Protocol Title: Adjuvant Lung Cancer Enrichment Marker Identification and Sequencing Trial (The ALCHEMIST Screening Trial)*This is the screening study for A081105, E4512, and EA5142

Target Population: Stage IB-IIIA Non-Small Cell or Squamous Cell Lung Carcinoma, Lung Adenocarcinoma, or Large Cell Lung Carcinoma that has been or will be removed by surgery.

Summary: The objective of this trial is to centrally test resected Non-Small Cell Lung Cancer (NSCLC) for genetic mutations to facilitate accrual to randomized adjuvant studies. To obtain clinically annotated tumor tissue and patient-matched non-malignant DNA from peripheral blood, as well as detailed epidemiologic and clinical follow-up data, to allow clinically annotated advanced genomic analyses in concert with the National Cancer Institute (NCI) Center for Cancer Genomics (CCG).

Key Inclusion Criteria:
- NOTE: Patients with Squamous Cell Carcinoma are eligible only if the registering site has EA5142 IRB approved.
- PATIENT PRE-REGISTRATION ELIGIBILITY CRITERIA:
  - For Pre-Surgical Patients:
    - Suspected diagnosis of Resectable Non-Small Cell Lung Cancer.
    - Suspected Clinical Stage of IIIA, II (IIIA or IIB), or Large IB.
  - For Post-Surgical Patients:
    - Completely resected Non-Small Cell Lung Cancer with negative margins.
    - Pathologic Stage IIIA, II (IIIA or IIB), or Large IB.
  - No patients who have received neoadjuvant therapy for this Lung Cancer.
- PATIENT REGISTRATION ELIGIBILITY CRITERIA:
  - Completely Resected NSCLC with negative margins.
  - Pathologic Stage IIIA, IIA or IIB, or Large IB.
  - In order to allow for time for central genotyping and eligibility for the ALCHEMIST treatment trial, patients must register within the following windows:
    - If no adjuvant therapy, register patient within 75 Days following surgery.
    - If adjuvant chemotherapy or radiotherapy only, register patient within 225 Days following surgery.
    - If adjuvant chemotherapy and radiation, register patient within 285 Days following surgery.

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For additional information: [https://clinicaltrials.gov/ct2/show/NCT02194738](https://clinicaltrials.gov/ct2/show/NCT02194738)