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Replicating the biological function of membrane proteins with synthetic components is scientifically and technologically exciting. I describe the design and generation of membrane nanopores assembled from DNA. The DNA nanopores consist of a bundle of six hexagonally arranged duplexes which are interconnected by cross-overs. The negatively charged nanobarrels carry lipid anchors to facilitate the pores’ insertion into the hydrophobic bilayers\textsuperscript{1-3}. The pores facilitate the control transport of molecular cargo across the membrane; both voltage-gated\textsuperscript{4} and ligand-gated ion-selective channels could be built\textsuperscript{3}. Pores can also be engineered to kill cells\textsuperscript{5}. Membrane-spanning DNA pores will open up the design of entirely new molecular devices for applications within single-molecule research, biosensing, catalysis, drug delivery, and nanofluidics\textsuperscript{6}.