Abstract Submitted
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Detecting a Protein in its Natural Environment with a MOSFET Transistor[1] BENJAMIN PEREZ[2], The Society of Physics Students/ NIST, ARVIND BALIJEPALLI[3], NIST — Our group's goal is to make a MOSFET transistor that has a nanopore through it. We want to have proteins flow through this device and examine their structure based on the modulation they cause on the current. This process does not harm the protein and allows the protein to be studied in its natural environment. The electric field and electric potential of a point charge were computed within a nano-transistor. The simulations were used to see if the point charge had enough influence on the current to cause a modulation. The point charge did cause a rise in the current making the modulation concept a viable one for medical applications. COMSOL metaphysics software was used to perform all simulations.

[1]The Society of Physics Students internship program and NIST
[2]This research was done at NIST through the Society of Physics Students internship program.
[3]He worked as my mentor for my summer at NIST

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