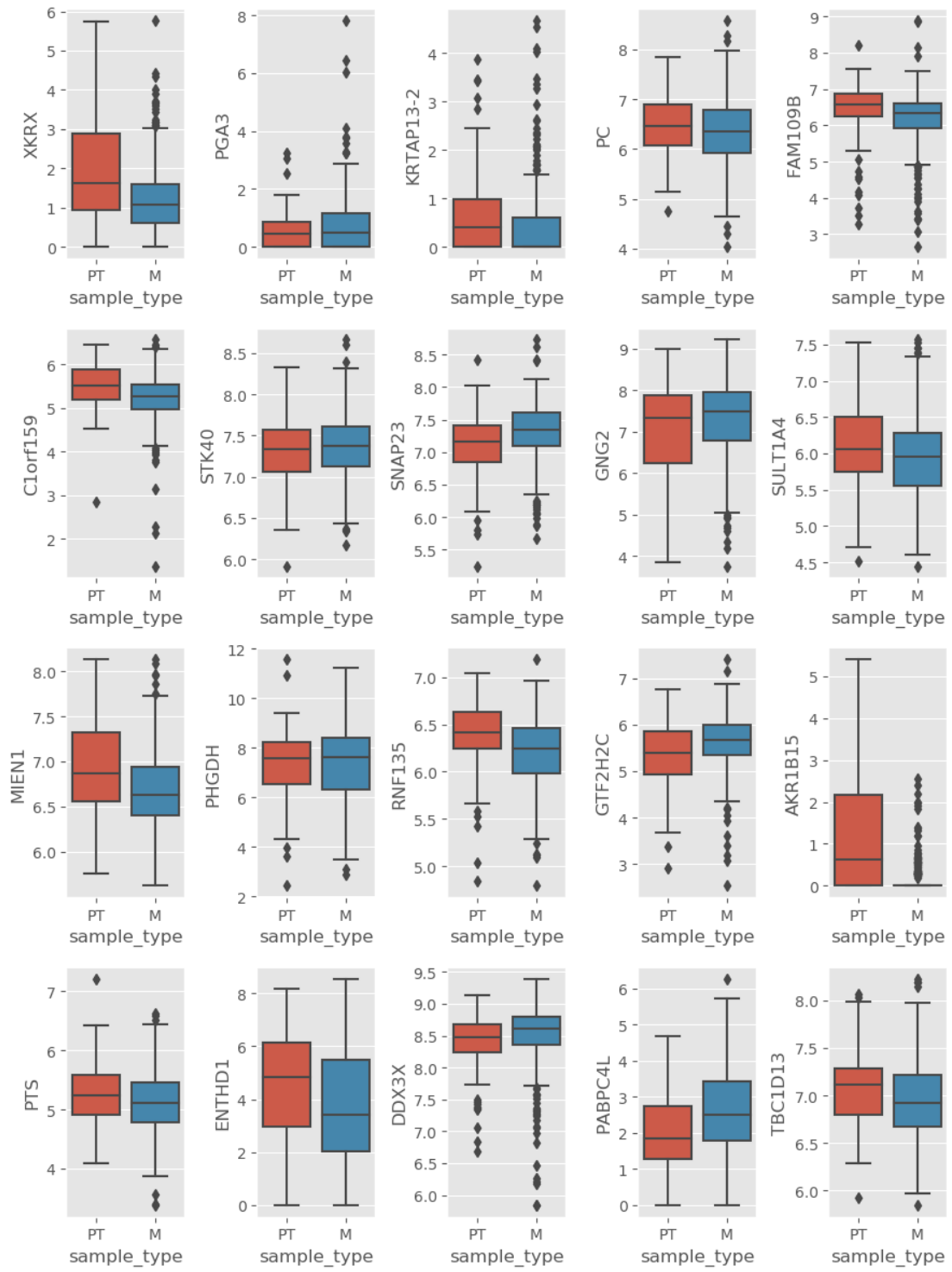
Figure S 37. Box Plots of Top 61 - 80 Gene Expressions.
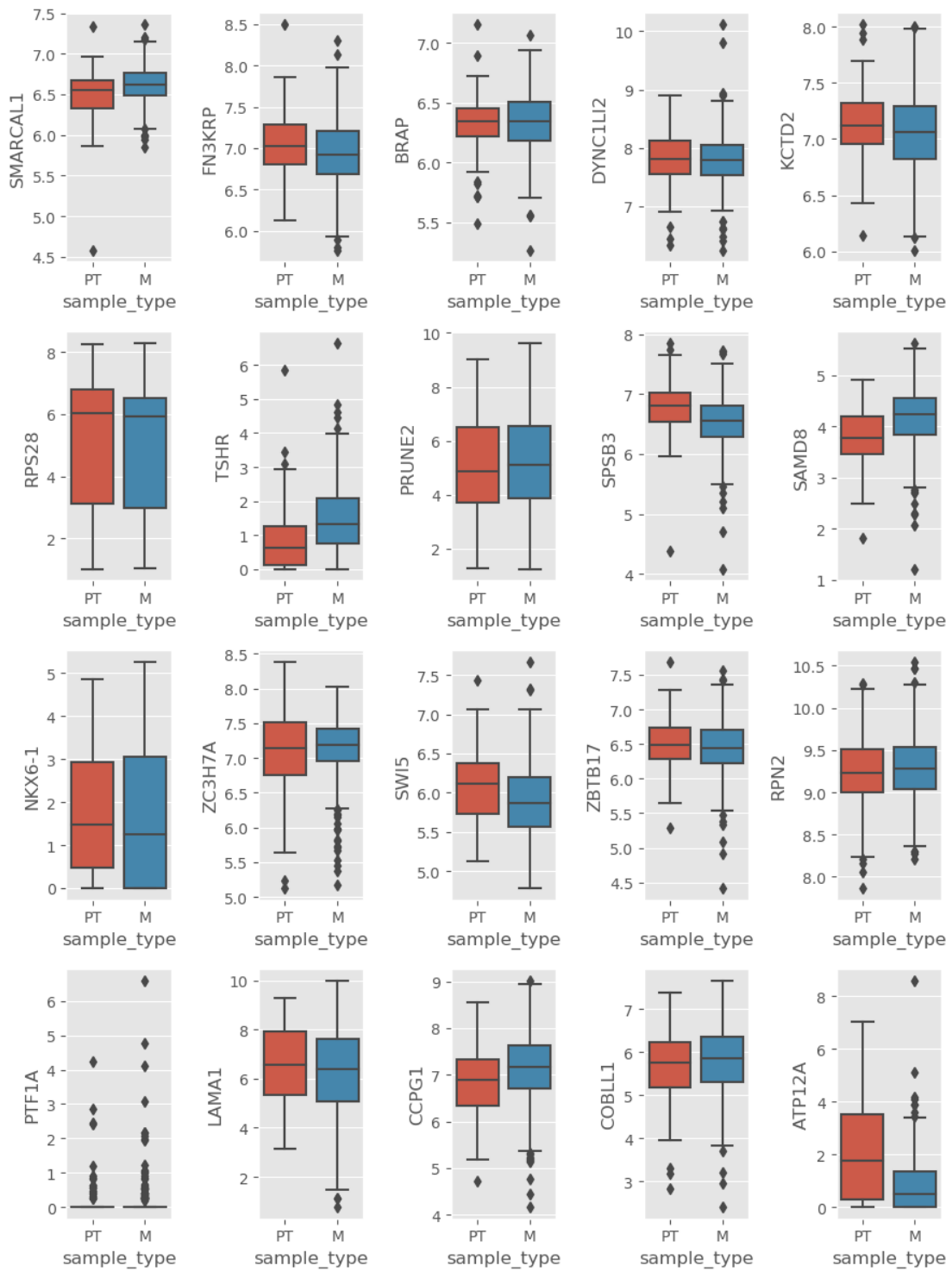
Figure S 38. Box Plots of Top 81 - 100 Gene Expressions.
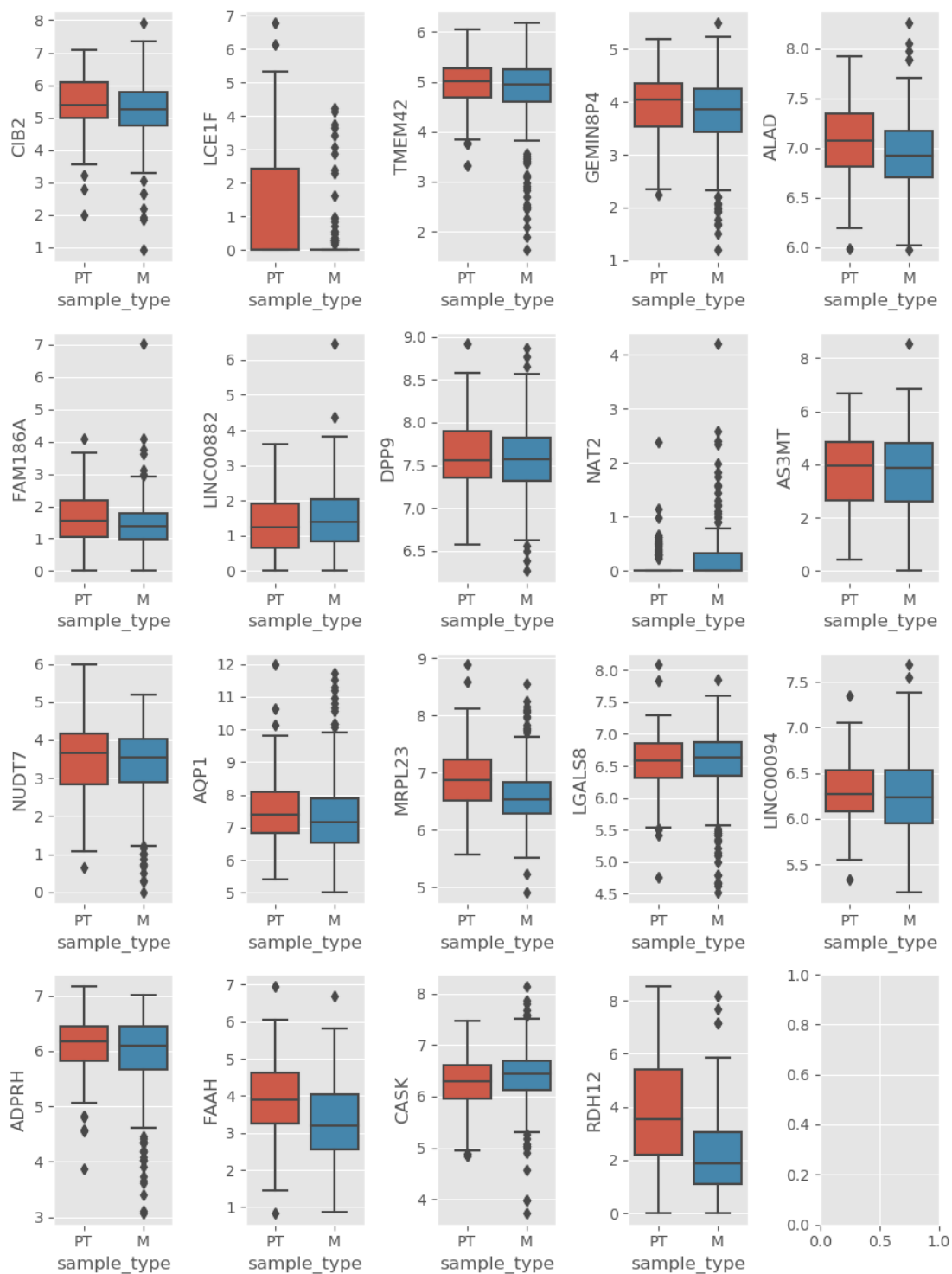
Figure S 39. Box Plots of Top 81 - 100 Gene Expressions.

Figure S 40. Box Plots of Top 121 - 139 Gene Expressions.

Model	Average Expected Loss	Average Bias	Average Variance
RF-RF	0.0687	0.0569	0.0319
RF-LR	0.0933	0.0894	0.0311
RF-SVM-Sig	0.1202	0.1300	0.0275
RF-PPI-NB	0.1241	0.1219	0.0257
RF-NB	0.1378	0.1220	0.0704
RF-SVM-L	0.1407	0.1382	0.0069
RF-SVM-RB	0.1419	0.1382	0.0290
RF-PPI-LR	0.1423	0.1463	0.0149
RF-PPI-SVM-L	0.1463	0.1463	0.0295
RF-PPI-SVM-Sig	0.1951	0.2033	0.0100

Table S 1. Bias Variance Decomposition of the models

Model Name	F1	Accuracy	AUC
Ensemble Model with Soft Voting	90.60	91.05	0.9861

Table S 2. Model Performance (Validation Dataset) of Ensemble Model with Soft Voting