



### SWOT ANALYSIS EXAMPLE

I conducted a SWOT analysis of “Characterization and Separation of Cancer Cells with a Wicking Fiber Device” by Tabbaa S.M., Sharp, J.L. & Burg, K.J.L. Ann Biomed Eng (2017) 45: 2933. <https://doi.org/10.1007/s10439-017-1909-2>. The manuscript describes the initial proof of concept studies for a new, fiber-based technology that is intended to provide predictive information about breast cancer. Overall, the technology is quite simple and exciting; however, I have noted several areas where further consideration by the researchers would significantly maximize the potential impact of the work.

#### **SWOT ANALYSIS**

**S**trengths (what are the positive features of the research? Add or subtract bullets as needed):

- The technology addresses a clinical need where there is a paucity of inexpensive, rapid turnaround predictive technologies.
- The low complexity (e.g. no electronics) may allow rapid screening in a wide variety of clinical settings with varied financial resources.

**W**eaknesses (what are the significant flaws or gaps in the work? Add or subtract bullets as needed):

- The authors do not describe any testing of cells extracted from blood or tissue – the sticky residue from blood or tissue may confound cell motility differences.
- No clinical co-authors are listed, nor does there appear to be clinical/customer input

**O**pportunities (what aspects of the work, either realized or not, might lead to future impact? Add or subtract bullets as needed):

- If the technology proves successful for breast cancer, it can be readily adapted to other clinical applications where differences in presence of cellular populations yields clinically relevant information.
- A clinical collaborator would be enormously helpful in launching the idea toward clinical reality.

**T**hreats (what are the severe weaknesses that impinge on the future success of the research? Add or subtract bullets as needed):

If the technology is reliant on circulating tumor cells, the value added is not clear (circulating tumor cells implies late stage, known cancer).