Failure analysis investigations are fluid in nature as the scope of the investigation changes as a result of the investigation findings. Failure investigations generally progress from non-destructive to highly invasive techniques but “follow the recipe” approaches can prevent achieving the goals of the investigation by limiting flexibility and resources to change focus based on observations. This presentation will focus on deductive logic-based investigations. Differentiating the likely goals of such investigations and how they influence organization will be discussed. Topics covered will include sample receipt and handling, general process overview, organization of test protocols (including common tests), and litigation-related issues. Examples will be used to illustrate these concepts.