

Artificial intelligence could predict spread of melanoma

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Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

An interdisciplinary team of researchers at Ben-Gurion University of the Negev (BGU) in Israel and the University of Texas Southwestern Medical Center (UTSW) in Dallas have developed groundbreaking technology to identify melanoma cells that are likely to metastasize to

other parts of the body using artificial intelligence (AI).

The method, called "quantitative live cell histology," was presented recently at the American Society for Cell Biology/EMBO conference in San Diego by Dr. Assaf Zaritsky, of the BGU Department of Software and Information Systems Engineering, and UTSU Prof. Gaudenz Danuser.

The technology records video of cells using microscopic cameras and identifies the appearance and behavioral patterns of those cells that have metastatic potential.

The group demonstrated that their representation of the functional state of individual cells can predict the likelihood that a stage III melanoma, with malignancies limited to the lymphatic system, will progress to stage IV, in which the cancer has spread from the principal area to the rest of the patient's body.

"Beyond metastasis prediction potential, the computer models also allowed us to distinguish between [cancer cells](#) taken from different patients by quantifying factors that are not visible to the naked eye," says Dr. Zaritsky.

Provided by American Associates, Ben-Gurion University of the Negev

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