

## **Live Cell Imaging: The past, The Present and Future Opportunities**

Simon C. Watkins

Department of Cell Biology, University of Pittsburgh, Pittsburgh, PA, USA

Over the last 10-20 years Live cell imaging has become an essential research tool that has changed the way primary research in Cell Biology is performed. Shinya Inoue can be considered the father of the approach, and his trainees and subsequent professional lineages (trainees of trainees) have led the expansion and integration of the approaches into an incredible array of primary experimental methods and tools. In this presentation I will take a relatively lighthearted view of the problems that faced live cell microscopists throughout its evolution and present examples from this history. I will then present the current state of the art which integrates microscopies, robotics, probes and computing with a few selected vignettes and close with future possibilities and opportunities and the ultimate problem that will face almost all live cell and living system microscopists in the future.