Dr. De Gruttola has spent his career working with junior colleagues and in collaboration with clinical and laboratory investigators to develop and apply methods to address a broad range of public health challenges. His primary focus has been in infectious diseases, but the methods he and colleagues developed for cluster randomized trials design, conduct, and analysis apply more broadly.. He has managed large projects devoted to improving the public health response to the AIDS epidemic, both within the US and internationallytant. The aspects of the HIV epidemic on which he has worked include transmission and natural history of infection with the Human Immunodeficiency Virus (HIV), as well as investigation of antiretroviral treatments, including the development and consequences of resistance to them. These activities have required development and application of methods for handling repeated measures of biomarkers, such as HIV viral load and CD4 lymphocyte count as well as of identifying predictors of the responses of these markers to treatment; newer areas of his research include analyses of networks and their use in mathematical modeling of epidemic propagaton and of the effect of interventions. These methods are related to the broad goals of his research, which have included developing treatment strategies that provide durable virologic suppression while preserving treatment options after failure, and evaluating the community-level impact of packages of prevention interventions, including antiviral treatment itself. He served as the Director of the Statistics and Data Analysis Center of the Adult Project of the AIDS Clinical Trials Group during the period in which highly active antiretroviral treatment was developed, and was instrumental in designing and analyzing studies of the best means of providing such therapy. He has also served as the Co-PI (with Max Essex) for a cluster-randomized trial of an HIV combination prevention program in Botswana.