

Supplementary Figures

Jörn Bethune

June 28, 2016

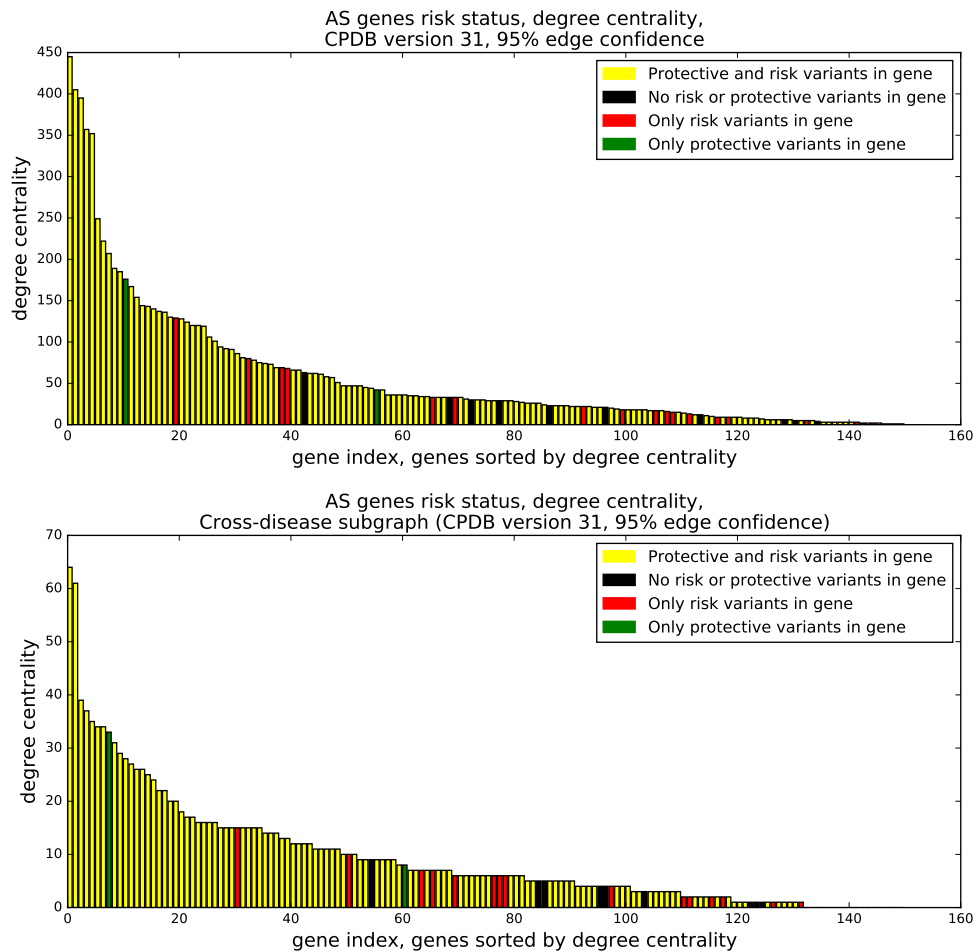


Figure 1: **Top:** Distribution of node *degree* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *degree* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

Both: The colors of the bars indicate the risk status of all minor variants in the study population[1] that a DNA-binding element interacts with.

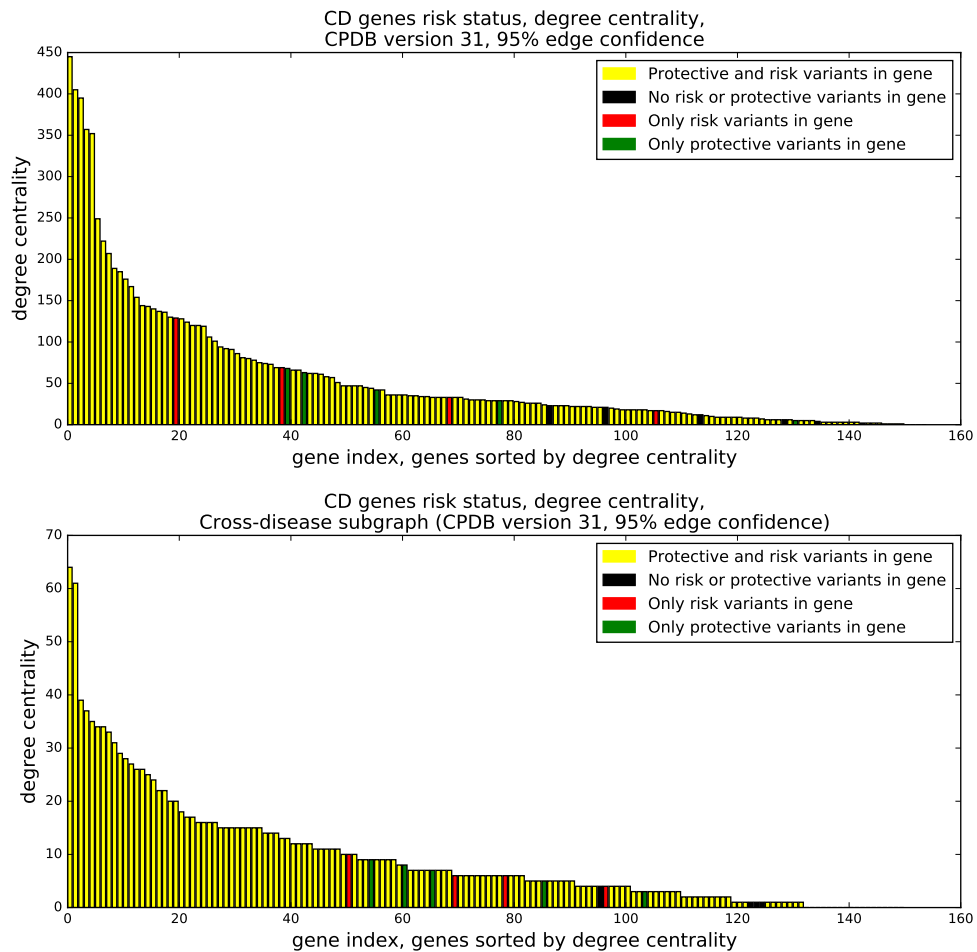


Figure 2: **Top:** Distribution of node *degree* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *degree* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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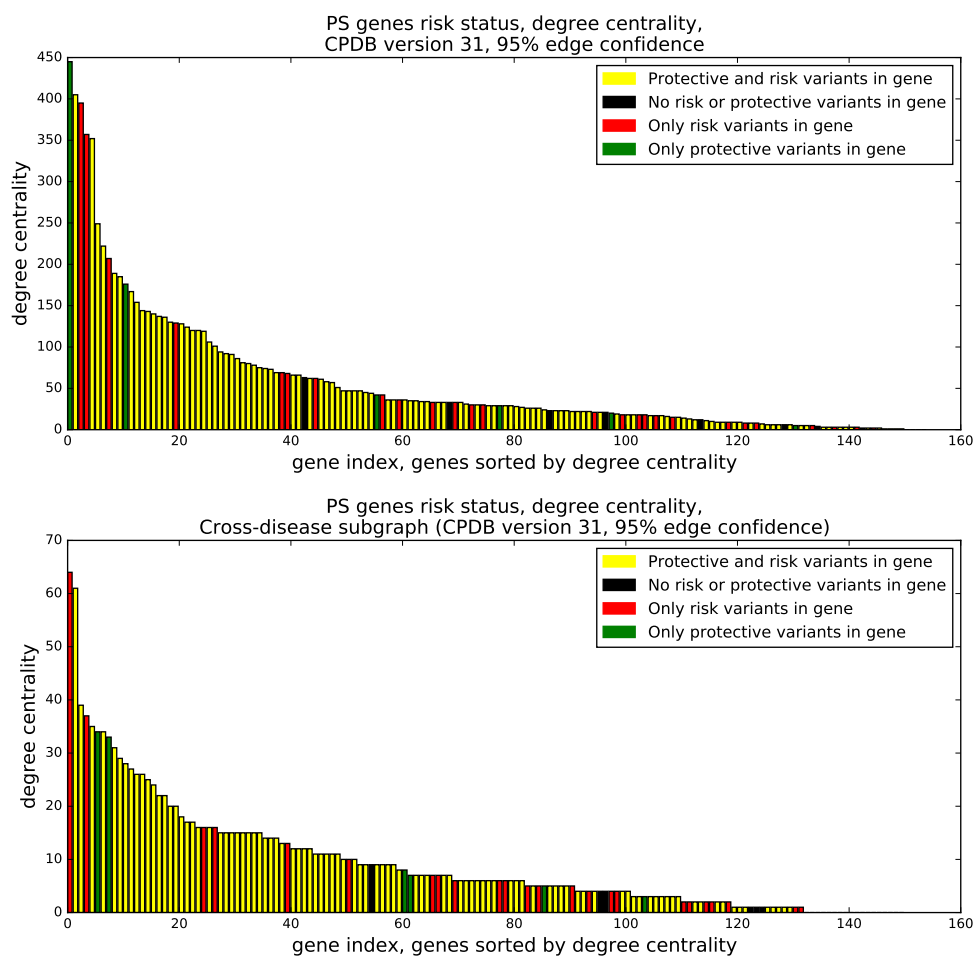


Figure 3: **Top:** Distribution of node *degree* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *degree* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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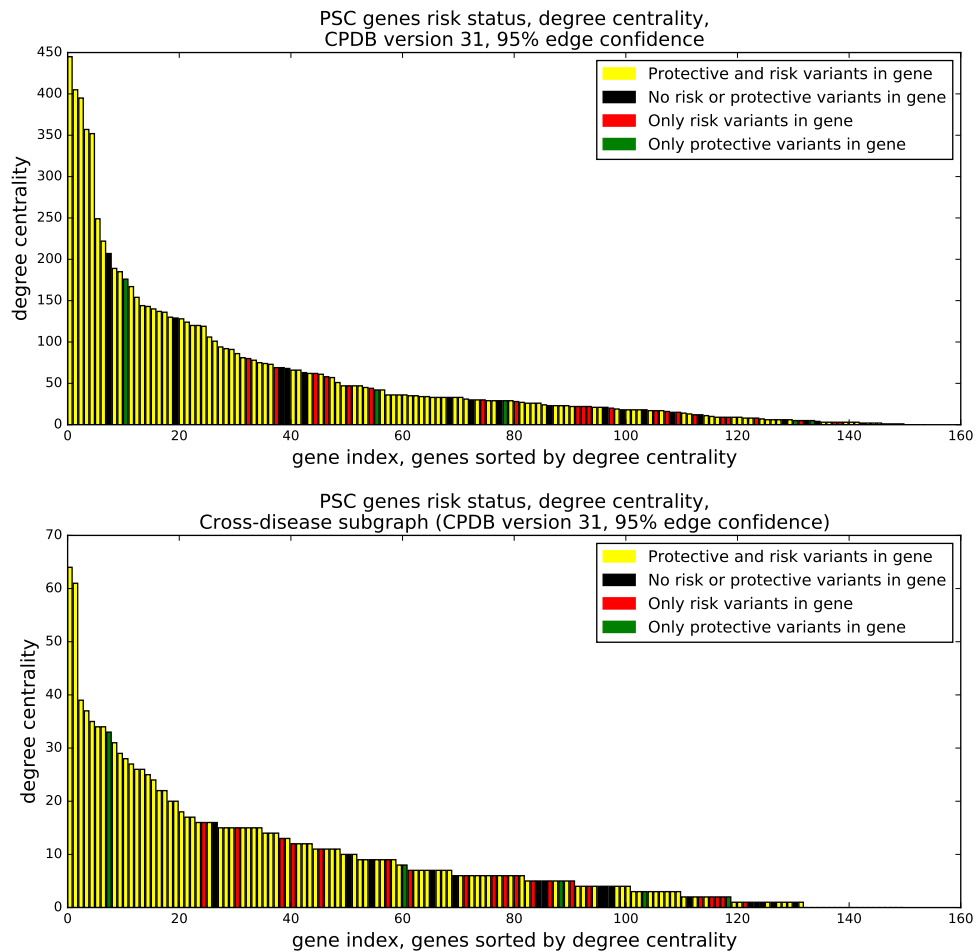


Figure 4: **Top:** Distribution of node *degree* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *degree* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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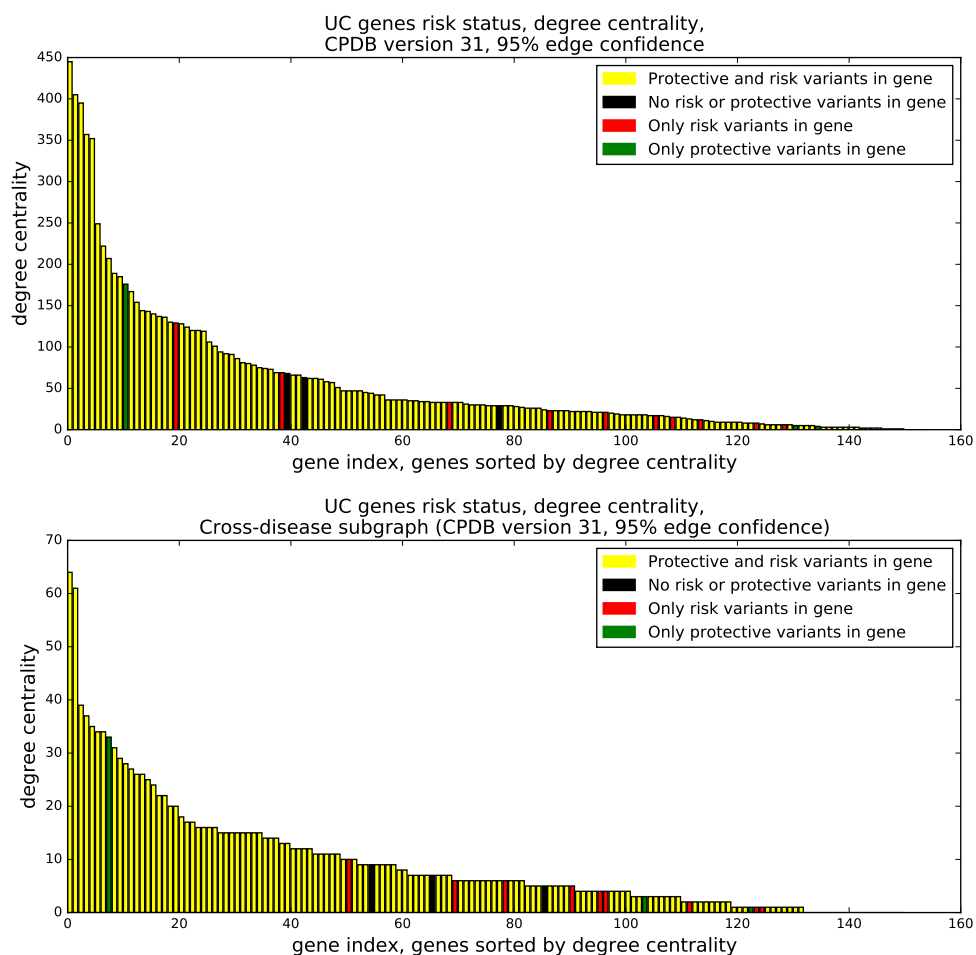


Figure 5: **Top:** Distribution of node *degree* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *degree* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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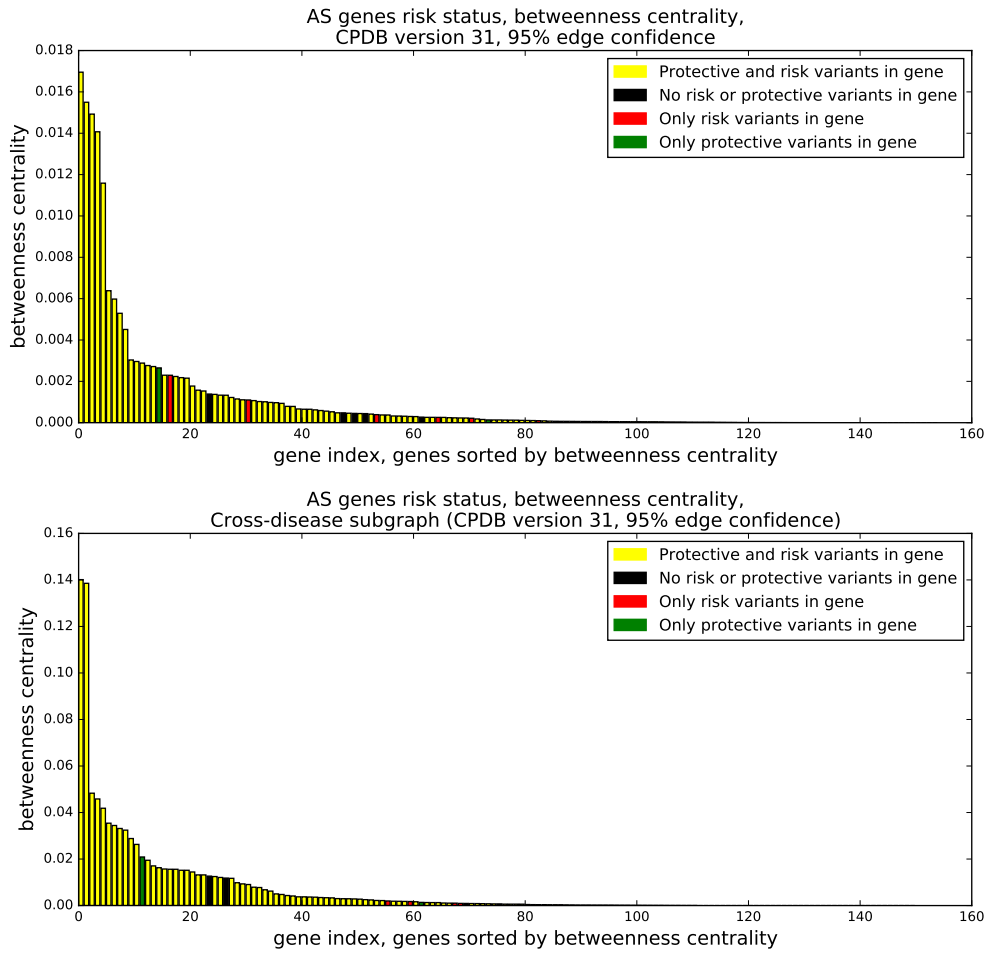


Figure 6: **Top:** Distribution of node *betweenness* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *betweenness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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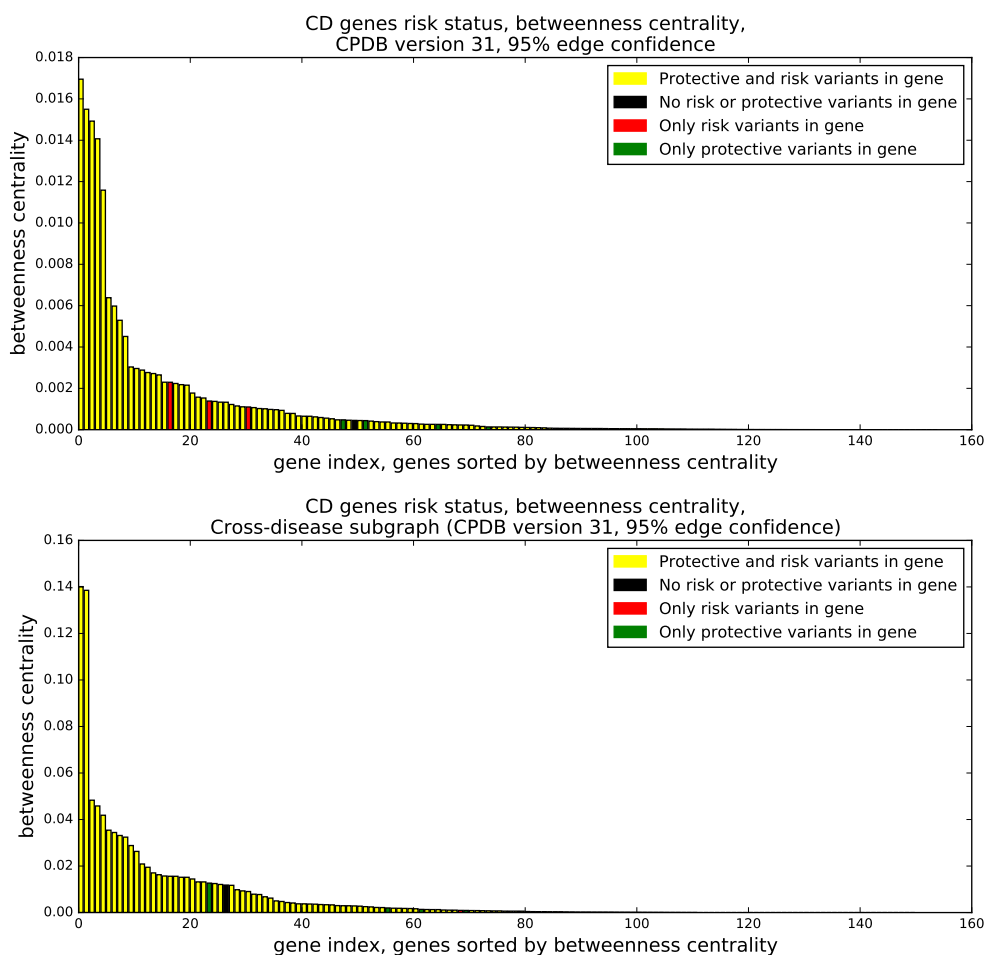


Figure 7: **Top:** Distribution of node *betweenness* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *betweenness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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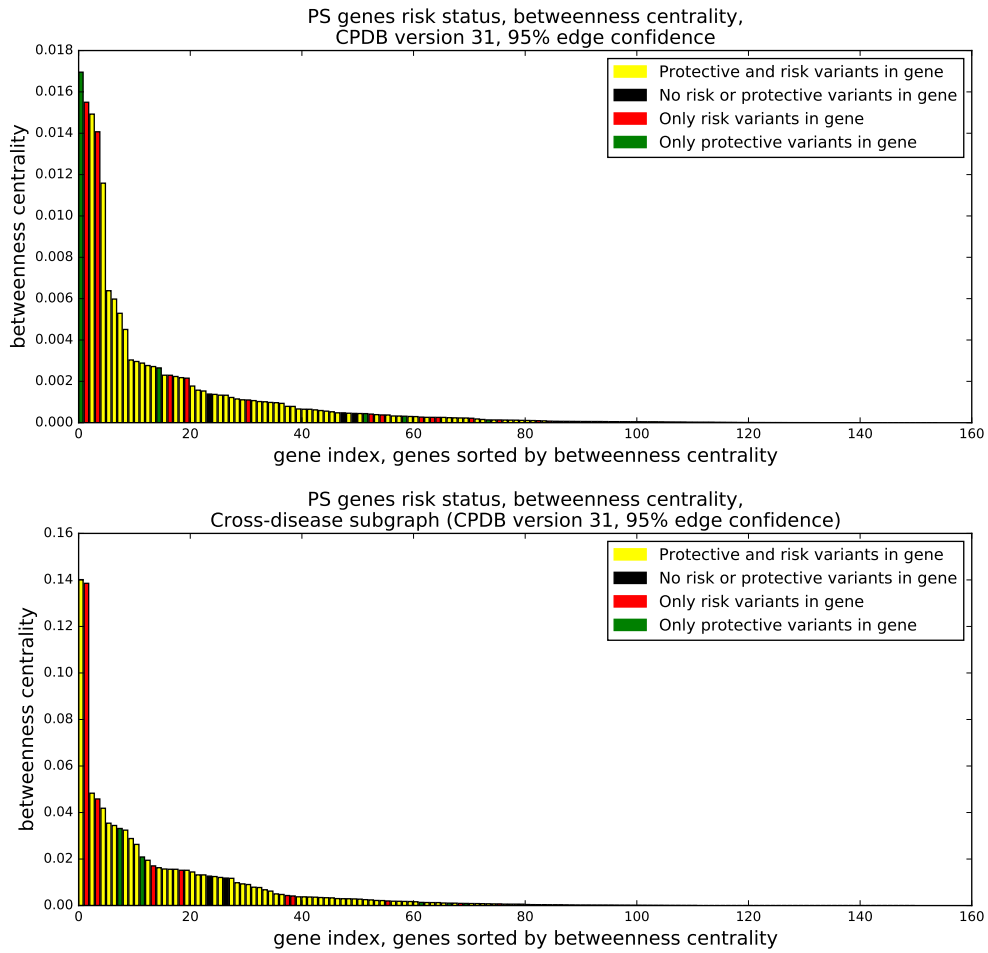


Figure 8: **Top:** Distribution of node *betweenness* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *betweenness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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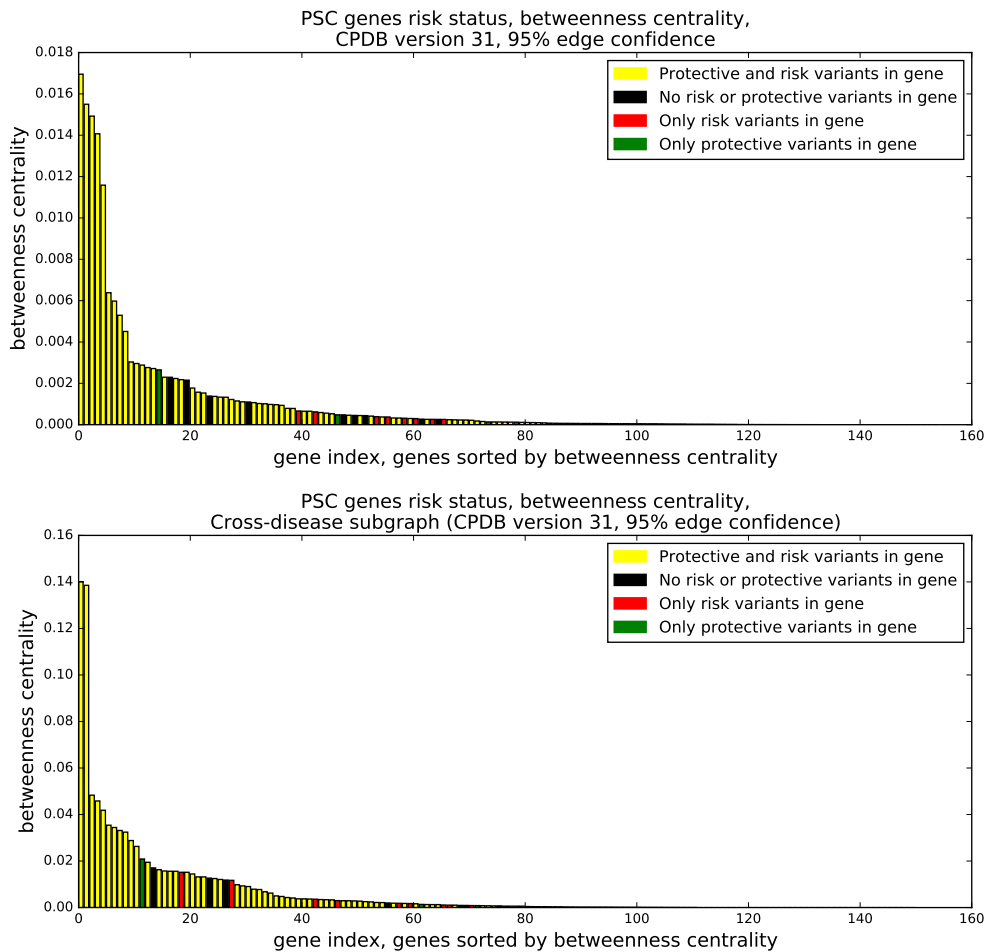


Figure 9: **Top:** Distribution of node *betweenness* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *betweenness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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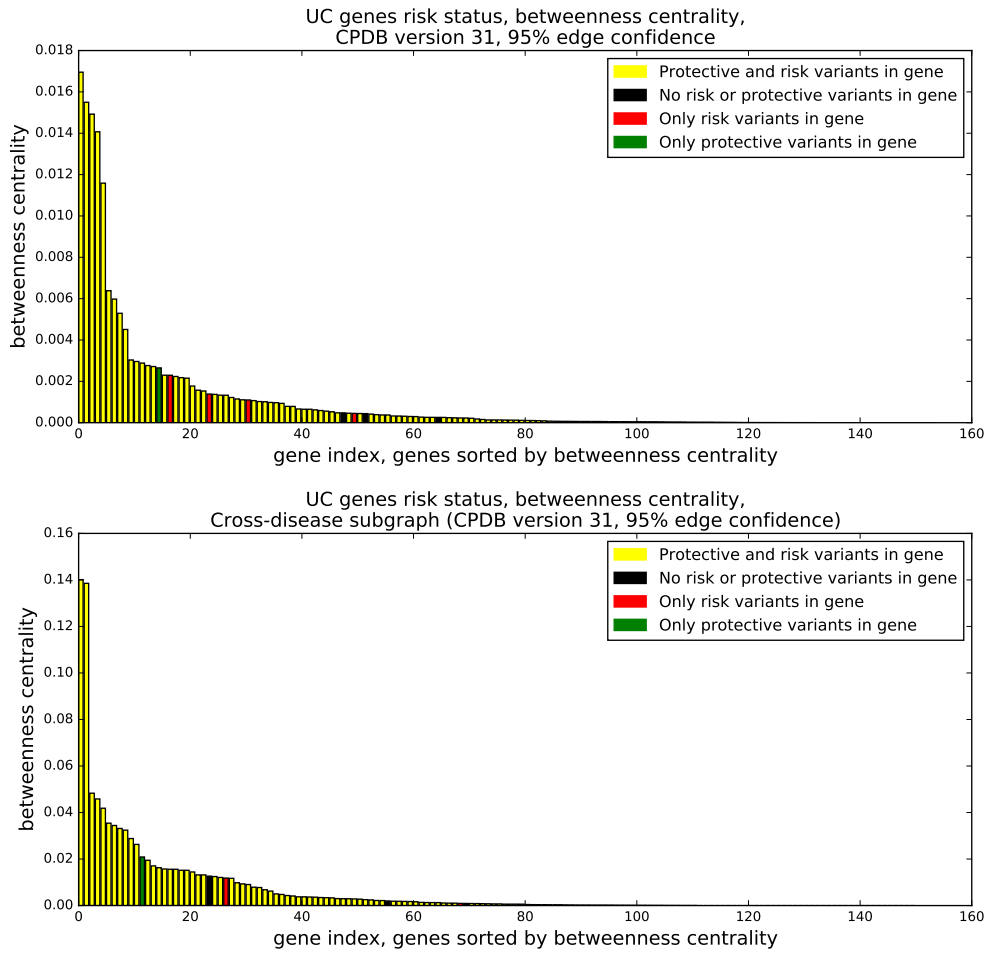


Figure 10: **Top:** Distribution of node *betweenness* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *betweenness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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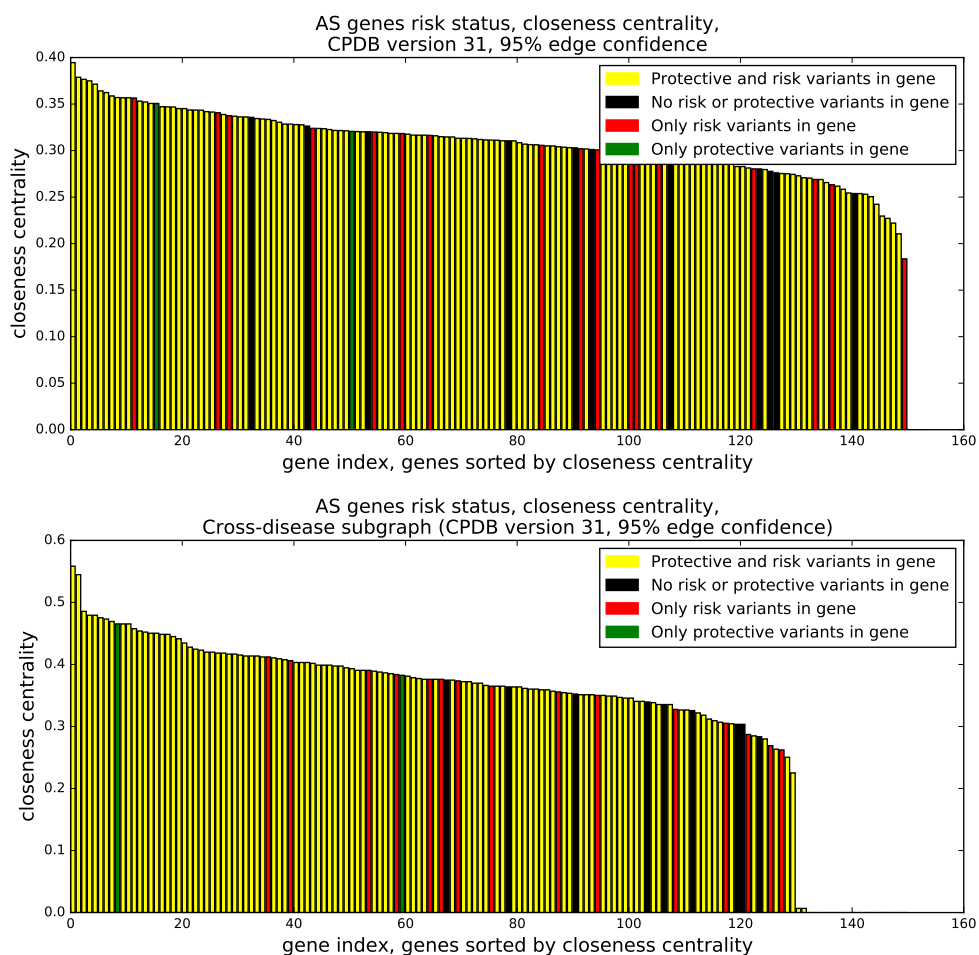


Figure 11: **Top:** Distribution of node *closeness* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *closeness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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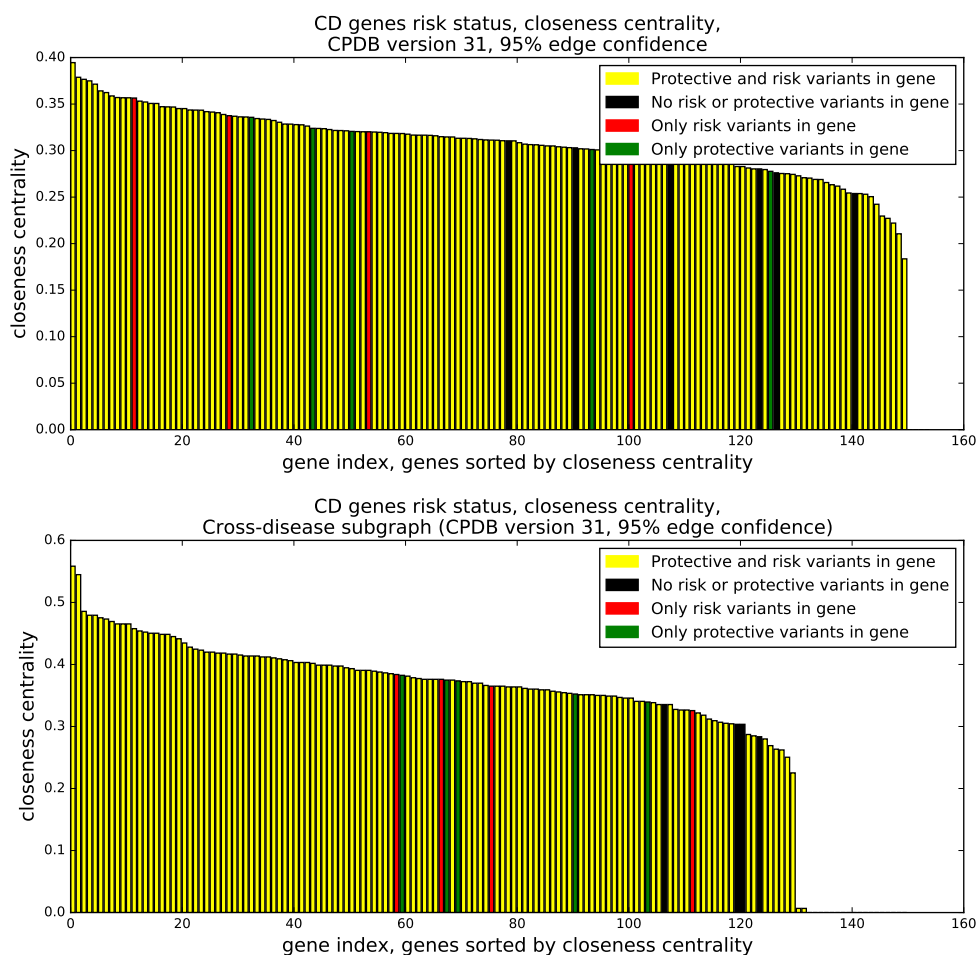


Figure 12: **Top:** Distribution of node *closeness* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *closeness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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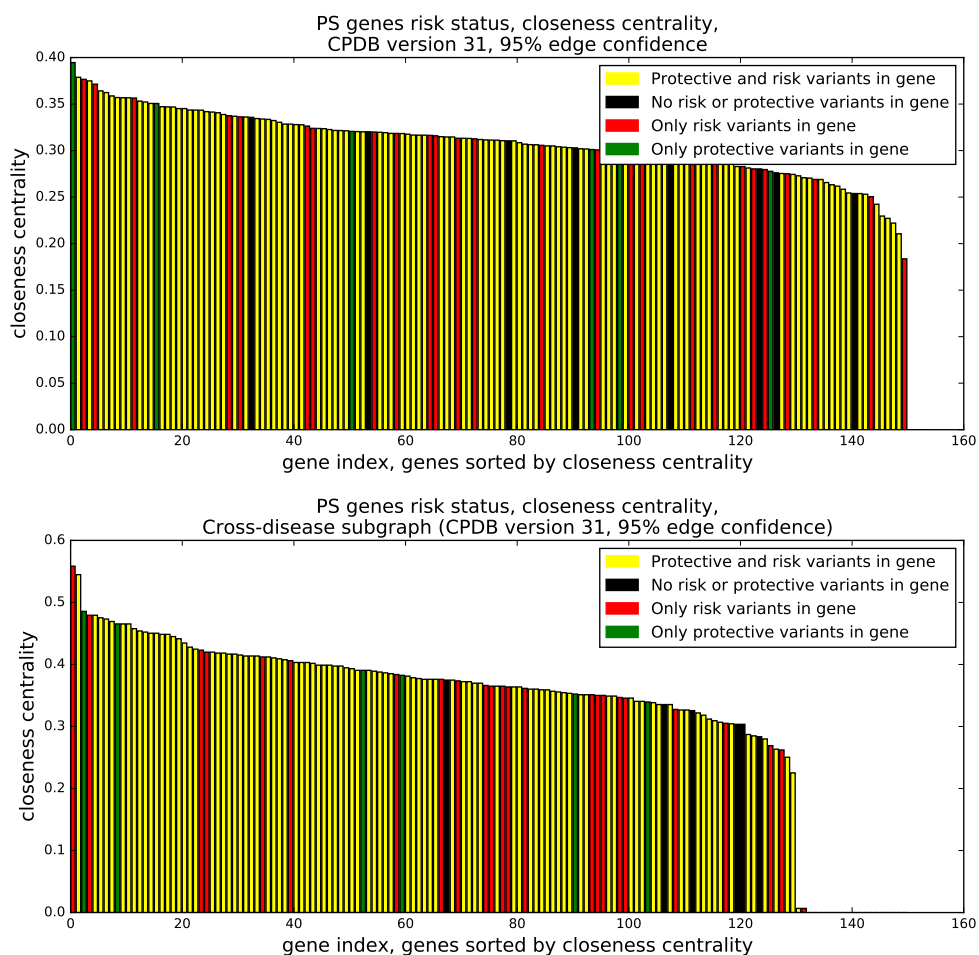


Figure 13: **Top:** Distribution of node *closeness* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *closeness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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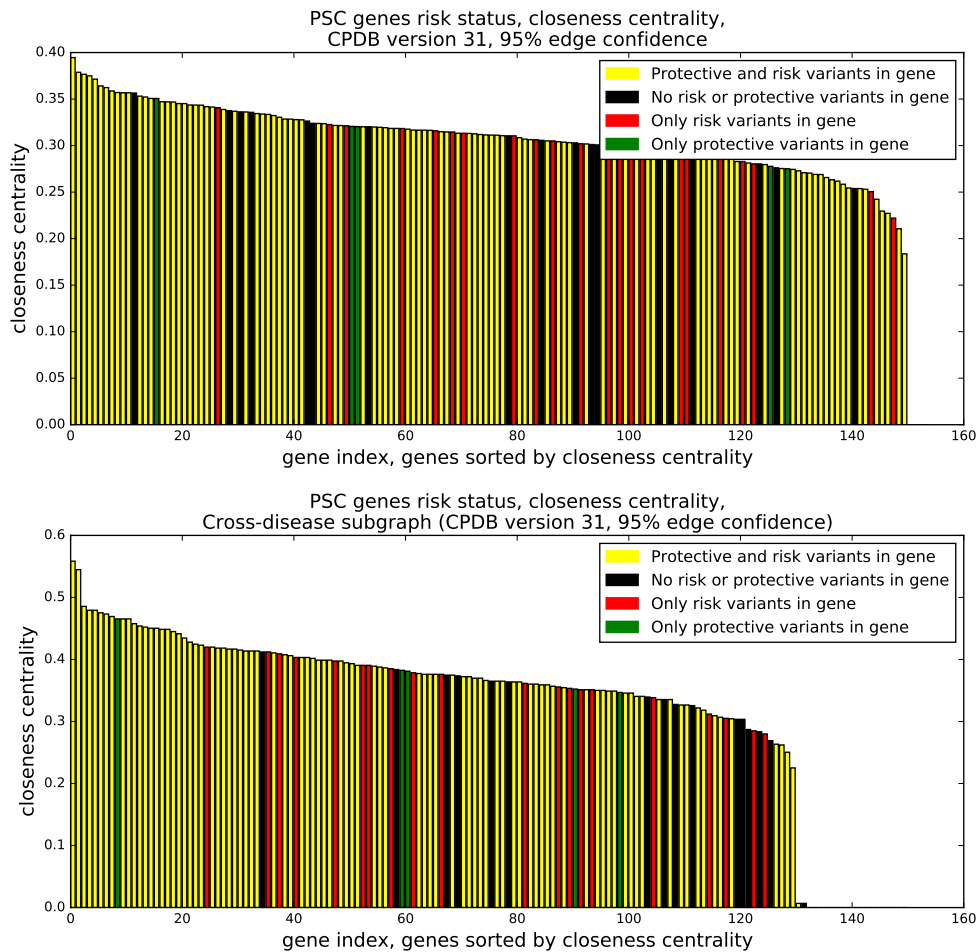


Figure 14: **Top:** Distribution of node *closeness* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *closeness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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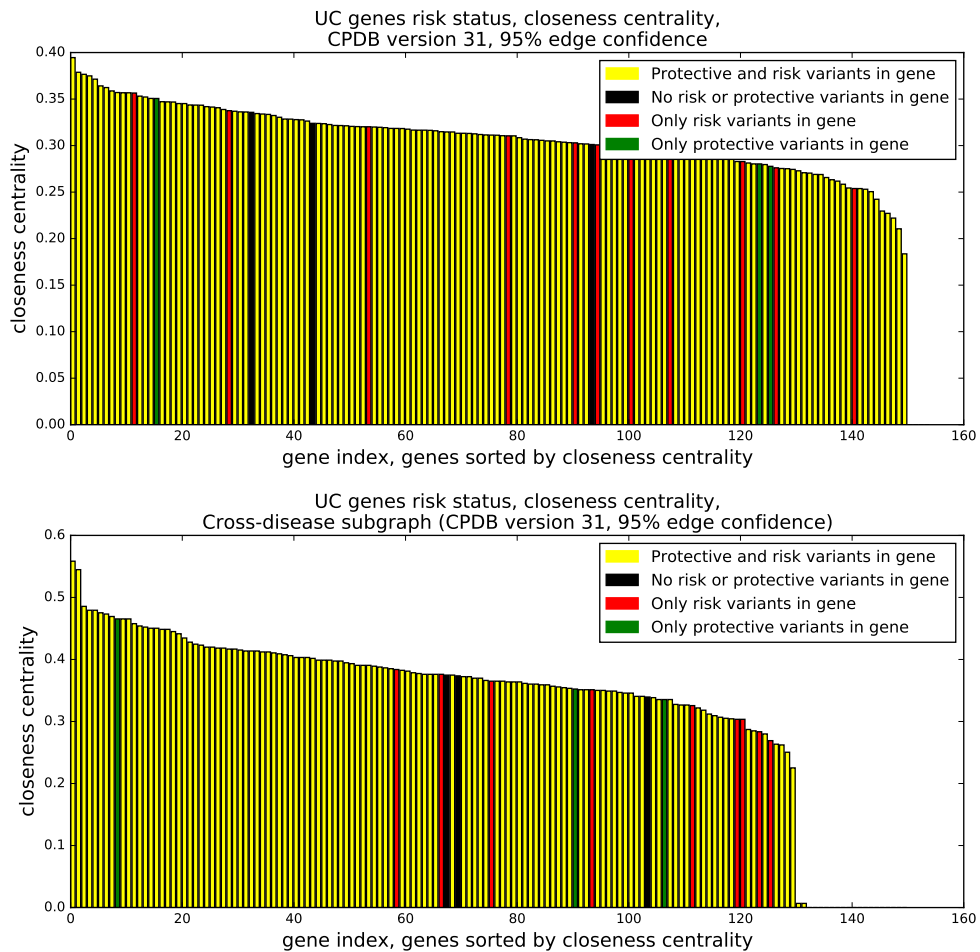


Figure 15: **Top:** Distribution of node *closeness* centrality in the complete ConsensusPathDB (minimum edge confidence 95 %) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *closeness* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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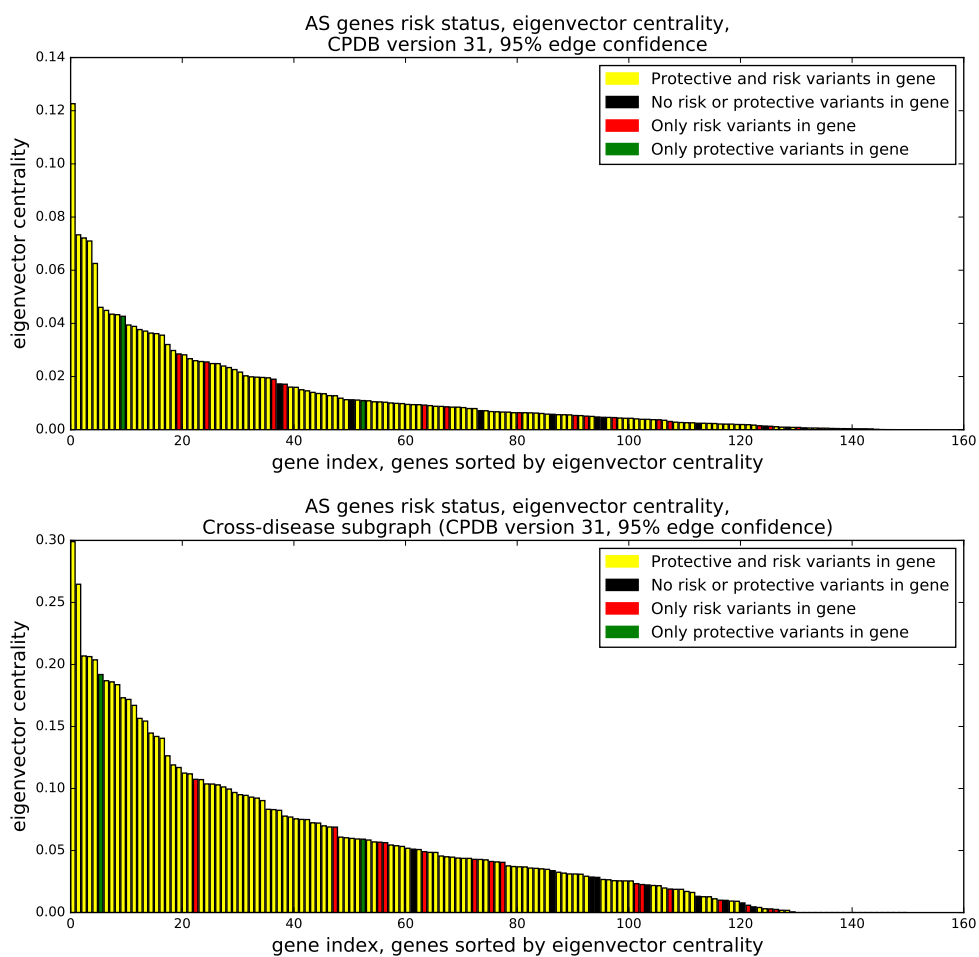


Figure 16: **Top:** Distribution of node *eigenvector* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *eigenvector* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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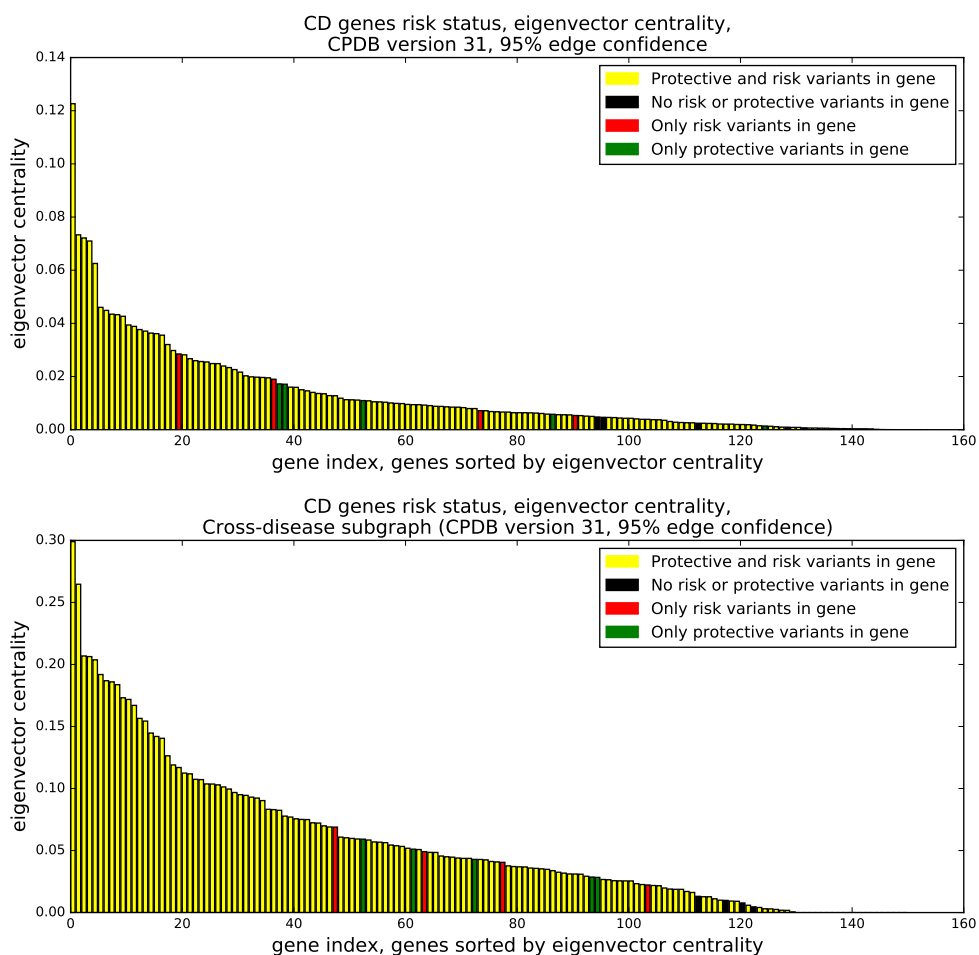


Figure 17: **Top:** Distribution of node *eigenvector* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *eigenvector* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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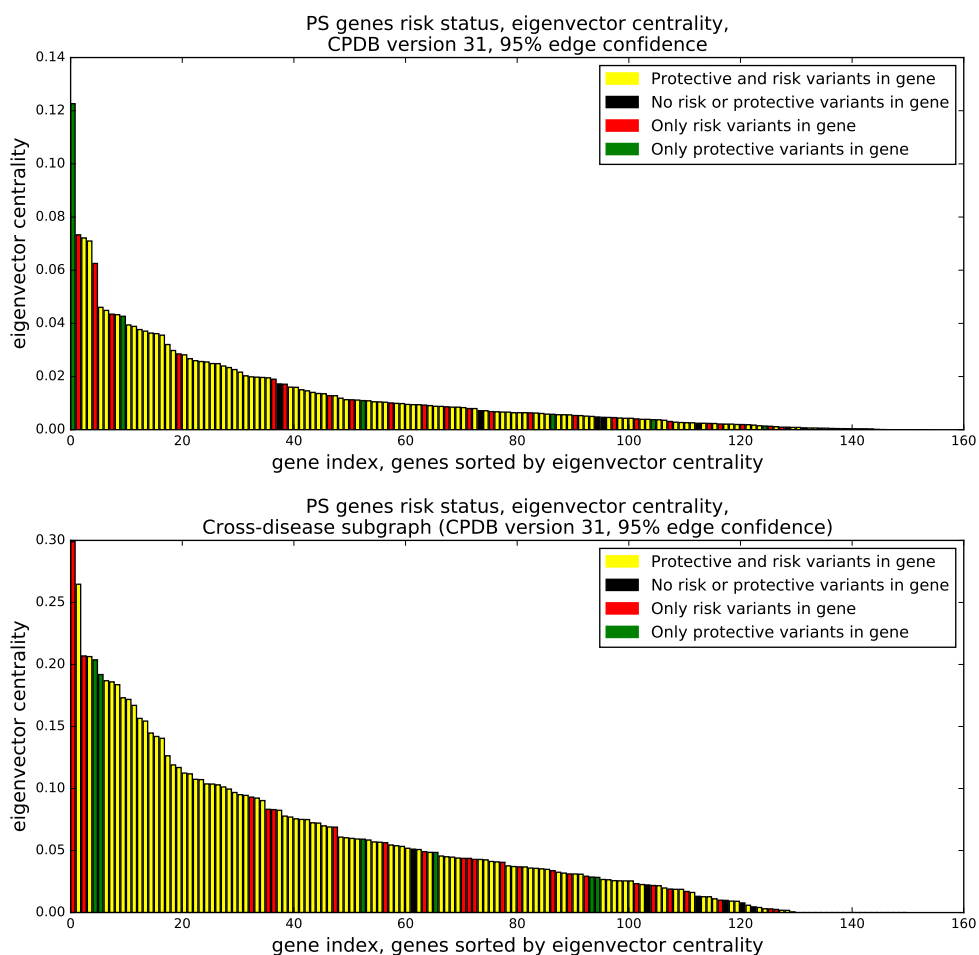


Figure 18: **Top:** Distribution of node *eigenvector* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *eigenvector* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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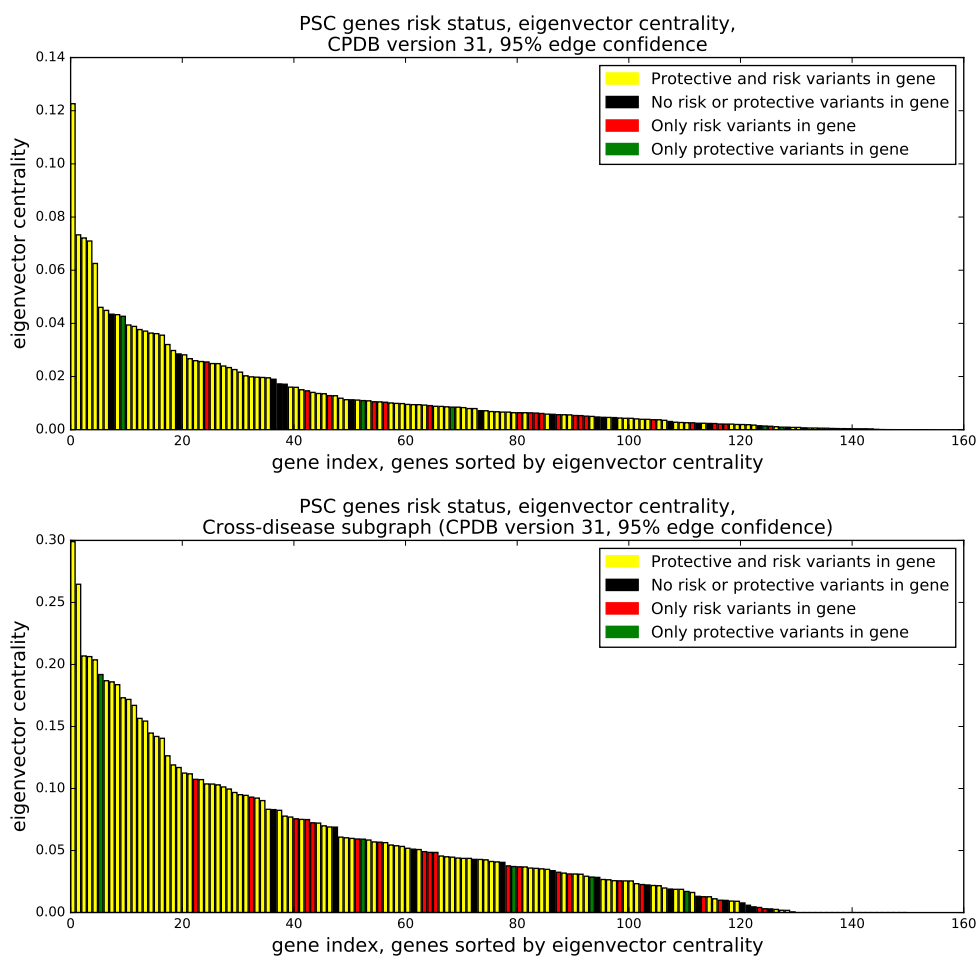


Figure 19: **Top:** Distribution of node *eigenvector* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *eigenvector* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

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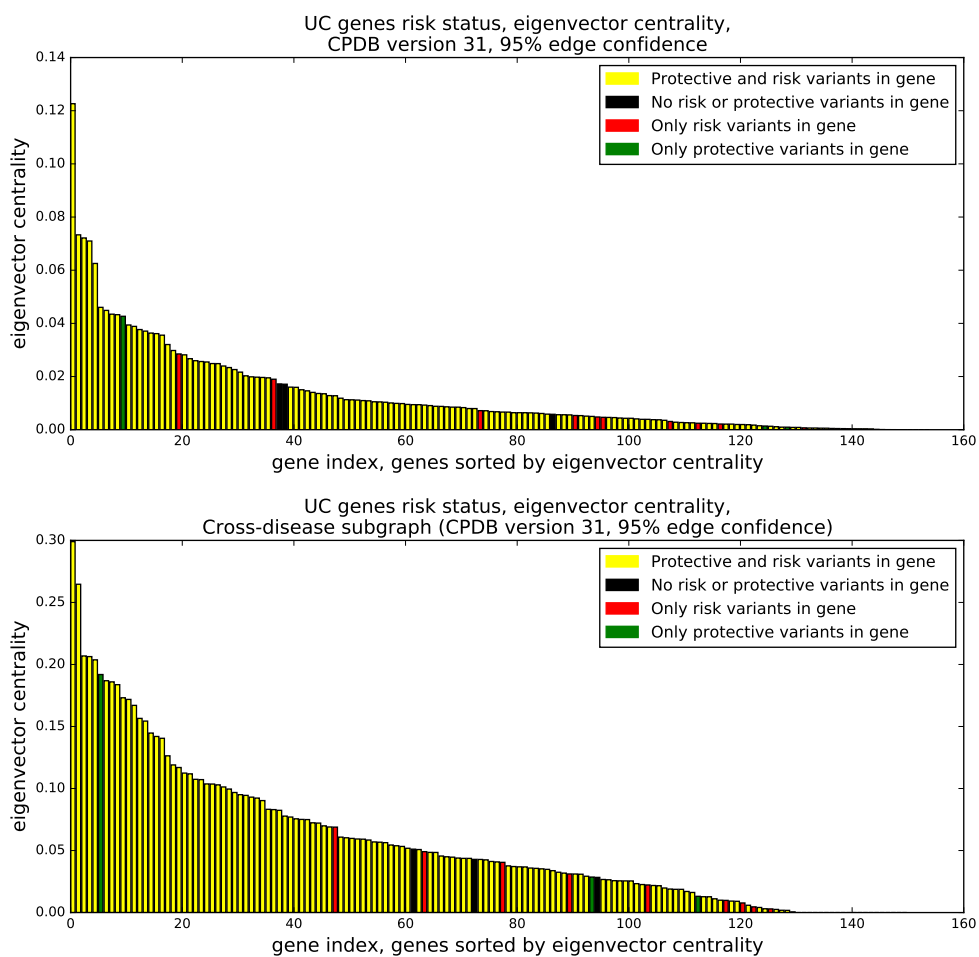


Figure 20: **Top:** Distribution of node *eigenvector* centrality in the complete ConsensusPathDB (minimum edge confidence 95%) for nodes that are associated with at least one disease and **Bottom:** Distribution of node *eigenvector* centrality in the subgraph of the ConsensusPathDB that consists only of nodes that are associated with at least one disease.

Both: The colors of the bars indicate the risk status of all minor variants in the study population[1] that a DNA-binding element interacts with.

References

- [1] D. Ellinghaus, L. Jostins, S. L. Spain, A. Cortes, J. Bethune, B. Han, Y. R. Park, S. Raychaudhuri, J. G. Pouget, M. Hübenthal, T. Folseraas, Y. Wang, T. Esko, A. Metspalu, H.-J. Westra, L. Franke, T. H. Pers, R. K. Weersma, V. Collij, M. DAmato, J. Halfvarson, A. B. Jensen, W. Lieb, F. Degenhardt, A. J. Forstner, A. Hofmann, The International IBD Genetics Consortium (iibdgc), International Genetics of Ankylosing Spondylitis Consortium (igas), International PSC Study Group (ipscsg), Genetic Analysis of Psoriasis Consortium (gapc), Psoriasis Association Genetics Extension (page), S. Schreiber, U. Mrowietz, B. D. Juran, K. N. Lazaridis, S. Brunak, A. M. Dale, R. C. Trembath, S. Weidinger, M. Weichen- thal, E. Ellinghaus, J. T. Elder, J. N. W. N. Barker, O. A. Andreassen, D. P. McGovern, T. H. Karlsen, J. C. Barrett, M. Parkes, M. A. Brown, and A. Franke, "Analysis of five chronic inflammatory diseases identifies 27 new associations and highlights disease-specific patterns at shared loci", *Nature Genetics*, vol. advance online publication, Mar. 2016.