



The term “cell motility” describes the active movement of a cell, such as the crawling of an amoeba or white blood cell. In humans, a variety of cells demonstrate motility, including contracting muscles, migrating cancer cells and growing nerve cell processes that lay down one million miles of connections in the brain. Thus, cell motility plays an important role in health and disease. The protein actin is key player in cell motility in eukaryotes—organisms with cells that have a nucleus. After actin was discovered in 1942, researchers thought that it only featured in muscle contraction, where the motor protein myosin pulls on actin filaments to cause the muscle to shorten. Beginning in the 1960s scientists discovered that actin is present in abundance in all eukaryotic cells and involved in a wide variety of functions in addition to motility—including cell division and providing mechanical support to cells. Pollard’s many review articles describing the molecular mechanisms of actin in cell motility and cell division have proven so integral to this area of research that they have been cited hundreds and even thousands of times.