

ABSTRACT OF THE DISCLOSURE

Surgical stereo vision systems and methods for microsurgery are described that enable hand-eye collocation, high resolution, and a large field of view. A digital stereo microscope apparatus, an operating system with a digital stereo microscope, and a method are described using a display unit located over an area of interest such that a human operator places hands, tools, or a combination thereof in the area of interest and views a magnified and augmented live stereo view of the area interest with eyes of the human operator substantially collocated with the hands of the human operator.