Abstract Submitted
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Induction of Electrode-Cellular Interfaces with $\sim$ 0.05 μm^2 Contact Areas[1] BRET FLANDERS, PREM THAPA, Kansas State University — Individual cells of the slime mold *Dictyostelium discoideum* attach themselves to negatively biased nanoelectrodes that are separated by 30 μm from grounded electrodes. There is a -43 mV voltage-threshold for cell-to-electrode attachment, with negligible probability across the 0 to -38 mV range but probability that approaches 0.7 across the -46 to -100 mV range. A cell initiates contact by extending a pseudopod to the electrode and maintains contact until the voltage is turned off. Scanning electron micrographs of these interfaces show the contact areas to be of the order of 0.05 μm^2. Insight into this straight-forward, reproducible process may lead to new electrode-cellular attachment strategies that complement established approaches, such as blind sampling and patch clamp.

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