Reply to the Letter to the Editor by Diamandis

In Response: In responding to my recent guest editorial, Eleftherios Diamandis makes a plea for investment in the “youth” as a way to recruit the brightest minds and most innovative ideas to the cause of cancer research. While I embrace this concept wholeheartedly, it seems that Diamandis misses the point of the editorial and I must take issue with the rationale expressed in the response and the mechanisms proposed to tap the creative font of youth.

Diamandis lays out a somewhat jaded, and mostly inaccurate, picture of the academic world. There are very few laboratories that host 30 to 40 postdoctoral fellows, and while a few scientists do accumulate significant frequent flier miles, this is not the norm and certainly very few aspire to “celebrity scientist” status. Although the burden of administration does indeed increase with advancing years, in my experience, the elders in the scientific community become more, not less, dedicated to finding cancer cures in their twilight years.

Postdoctoral training comes in many shapes and forms. However, those seeking mentorship and hands-on training in scientific method are advised to choose moderate-sized laboratories rather than a “mega-lab”—which provides a different, although not necessarily inferior, kind of training experience. There are many career paths and opportunities within the realms of cancer research, and the majority of scientists and fellows I have encountered have no inclination to preside over the kind of business enterprise outlined by Diamandis. Most laboratories do not continue to grow in size. In fact, the small laboratory environment is still the most creative, productive, and cost-effective scientific research unit. The reality of the situation is that not all trainees have either the aspiration or the ability to manage a large laboratory. In fact, many individuals devote themselves to fulfilling important functions in a team environment in which the collective effort exceeds the grasp of any individual. It is important to recognize that these are worthy and by no means lesser goals.

Science is a competitive enterprise. New ideas constantly challenge the status quo and only those with merit survive and thrive. This is also the case with scientists, at every step, they are faced with strong selection pressure and there is never a point when it possible to simply rest on past laurels. Indeed, creativity and hard work are not the exclusive domains of the young—Fred Sanger was no spring chicken when he completed the work that led to his second Nobel Prize. Yet how should we empower and encourage the next generation? I submit that the solutions suggested by Diamandis, to provide all M.D.’s and Ph.D.’s carte blanche for 10 years would be a disaster. Similarly, funding Ph.D.’s at a success rate above the 50% level for 10 years would not enhance scientific creativity and quality. The much-maligned peer review system has several positive aspects—including the frequent reality check that comes with grant renewals. Placing a ceiling on total grant funding of $500,000 would immediately put a stop to the kind of translational research team efforts we are trying to encourage that require large multidisciplinary groups. So what can we do if we don’t have a magic elixir from the fountain of youth? Perhaps we should support a highly competitive system that rewards excellence? Perhaps we should use young scientists on peer review panels and editorial boards to keep the cutting edge keen? Perhaps we should provide a forum, such as the pages of Clinical Cancer Research, for the youth as well as aging professors, who like to express even the most off-the-wall ideas and, if we disagree, we should still complement their energy, provide constructive criticism, and spur them on to greater efforts in the future?

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Lost in (the Business of) Translation: Invest in the Youth

Eleftherios P. Diamandis


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