Confocal microscopy has made a dramatic impact in biomedical imaging, in particular, but also in other areas such as industrial inspection. Confocal microscopy can image in 3D, with good resolution, into living biological cells and tissue. I have had the good fortune to be involved with the development of confocal microscopy over the last 40 years. Other techniques have been introduced that overcome some of its limitations, but still it is the preferred choice in many cases. And new developments in confocal microscopy, such as focal modulation microscopy (Chen, et al. 2008), and image-scanning microscopy (Sheppard 1988; Müller and Enderlein 2010; Sheppard, Mehta et al. 2013), can improve its performance in terms of resolution, penetration depth and signal level.

References: