Researchers at the University of South Florida have developed a computer-aided pathological diagnosis (CAPD) system designed for assessment and differentiation of cancer biomarkers as well as identification of cancer cells based on images of specimens.

Cancer diagnosis often depends on the pathologist’s interpretation of morphological features of tissue specimens. This approach is time consuming and often yield imprecise results that can be subjective. Current approaches that utilize computer-aided diagnosis of cell images are plagued by poor image quality. New and improved approaches are needed.

Our scientists have created a CAPD system that solves the problems of currently-available techniques. The CAPD system offers speed and accuracy as well as an objective analysis for improved cytology and pathology evaluations. The new CAPD system features an advanced strategy and multi-resolution techniques with modules that adapt detection parameters based on the image content requirements.

The system provides high quality images and minimizes the rate of false-positive and false-negative diagnosis.

**ADVANTAGES:**
- Computer-Aided
- Self-adjusting parameters of modules
- Highly accurate and objective results
- Multi-resolution technology
- High image quality

**Objective, accurate computer-aided pathology**

(a). Original normal cell image, (b). Original cancer cell image, (c). Cell segmentation result of normal cell image, (d) Cell segmentation result of cancer cell image, (e). Segmented nuclei of normal cell image, (f) Segmented nuclei of cancer cell image, (g) Segmented cytoplasm tissues of normal cell image, (h) Segmented cytoplasm tissues of cancer image. Microstructure features can be extracted from these images.