Where Will the Next Great Research Breakthroughs Come From?

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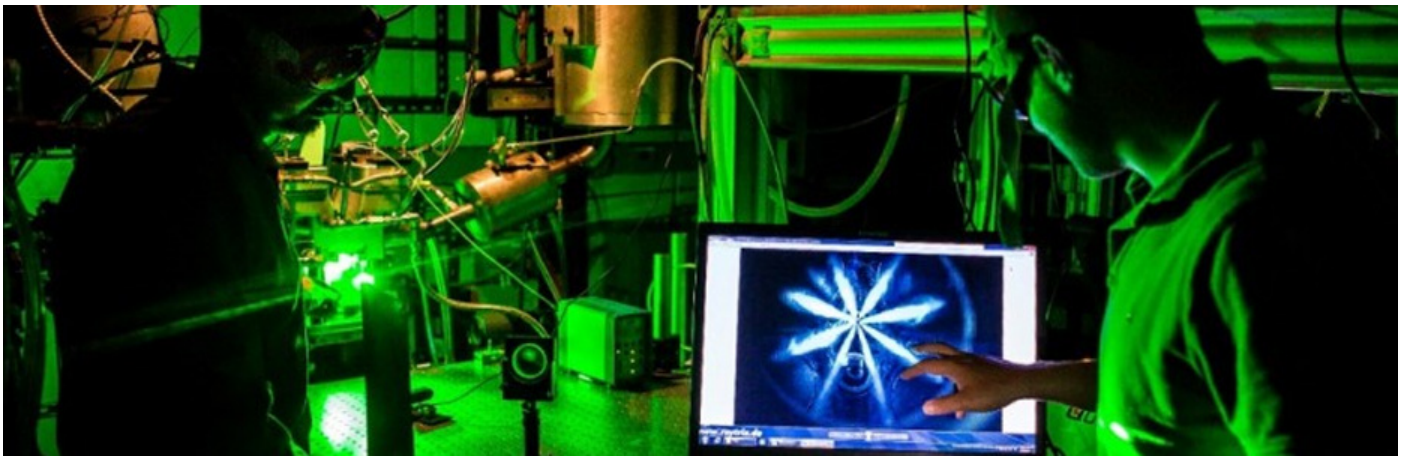

Whether your benchmark for “solitary genius” is Shakespeare, Austen, Newton, Goodall, Darwin, Einstein, Franklin, Picasso, or Da Vinci, there is a certain romanticism to the notion of the world benefiting from the solitary toil of passionate individuals committed to a goal. Credit for their work often comes much later in life, and sometimes posthumously, but the ability to persevere in your conviction in the face of harsh criticism or general non-interest is seen as being critical to transformational research breakthroughs.

Many would argue, however, that those days are over. Nobel Prizes are typically awarded to small teams of scientists who have collaborated across the globe in their research, and we continue to see the trend of collaboration between inspiration and implementation in bringing new inventions and treatments to market.

The Power of Collaboration

Lennon had McCartney, Gates had Allen, and while Steve Wozniak came up with the design for the first Apple computer, it might well have stayed in the Homebrew Computer Club without Steve Jobs recognizing its potential. The collaborative process is

more reflective of the rougher journey of research breakthroughs. Newton may have had his apple, but most breakthroughs come not from the apocryphal light bulbs, but from dogged determination in trying different approaches in sequence and notating and refining each step. The so-called “flashes of inspiration” such as Archimedes’ Eureka moment are more likely attributed to heuristic techniques than divine intervention. Einstein’s alleged inspirations about the nature of space and time, for example, came during rest breaks after months of intense mathematical exercises.

Diversifying Your Risk

As the cost of research continues to increase–large labs with multi-million dollar equipment budgets–the willingness of those stakeholders funding the research to pin their hopes and dreams on the ability of one genius to have the right flash of inspiration at the right time in the project timeline is never going to happen. Capital investment is accompanied closely by risk analysis, and whatever risk assignment is assigned to the research study has to be diversified across a team of highly qualified and experienced professionals committed to the same goal. Every team has a designated leader, but large-scale research products funded by impatient corporations may have multiple leaders–scientists, marketers, and finance specialists.

Hedging Your Bets

Without a firm commitment of federal funding to address large-scale research projects such as the Human Genome Project or President Obama’s BRAIN initiative, future research breakthroughs are going to depend on whoever has the deepest pockets. Billionaires have the money to underwrite entire research centers but only for the projects that are of interest to them. Corporations, on the other hand, appear to be going in the other direction. Why invest capital in the risky proposition of science research when you can just sit back and accumulate the capital you need from your daily operations and then buy the companies that produce the new breakthroughs?

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