

David E. Axelrod

“Quantitative Histopathology of Breast Carcinoma In Situ”

[We will develop computer-aided methods for analysis of biopsy specimens to improve the prognosis of breast cancer .]

Approximately 6,400 new cases of breast cancer resulting in 1,400 deaths are expected this year in New Jersey.

Our goal is provide an objective and reliable method to determine which breast lesions will progress to aggressive cancers and which will not, using computers to analyze microscopic images of biopsy specimens.

Accurate prognosis is important since it affects medical therapeutic decisions. Currently, prognosis of breast lesions is based, in part, on microscopic examination of specimens by pathologists. However, some lesions are difficult for pathologists to evaluate, such as ductal carcinoma in situ, in which cancer cells are found exclusively within the ducts. We intend to develop a computer system to measure microscopic images of breast specimens. The measurements will be used to devise formulas that will help the pathologists to evaluate ductal carcinomas in situ and predict if they will recur or develop into invasive carcinoma.