

NANOMANUFACTURING AND REGENERATIVE MEDICINE

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Abstract: Nanoparticle manufacturing in the life sciences has primarily focused on drug delivery applications, including the use of therapeutic agents to promote regenerative medicine. This presentation outlines the state of the art of high throughput nanomanufacturing platforms from the research to commercial stages. This presentation will also highlight critical roadblocks that need to be addressed for commercial advancement of these technologies, including reproducibility and regulatory hurdles. Propelled by the success of covid-19 mRNA vaccine manufacturing systems, nanoparticles and nanomanufacturing technologies are poised for rapid translation to the regenerative medicine field.

Bio: Jessica Winter is a Distinguished Professor of Engineering in the William G. Lowrie Department of Chemical and Biomolecular Engineering and the Department of Biomedical Engineering and a leader in the American Institute of Chemical Engineers (AIChE). She received her PhD in Chemical Engineering from the University of Texas at Austin in 2004, and completed a postdoctoral fellowship at the Center for Innovative Visual Rehabilitation at the Boston VA Hospital in 2006. She is a co-founder and Chief Scientific Officer of Core Quantum Technologies, a company commercializing nanoparticle reagents for cancer diagnostics. She was named TechColumbus Innovator of the Year, Columbus Business First 40 under 40, and Columbus Business First 20 People to Know in Technology. She has received the American Physical Society (APS) Five Sigma Award, American Chemical Society (ACS) Rising Star Award and the Engineering DesignNews Golden Mouse Trap Rising Star Award; she was named to Top 25 STEM professors in Ohio; and is a fellow of the AIChE, BMES, AAAS, AIMBE, the RSC, and senior member of the IEEE.