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editorial

Mary Bradley

If you want to shoot for the moon, you gotta have the right stuff

Last month I attended the Partnering for Cures meeting in NYC, and afterward one of my fellow attendees, Sean Ekins, blogged about his view of the meeting; I have to say that I agree with most of Sean's observations: networking was great, innovator presentations informative, and panel discussions memorable for all the wrong reasons.

In one panel discussion the phrase 'moon shot' was tossed around a lot. So much so that I can't recall what the topic of the panel actually was, just that this is our 'moon shot'. I guess I began to obsess about what does this phrase actually mean? I suppose 'moon shot' is the same as 'aggressive target', but way sexier. So what's our aggressive target? Getting medicines to patients faster. Really? This is such a challenge, a long shot dream, that we equate it to walking on the moon in the days when phones were bolted to the wall? I mean, there are already a lot of drugs on the market that patients are taking so it's not like we don't know how to do it. Compared to building a spaceship and training an astronaut to walk on the moon, finding new drugs should not be that hard. So why are there so few new drugs on the market, and why are some people using *their own money to fund drug research* for their sick kids? It's because we don't run drug discovery like NASA ran the Apollo program.

In a famous speech, President Kennedy put forth the imperative for space travel: '*We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win...*' [1]. This compelling vision galvanized a nation and demanded action. Where is the imperative for curing disease that will galvanize the research community and demand action to overcome the barriers to finding new drugs?

The Apollo program brought together the best minds in the country from across multiple disciplines with a common goal: get a man to the moon and back by the end of the decade. The scientists who rose to this challenge were incredibly united on the mission, they felt a sense of urgency, and they worked together to achieve results. At its peak, the Apollo program employed 400,000 people and required the support of over 20,000 industrial firms and universities.

Today there are more than 400,000 people directly employed in drug research, in well over 20,000 industrial firms and universities. Rocket scientists aren't smarter or harder working than drug researchers. It appears we have a critical mass of talent for our moon shot, so what's the hold up? Drug research today is silo-driven, inefficient, and non-integrated. Obsolete technologies, duplication of efforts, lack of data, too much data, lack of data sharing are just the tip of the iceberg. I doubt that NASA scientists and engineers on the Apollo program had a problem sharing data, or wasted time and effort by duplicating experiments because of poor communication. I'm sure it may have happened by accident occasionally, but it was certainly not the norm.

Robert C. Seamans, Jr., Administrator Energy Research and Development Administration at NASA recalls: 'From my present vantage point ... I see more clearly that Apollo was as

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much a triumph of organization as of anything else.' 'No single Government agency nor institution nor corporation can perform alone the tasks associated with reaching major national objectives. Apollo was an outstanding example of how governmental agencies, industrial firms, and universities can work together to reach seemingly impossible goals' [2].

To take a small step for a man or a giant leap for mankind, you have to walk the talk. In the case of finding new cures faster, talk is cheap; we must change our outlook, change our culture, and work together to reach today's seemingly impossible goals.

References

1 John F. Kennedy Presidential Library, http://www.jfklibrary.org/Research/Ready-Reference/JFK-Speeches/Address-at-Rice-University-on-the-Nations-Space-Effort-September-12-1962.aspx

2 Cortright, E.M., ed. (1975) *Apollo Expeditions to the Moon*, Scientific and Technical Information Office, National Aeronautics and Space Administration, SP-350 In: http://history.nasa.gov/SP-350/intro.html

Mary Bradley
One Mifflin Place, Suite 400, Cambridge, MA 02138, United States
E-mail: mary.bradley@collaborationfinder.com