As a result of these policies, the US government held over 28,000 patents by 1980 and less than 5% of these applications had been utilized for commercial purposes[10]

The landscape changed dramatically in 1980 with the passage of the Bayh–Dole Act, also referred to as the Patent and Trademark Law Amendment Act. This change in US law allowed non-profit organizations (and small businesses) to maintain ownership of inventions developed using federal funding. In addition, the rights to the invention could be assigned or licensed to another organization capable of commercializing the invention. In effect, the passage of this law gave academic laboratories and their associated universities and colleges the ability to profit from scientific endeavors funded by organizations such as the National Institutes of Health, provided certain conditions were met. Specifically, preference in licensing had to be given to small businesses, the balance of royalties and profit obtained from the invention (after expenses) had to be used for scientific research or education, and a portion of the royalty must be shared with the inventors of record. This last clause provided substantial financial incentive to academic scientists to increase their focus on applied sciences, as commercialization of their research would enrich them personally.[11] Given the significant upside potential of new drug discovery and development (potentially billions of dollars in annual sales), it should come as no surprise that there has been a significant increase in the number of academic scientists exploring the science of drug discovery since the Bayh–Dole Act became law. By 2001, 12 academic drug discovery centers had been founded in the United States, and by 2013 there were over 100 centers in the United States [12] and numerous academic drug discovery centers across the globe (Appendix 1).

Modern academic drug discovery centers are typically staffed by pharmaceutical industry veterans with the skills and experience necessary to execute drug discovery programs (e.g., target validation, hit-to-lead, lead optimization, pharmacokinetic analysis, *in vivo* efficacy studies). Many highly qualified scientists entered the academic arena as the wave of mergers and acquisitions of 2000–2013 forced them out of their industrial positions. Many of these organizations also received donations of high-cost equipment (e.g., screening robots, analytical equipment, etc.) as large pharmaceutical companies have undergone mergers and closed industrial research centers in an effort to become more competitive. As a result of this influx of talent and equipment, academic drug discovery centers have been able to incorporate scientific advances in areas that are common place in the pharmaceutical industry such as high-throughput screening, robotics, *in vitro* ADME, and molecular modeling. This has enabled them to successfully execute the majority of functions that are required for early drug discovery programs (target validation, lead identification, lead optimization, *in vivo* PK, etc.). Universities and colleges have also stepped up