



## Pharmacogenomics Education

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## Integrated Curriculum- Pharmacogenomics

- Didactic Coursework in P1, P2, and P3
  - 11-30 hours
  - Multiple faculty involved
- APPE Rotation

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## The Basics of Genomics

- Cell Biology
  - DNA Structure and Replication
  - Consequences of drugs and mitochondrial genome replication
  - DNA biotechnology
    - Consequences of SNPs for drug metabolism
    - Response vs. nonresponse
  - Gene Regulation

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## Clinical Pharmacokinetics

- Kinetics vs. Dynamics
- CYP450 Metabolism
  - Ultrarapid, Extensive, Intermediate, Poor
- Pgp
- N-Acetyltransferase type 2
- UGT1A1
- TPMT
- Risk vs. Benefits

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## Therapeutics

- Nutrition
- Autonomic and Neurologic System
- Immunology
- Dermatology
- Endocrine
- Gastro-Intestinal
- Psychiatry
- Cardiac
- Renal
- Respiratory
- Infectious Disease
- Hematology-Oncology

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## Ethics

- Ethical, legal, and social issues related to genomic testing
- Storage of genetic information
- Public policy issues- regulatory statements

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## Uncovered Areas

- Informed consent process for pharmacogenomic testing
- Specific methods of genotyping and phenotyping
- Important issues in pharmacogenomic study design
- Regulatory issues that may result from testing being incorporated into Phase II and II testing

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## APPE Rotation

- Psychiatry Rotation
  - Ongoing research studies involving CYP450 enzyme genotyping
  - Ordering labs
  - Interpreting results
  - Discussing results with treatment team and patients

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## Integrated Pharmacogenomics Vs. One Course

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| <ul style="list-style-type: none"><li>• Pros<ul style="list-style-type: none"><li>– Discussion throughout the curriculum</li><li>– Each faculty discusses the use/need in their area of expertise</li><li>– Frequent assessment of students</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Cons<ul style="list-style-type: none"><li>– Time in each course</li><li>– Faculty may not be familiar with the use of pharmacogenomics</li><li>– Consistency of terminology and interpretation of results</li></ul></li></ul> |
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