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The phenx toolkit- Online catalog of consensus measures for phenotypes and exposures

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Abstract

The PhenX (consensus measures for **Phen**otypes and e**X**posures) Toolkit (https://www.phenxtoolkit.org/) is an online catalog of broadly validated and well-established measures of phenotypes and exposures for use in human subjects research. The PhenX Toolkit currently includes 339 measures covering a broad scope of 21 research domains including Demographics, Anthropometrics, Cancer, Nutrition, Environmental Exposures, Neurology and Social Environments, and six specialty areas related to Substance Abuse and Addiction (SAA). Investigators can find measures of interest by browsing domains, collections, or measures, or by searching using the Smart Query Tool. For each measure, the Toolkit provides a description of the measure, the rationale for its inclusion, detailed protocol(s) for collecting the data, and supporting documentation. The Toolkit also provides custom data collection worksheets to help investigators integrate PhenX measures into their study and custom data dictionaries to facilitate data submission to the database of Genotypes and Phenotypes (dbGaP). To promote data interoperability, PhenX has adopted the national standards Logical Observation Identifiers Names and Codes (LOINC) and cancer Biomedical Informatics Grid (caBIG) Common Data Elements (CDEs). To help researchers find comparable data, PhenX measures and variables are mapped to studies in dbGaP. These mappings are displayed in dbGaP and highlight opportunities for cross-study analysis by researchers using PhenX measures. PhenX RISING (**R**eal world, **I**mplementation, **S**har**ING**) includes seven investigators who were awarded funds to incorporate PhenX measures into existing, population-based genomic studies. Of the 81 measures implemented by these investigators, 55 are shared by two or more groups providing common ground for future cross-study analysis.

Biography

Wayne Huggins earned his Ph.D. in Biochemistry from North Carolina State University and served as a postdoctoral research associate at the Lineberger Comprehensive Cancer Center at the University of North Carolina at Chapel Hill. Dr. Huggins has worked on PhenX since 2009 contributing to the development of Toolkit features and content. Most recently, he served as the coordinator for PhenX RISING, a group of investigators incorporating PhenX measures into existing population-based genomic studies for novel primary and cross-study analyses. Dr. Huggins' research interests include data mining, data integration and data harmonization, and analysis of genome-wide association studies.