PITTMED

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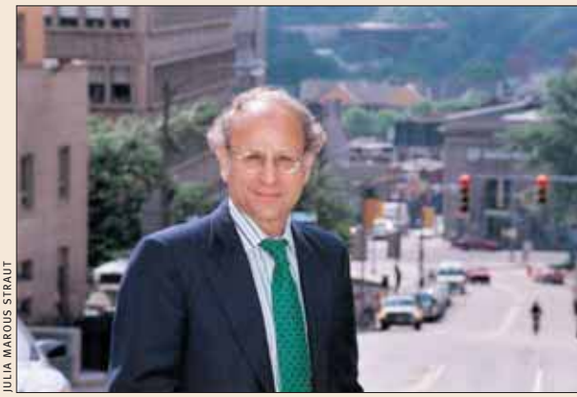
University of Pittsburgh

Pitt Med is published by the Office of the Dean and Senior Vice Chancellor for the Health Sciences in cooperation with the alumni and public affairs offices. It is produced quarterly for alumni, students, staff, faculty, and friends of the School of Medicine. PR 5604

Know thyself? If knew myself I'd run away.
—Johann Wolfgang von Goethe


JULIA MAROUS STRAUT

Our lives are mostly a constant evasion of ourselves, T.S. Eliot suggested. Likewise, the study of medicine has evaded a fundamental science that promises to tell us much about ourselves and our health. But that's changing here at Pitt.

We're partnering with the Carnegie Museum of Natural History to infuse evolutionary biology into our way of thinking about medicine. Without the robust context the study of evolution adds, we risk missing critical way points leading to a fuller understanding of the origins of human illness and new avenues for prevention and treatment. Indeed, human health and illness can best be understood not only in a cultural, social, and economic context, but in an evolutionary one as well. Our med students are already immersing themselves in a paleobiology elective, and others are undertaking their required research project with Chris Beard (a museum curator and MacArthur Fellow).

John Lazo, Pitt's Allegheny Foundation Professor of Pharmacology, is on the museum's board and fostered this partnership. John has been known to show audiences a slide of a tumor from a Jurassic dinosaur. It's a reminder that cancer has been around for a very long time—and is not just a byproduct of smoking or other contemporary pollutants. So how did creatures from 150 million years ago develop cancer? And what about the prehistoric animals that didn't?

Sharks very rarely get cancer. Investigators have revealed that the shark's immune response occurs much more rapidly than ours—preformed antitumor antibodies are at the ready in the bloodstream; the shark's immune system apparently needn't wait for the cascade of molecular events that gets ours churning. Why are our immune systems different from theirs? What can sharks tell us about cancer? Olivera Finn, chair of our immunology department, would probably like to know as she delves into how the human immune response might be honed to further detect and deter cancer. (Turn to page 28 for that story.)

We can expect the benefits of studying evolutionary biology to reach much more broadly than informing our understanding of oncogenesis. As the editors of *Science* noted in their Feb. 24 editorial, "the narrowness of the birth canal, the existence of wisdom teeth, and the persistence of genes that cause bipolar disease and senescence all have their origins in our evolutionary history." They make a plea to recognize evolution as a basic science of medicine.

Although we might like to believe that "there is nothing new under the sun," evolution gives that the lie—at least with respect to our understanding of human biology. Indeed, our knowledge of human health and illness will profit greatly when we learn—starting presumably with the big bang—about the entire history of our molecules and cells.

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