Discovering Pharmacogenomic Explanations for Drug Side Effects

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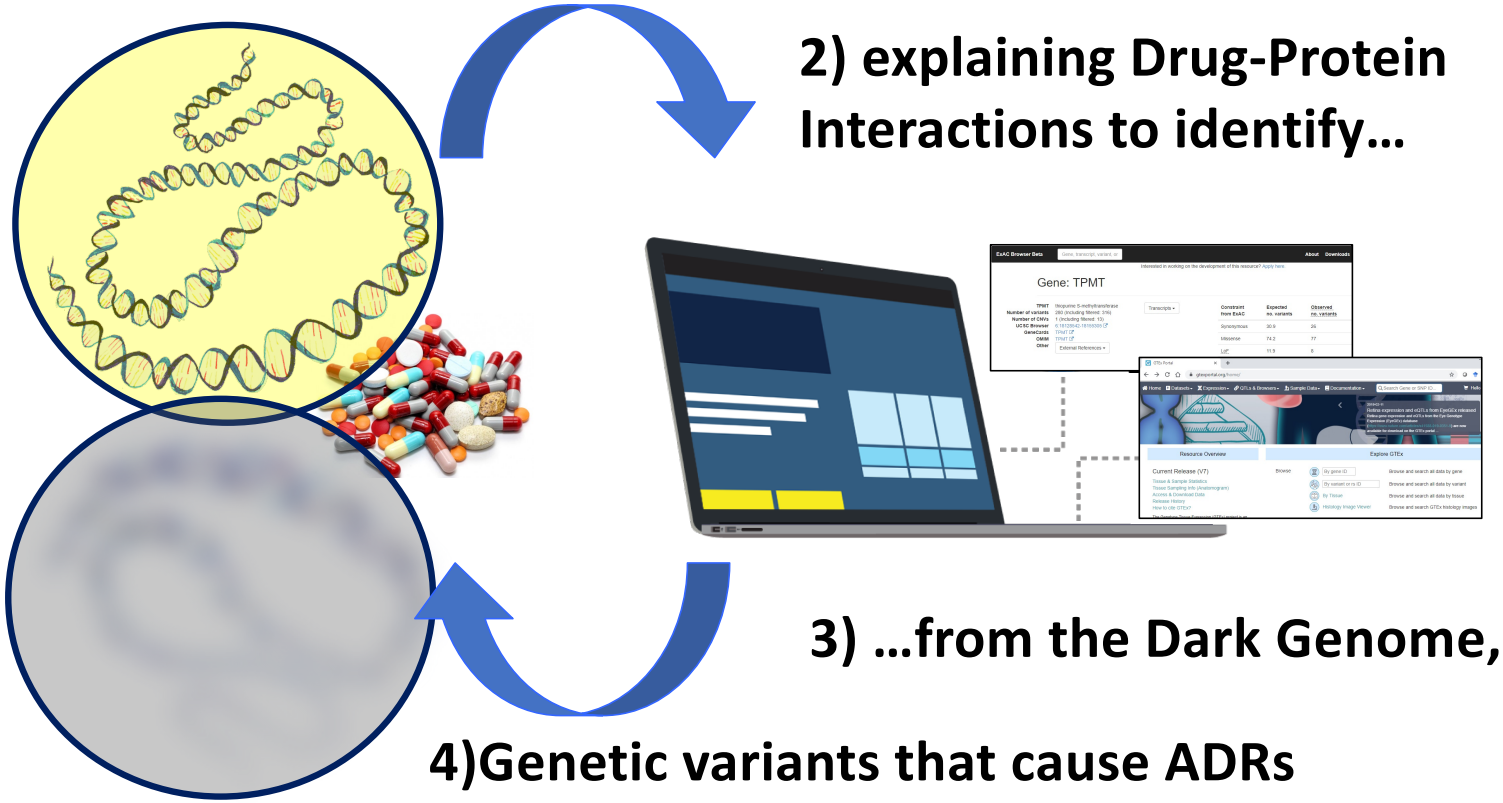
The Plan

1) Use drug docking tools that are ideal for…



2) explaining Drug-Protein Interactions to identify…

3) …from the Dark Genome,

4)Genetic variants that cause ADRs

What is pharmacogenomics?

- **Pharmacogenomics** is the study of how genes affect a person's response to drugs. This relatively new field combines pharmacology (the science of drugs) and genomics (the study of genes and their functions) to develop effective, safe medications and doses that will be tailored to a person's genetic makeup.
- Many drugs that are currently available are "one size fits all," but they don't work the same way for everyone. It can be difficult to predict who will benefit from a medication, who will not respond at all, and who will experience negative side effects (called **adverse drug reactions or ADR**). ADRs are a significant cause of hospitalizations and deaths in the United States.

https://ghr.nlm.nih.gov/primer/genomicresearch/pharmacogenomics