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Molecular logic gates for biodetection provide a large propensity for multiplexing. Millions of oligonucleotide sequences could potentially be detected through input binding regions that control the logic gate deoxyribozyme core. Despite the simplicity of reaction, point-of-service application of the technology is limited by the sensitivity of detection and speed of reaction. Using sophisticated fluorescence readers, detection can be achieved in as little as 5 minutes with picogram quantities of DNA. However, without the aid of fluorescence readers, micromolar DNA quantities are required in a reaction that can be viewed by eye in 90 minutes. Our undergraduate student program aims to investigate amplification technologies and develop gate modeling software to aid point-of-service detection.