From Bench to Bedside, how to translate academic research and drug development

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While science and technology are now more innovative and successful than ever, their translation into novel treatments and therapeutics to address key health problems remains a challenge. Recognizing that to close the industry/academia divide, we created the SPARK AT Stanford program in which scientists from both sides work more closely together. SPARK, created twelve years ago, is a partnership between Stanford University and volunteers from the local biotechnology, pharmaceutical, and healthcare investment industries. SPARK's mission is three-fold: first, to help academic investigators overcome the obstacles intrinsic to moving research discoveries from bench to bedside; second, to educate faculty and trainees about the translational research process so that development of promising new discoveries becomes second nature, and so that trainees are better prepared for potential industry careers; and third, to promote efficient, cost-effective, and innovative approaches to discovery and development. So far, 60% of the ~100 projects have been licensed to companies and/or entered clinical trials. Through weekly meetings, SPARK's activities conducted on campus, provide a rich learning experience that is open to faculty, staff, students, and postdoctoral fellows; this ensures that the know-how remains here and that the out-of-the-box and risk-taking attitude of academia is maintained, while industry's real-life experience is implemented. We are 'exporting' SPARK to other academic institutions and formed a Global SPARK community to promote translational research in over three dozen academic institutions on five continents. I will discuss how SPARK works with the barriers to translating our academic discoveries, what academia can do about them, and how my own experience in moving findings from my academic basic research lab to a startup and approved drug, has changed what I currently do.