PITTMED

PUBLISHER
Arthur S. Levine, MD

EDITOR IN CHIEF
Erica Lloyd

ART DIRECTOR
Elena Gialamas Cerri

SENIOR EDITOR
Elaine Vitone

ASSOCIATE EDITOR
Gavin Jenkins

CONTRIBUTING EDITOR
Cara Masset

PRODUCTION MANAGER
Chuck Dinsmore

CIRCULATION MANAGER
Christopher Baldwin

INTERNS
Charlotte Couch, Adrianna Moyer

EDITORIAL ADVISORS
Lisa Barsom, PhD
Jeremy Berg, PhD
Michelle Broido, PhD
Paula Davis, MA
Robert Ferris, MD/PhD
Joan Harvey, MD
Joshua Levenson, MD '11
David Lewis, MD
Margaret C. McDonald, PhD, MFA
Loren Roth, MD
Steven Shapiro, MD
Chuck Staresinic
Peter Strick, PhD
Ann Thompson, MD
Bennett Van Houten, PhD
Simon Watkins, PhD
Marshall Webster, MD, Res '70

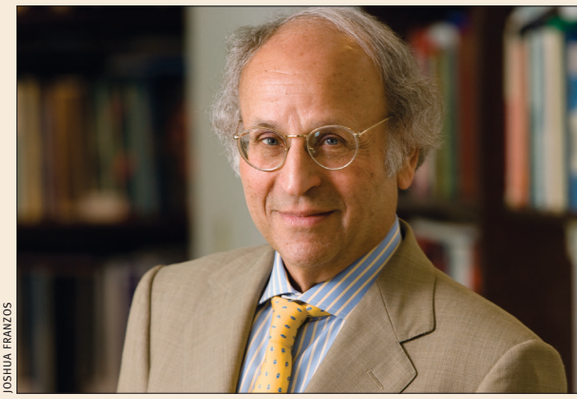
EXECTIVE DIRECTOR, MARKETING AND MAGAZINES
Cindy Gill

University of Pittsburgh

Pitt Med is published by the Office of the Dean and Senior Vice Chancellor for the Health Sciences in cooperation with the Office of University Communications. It is produced quarterly for alumni, students, staff, faculty, and friends of the School of Medicine. PR 6742

The University of Pittsburgh is an affirmative action, equal opportunity institution. © 2017, University of Pittsburgh

Have you ever watched a crab on the shore crawling backward in search of the Atlantic Ocean, and missing? That's the way the mind of man operates.
—H.L. Mencken


JOSHUA FRANZOS

Imagine you have a heart attack. You are rushed to the hospital and treated immediately. You're given an aspirin; then the cardiologists remove the blockage and insert a stent to shore up your artery. You are also given a drug called clopidogrel (Plavix) or another anticoagulant. Here's the rub: For almost one-third of such patients, clopidogrel is not effective and fails to prevent another coronary artery clot—even one that may be lethal.

Philip Empey, a faculty member in our School of Pharmacy, was among the senior authors this October on a landmark paper from a multisite study demonstrating that patients carrying a certain gene allele will not respond to clopidogrel; the drug is not effectively metabolized. UPMC Presbyterian cardiologists have begun to assess which patients carry the allele by a simple test of their genomic DNA during hospital stays.These patients can then be given an alternative therapy. This is what precision medicine looks like. Can you imagine how many lives will be saved? How much waste in the health care economy will be avoided? As we harness the power of big data and also advance our knowledge of basic human biology and genomics, we will be able to achieve these kinds of results with drug after drug.

And Pittsburgh has, in short order, become a model for the nation—for many reasons that I don't have room to discuss here. Because we are positioned so well, the first enrollees of the National Institutes of Health's All of Us program, which will sequence the genomes of one million people, are coming through our medical center. (The Western Pennsylvania arm of the program is called PA Cares for Us—sign up to make history!) Pharmacogenomics, the area of precision medicine that gave us the clopidogrel insight, is the low-hanging fruit; approaching the chronic, complex illnesses, e.g., cancer and Alzheimer's disease, with genomics is considerably more challenging. Yet a recent case report shows what's possible: a boy cured of a lethal skin disorder, epidermolysis bullosa, which destroys the entire skin. Doctors in Europe harvested stem cells from the boy's marrow, genetically engineered the cells to correct the mutation that causes the disease, grew sheets of these corrected skin cells in the lab, and then grafted the sheets onto the boy.

Of course, there's more to who stays healthy than how our DNA sequences read. The World Health Organization breaks down causes of premature death this way: 30 percent of early deaths are attributed to genetics, 10 percent to what health care providers do (or don't do), 40 percent to individual behavior, and 20 percent to social, environmental, and economic factors. The latest generation of physicians is especially motivated to address that last component. Getting to the doctor on time, or at all, is a lot more difficult when it involves a 90-minute one-way bus ride with oxygen tanks in tow. Alumna Jodie Bryk and her colleagues are helping people navigate the labyrinth that poverty, psychologic make-up, policy, and other social and environmental circumstances erect to good health. (See p. 21,"Home Again.") Bryk et al. are mastering the high art of preventive care.

Assuring good health for all of us is work that requires great resolve, intent, and wisdom. My dear reader, each of us must contribute to that work if we are to have an enlightened society!

Arthur S. Levine, MD
Senior Vice Chancellor for the Health Sciences
John and Gertrude Petersen Dean, School of Medicine