Targeted therapies have had a major impact on the treatment of patients with cancer. They are now used to treat a wide range of malignancies, and some offer unprecedented clinical benefits. However, as experience with these therapies has increased, we have become cognizant of their limitations. Despite their capacity to induce dramatic remissions, most cancers ultimately develop resistance to these treatments, thereby limiting their clinical benefits. For the past several years, major, concerted efforts have been undertaken to understand the molecular mechanisms explaining how cancers become resistant. These insights are culminating in the development of new treatments that are being used to overcome resistance in the clinic. This lecture will discuss the latest biological insights into the mechanisms of resistance to targeted therapies and the clinical strategies being employed to overcome it.

**Target Audience:** All Levels

**Level of Content:** Advanced

**Speaker:**
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**Full Disclosure:**
Nothing to Disclose

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**Full Disclosure:**
Nothing to Disclose

**Objectives:**
At the end of this session, participants will be able to:
1. Identify the main types of mechanisms by which cancers become resistant to targeted therapies.
2. Give examples of the challenges imposed by “clonal heterogeneity” when trying to develop treatments to overcome resistance.