Use Cases

This page contains use cases provided by members of the tranSMART community to illustrate how they are using tranSMART to enable translational research. If you have a use case you'd like to contribute, please contact Sherry Cao, Keith Nangle, or Dave Merberg. Please also consider providing data that other users can work with to replicate your use case.

Click the image to see details:

**Patient Stratification and association analysis**

**Patient Stratification**
- **Analysis goals**
  - Association between demographic characteristics and Bortezomib response?
  - Association between disease subtype and drug response?
  - Any gene expression data predictive of drug response?
- **Available data**
  - Clinical study results from Bortezomib multiple myeloma study
    - Treated, untreated, responder, nonresponder patients
  - Demographic information
  - Disease subtype
  - Gene expression data
- **Methods**
  - Chi-squared
  - K-means clustering
  - Kaplan-Meier analysis

**Cohort comparison**
- **Analysis goals**
  - Compare survival and chromosomal abnormalities across disease subtypes
- **Available data**
  - Clinical data: E.g. staging, age, gender, treatment arm
  - Non-omics data: MSI/MSS (microsatellite instability), mutation data
  - Genomics: Comparative genomic hybridization (arrayCGH)
- **Methods**
  - Histograms, boxplots, t-test, Kaplan-Meier plot, Cox regression, arrayCGH group test

**Collaboration, analysis, customization in preclinical oncology**

**Goals**
- Create central data storage for a preclinical oncology group at a large pharmaceutical company
- Incorporate a custom R script that processes tumor volume and weight data
- **Available data**
  - In vivo studies using animal model
  - animal model metadata

**Predictive toxicology**

**Data Curation at Pfizer**

**Getting the most from public data**

**Accelerated Cure Project for Multiple Sclerosis**
Accelerated Cure Project: a Case Study

for Roche Biosciences

What follows is a description of a large data curation project undertaken by Roche Biosciences for the Accelerated Cure Project for Multiple Sclerosis (ACP). ACP is a non-profit focused on the discovery of a cure for multiple sclerosis, and related demyelinating disorders, by providing the research community with tools to enable scientists to remove barriers that otherwise would slow the conduct of groundbreaking research.

Stephen Wicks, Ph.D., Roche Biosciences