

LETTERS TO THE EDITOR

Precision medicine's bold leap

Re "'Moonshot' medicine will let us down" (Opinion, Jan. 30): Michael J. Joyner paints an unduly pessimistic and narrow portrait of the emerging wave of "precision medicine." This new genome-based field is, in fact, a necessary step toward what likely will be the future of preventing and treating disease. To naysay it because of the complexities is akin to scoffing at, to borrow Dr. Joyner's metaphor, a mission to the Moon at the dawn of the Space Age.

As Dr. Joyner correctly notes, the problems facing this nascent area of research cannot be solved with "linear engineering exercises." They are indeed dynamic, extraordinarily so. But that does not make them unsolvable — or Sisyphean. Ask scientists developing robotics, 3-D printing or artificial intelligence algorithms, and they'll readily acknowledge the multidimensional nature of their enterprises.

Moreover, Dr. Joyner seems to equate precision medicine with genomics, which is only one (intriguing) tool. Other components include more conventional diagnostics: metabolism, hormones, proteins, blood and the chemicals underlying our biological clocks and other biomarkers to better tailor diagnosis and treatment.

Perhaps President Obama engaged in laymen's hyperbole when he explained precision medicine in his State of the Union address last month. Allow me to clarify: Genes are not necessarily destiny; they can change naturally, in a dynamic and delicate genetic-environment interaction that manifests in human disease and behavior in complicated ways. Interventions, lifestyle choices and the environment can also alter them over time — all the more reason to assess all available information about individuals.

Yes, a precision medicine approach to intervention will sometimes fail; there will be false starts, dead ends, dashed dreams. The definition of precision medicine, and even the name, likely will evolve over time, too. Still, this bold new course potentially represents a huge leap for humankind.

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