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“The Impact of Technology in the Discovery of Monoclonal Antibody Therapeutics”

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3:25 p.m.

202 Gavett Hall

The monoclonal antibody (mAbs) therapeutic market is currently a multibillion dollar industry. mAbs are the largest group of biotechnology derived drugs in clinical trials today despite the fact that it costs nearly \$1B dollars and 10 years to develop and commercialize a mAb. This cost is mostly incurred in the productization phase; funding clinical trials and GMP certification for FDA approval. This constitutes a huge financial barrier to entry in the mAb market which favors big pharma. Key to the successful commercialization of a block buster therapeutic requires the discovery of a large panel of potential mAb candidates that must be screened for optimized parameters including target binding affinity and specificity, pharmacology and toxicology. It is critical to take an optimized candidate into clinical trials as the cost of failure to start the process over is too great. Methodology commonly used in industry to discover mAb candidates is very inefficient in terms of the number of starting candidates that can be screened which thus limits the potential discovery of a high quality mAb. Hence, technology innovation in the development of novel high content screening (HCS) techniques can favorably impact the discovery process. In this talk we will introduce an ultra-HCS tool called Imaging Secretion Cytometry (ISC) that we are developing for mAb discovery based on our patented microbubble well array technology. The competitive advantage of the microbubble well array compared to other micro-well systems will be presented. In addition, we will demonstrate other applications of this array technology for functional screening in drug discovery and cancer stem cell research.