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Sculpting of Nanopores in Silicon-Nitride Membranes KRISTIN LUCAS, JEFFREY L. WASSERMAN, SOO HYUNG LEE, NINA MARKOVIC, Johns Hopkins University — Fabrication of controllable-diameter nanopores in a suspended membrane is of great interest for dynamic stencil deposition techniques, as well as DNA sequencing and other applications. We have developed a method for the production of nanometer-scale pores in a silicon-nitride membrane. We punch holes in a membrane of low-stress silicon-nitride through focused ion beam or lithographic techniques. By exposing the holes to an electron beam we can shrink the pore diameter down to a few nanometers. We can also produce complex pore shapes through selective sculpting of the pore. We will discuss the details of the process and its applications.

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