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New Approaches to Targeted Drug Delivery JAMES COOPER, WILLIAM OLIVER, University of Arkansas, DANIEL FOLOGEA, Boise State University — For targeted drug delivery, one of the primary drawbacks lies with the inability to design a delivery system that can be loaded with a variety of drugs and biomolecules. Motivated by this challenge, we will present data showing 400 nm liposomes loaded via the novel method of lysenin pores. These pores are approximately 3 nm in diameter and can be closed with divalent and trivalent ions in addition to charged polymers. This new method allows for the controllable passage of large biomolecules such as DNA and protein without the inherent problems common to active and passive loading methods. We will show proof-of-concept results of this method using fluorescent calcein as a drug simulator. Furthermore, data demonstrating current attempts at loading DNA will also be presented.

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