



**Pharmacogenetics
Research Network**

National Institutes of Health
U.S. Department of Health & Human Services

06/06/06

Overview, Approaches, & Issues in the PGRN

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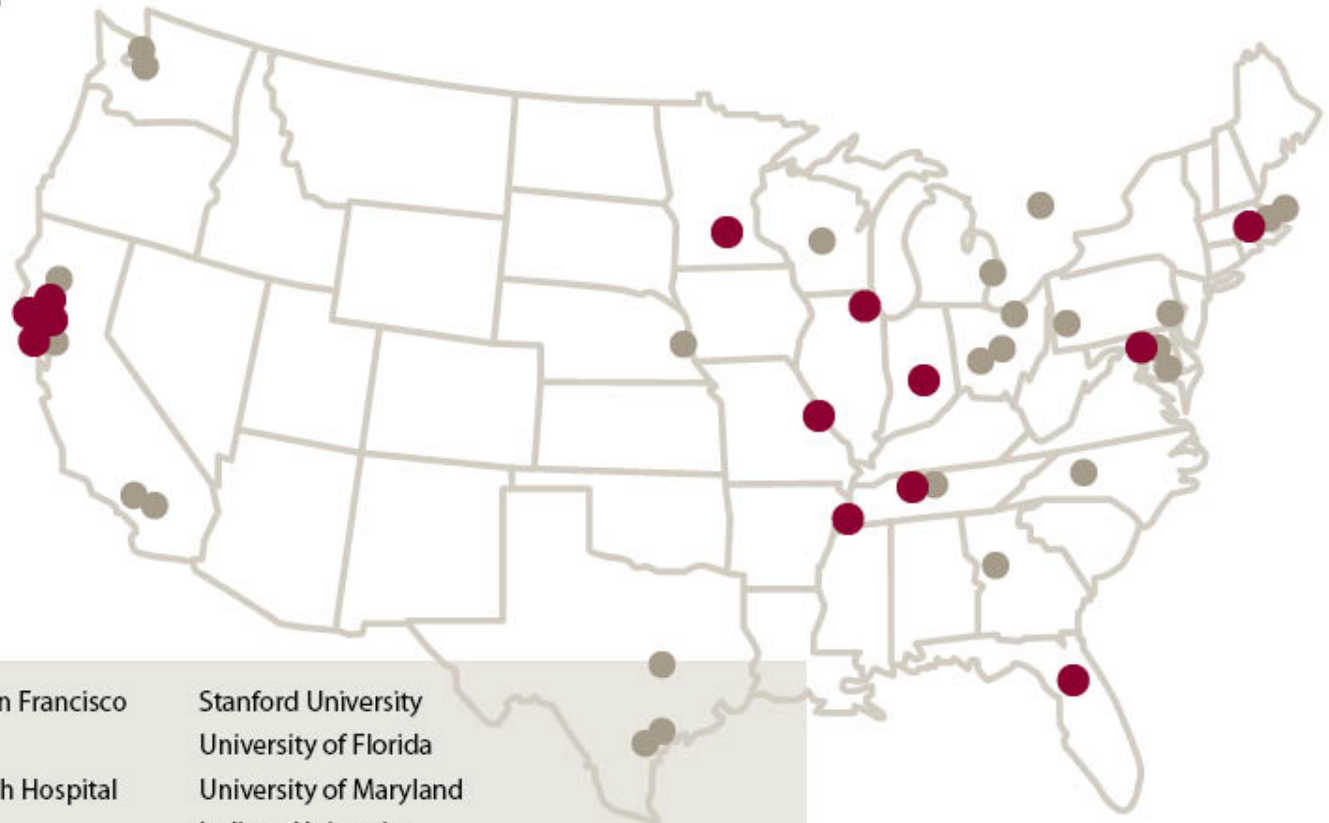
Pharmacogenetics Research Network

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Research Sites

NIH Funding Institutes

- NIGMS**
- NHLBI**
- NIDA**
- NCI**
- NIEHS**
- NIMH**
- NHGRI**
- NLM**
- ORWH**



University of California, San Francisco
 University of Chicago
 St. Jude Children's Research Hospital
 Mayo Clinic
 Vanderbilt University
 Washington University
 SRI International

Stanford University
 University of Florida
 University of Maryland
 Indiana University
 Brigham and Women's Hospital
 Children's Hospital of Oakland Research Institute

● Primary Investigator Site
● Co-Investigator Site



“Networked” approach to pharmacogenetics research studies:

- Each group competed independently
- Each group had to be multi-disciplinary
- Groups could declare areas of interest; wanted breadth
- Group could have different research approaches; wanted range
- Many capitalizing on existing studies and trials
- Must make recommendations to represent phenotypes
- Must agree to work together to “raise field”
- Must be responsive to External Advisors (“more than sum...”)



Data sharing was original to conception of PGRN:

- Must agree to share data in www.PharmGKB.org
- PharmGKB open to all scientists, upon registration
- Original identifying information remains at home site
- Information is organized by genes, drugs, diseases
- Hierarchy of phenotypes proposed: functional/cellular assays, pharmacokinetics, pharmacodynamics, outcomes
- Pathways are the bridge between genes and genome
- Shareable samples offered to Coriell repository

Range of studies, approaches underway:

- “**Genotype-to-phenotype**” studies
- “**Phenotype-to-genotype**” studies
- Diseases: CV, cancers, neuropsych., asthma
- Drug metabolism pathways (Phase I, Phase II, transport)
- Groups have discovered common interests, e.g., DME, inflammation, adrenergic and serotonergic pathways
- Range of scientific approaches, including GWAS, some gene discovery in model organisms
- Sharing methods, technology, design, analysis (workshops)



Developed uniform policies through SC:

- Data deposits made at time of publication (when analyzed)
- Model informed consent language (being revised)
- Developed recommendations on IP, to not hinder research
- Communications with field (meetings, “white papers” coming on approaches, tests, ADRs, education areas)
- Positions on studies with identified populations
- Encourage collaboration, not competition

Future Plans:

- Promote development of PharmGKB, for data- and knowledge-sharing (interact with other dbs)
- Identify best, most appropriate technologies (Dec. mtg.)
- Encourage collaborations to maximize opportunities, *e.g.* with clinical trial designers, HMOs (May mtg.)
- Enhance translation of PG research (separate PA coming)
- **Challenges**: standardized vocabularies, lexicons, ontologies
- **Challenges**: HS protections, privacy, HIPAA
- **Challenges**: interactions with industry, and FDA