Lung cancer is the leading cause of cancer related death in the United States, with more than 200,000 newly diagnosed cases each year. Currently the 5-year lung cancer survival probability is approximately 15%; however, tumors detected at smaller sizes are associated with higher survival rates implying that early detection of lung cancer is critical in reducing lung cancer mortality. In 2010, the National Lung Screening Trial (NLST) demonstrated that low-dose CT (LDCT) versus chest radiographic screening reduced lung cancer mortality by 20%. Recently, the United States Preventive Services Task Force (USPSTF) updated their national lung cancer screening guidelines, recommending that an individual aged 55 to 80 years with at least 30 pack-years of smoking and less than 15 years since quitting be screened annually by LDCT. Their decision to extend the screening stopping age to 80 years has initiated debate on the appropriate stopping age. The USPSTF decision was made based on evidence from clinical trials, including NLST, as well as analyses provided by Cancer Intervention and Surveillance Modeling Network (CISNET) consortium. CISNET is an NCI sponsored consortium that uses a comparative statistical modeling approach to estimate the population-level impact of cancer prevention, screening and treatment strategies. On behalf of the CISNET lung group, I will present the CISNET modeling work that was used by the USPSTF during their deliberations on the lung cancer screening recommendations. I will conclude my talk with the implications of advances in genomic medicine on future cancer screening guidelines.