

## • Lung Cancer Explorer (LCE)

The Lung Cancer Explorer, an open web portal to explore gene expression and clinical associations in lung cancer, was developed at The University of Texas Southwestern Medical Center (partially supported by the NASA funded UT Southwestern Medical Center Lung Cancer NSCOR grant, NNX11AC54G). This database aggregates over 30 public clinically-annotated lung cancer gene expression studies, along with some private data from the University of Texas Southwestern Medical Center, and presents a user-friendly, web-based interface to explore and analyze this data.

The database stores information about patients including demographics, histology, stage classifications, clinical outcomes, and also stores the probe-level genome-wide mRNA expression information, allowing users to perform very rich analysis on the data. From the user's perspective, usage is as easy as logging in and clicking a button to perform any of our current analysis functions:

- Survival Analysis: Test the association between the gene expression level and patients' overall survival time in one study.
- Meta-Survival Analysis: Summarize the association between the gene expression level and patients' overall survival time across multiple studies.
- Comparative Analysis: Test the association between the gene expression level and patients' characteristics, such as gender, age, histology types, disease stages, etc.
- Tumor vs. Normal: Test whether the gene expression levels different significantly between tumor samples and normal samples.
- Co-expression analysis: Calculate the correlations among a list of user-specified genes based on the gene expression levels.

The web application is now online and available for usage: <http://qbrc.swmed.edu/lce/>. We recommend you also view the "Getting Started" video online <http://vimeo.com/63566546> to get a feel for how to use the application. For any questions and comments, please contact Dr. Yang Xie ([yang.xie@utsouthwestern.edu](mailto:yang.xie@utsouthwestern.edu), and [QBRC@UTSouthwestern.edu](mailto:QBRC@UTSouthwestern.edu))

The UT Southwestern Medical Center Lung Cancer NSCOR grant (NNX11AC54G) was led by Dr. John Minna and Dr. Jerry Shay. Drs. John Minna, Jerry Shay, David Chen, Yang Xie and Michael Story lead the individual projects and cores. We are planning to expand the current LCE to include molecular profiling data and phenotype data generated by NSCOR projects to facilitate data sharing and integrative analyses.