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Bridging Big Data and Clinical Practice

In the last several issues, Dr. Bland has had the opportunity to interview several individuals—Dr. James Fries, Dr. Leroy Hood, and Dr. Eric Schadt—who, in their respective fields of study, are advancing the concepts of systems biology and transforming medicine based on lessons learned (and data gathered) in the genomic era in which we now live. But how do these big data projects and longitudinal studies translate to the world of the practicing clinician? What applications are there now and what applications will be coming in the near term? How long will it take for new guidelines to appear that will influence standards of care in the way the Framingham Heart Study did in the second half of the 20th century?

It is these questions—and more—that Dr. Bland uses the forum of the August issue to explore and address. Using the synthesis style he has become known for, Dr. Bland gathers information from articles taken from the medical literature, both past and recent, as well as from some trade journals (most specifically those focused on the pharmaceutical industry), which can also provide some valuable insight. He breaks down the current applications of genomic information into three key areas: oncology, genetic diseases of metabolism, and chronic degenerative diseases.

Next month—September—will feature an interview with Dr. Jennifer Lovejoy, who is overseeing the patient component of the Pioneer 100 project, the ambitious study currently underway at the Institute for Systems Biology in Seattle. In this study, participants not only agree to an intensive analysis of their genetic and physiological information, but also of their lifestyle factors using tools such as questionnaires and interactive coaching. In short, Dr. Lovejoy is not crunching numbers (that task falls to other scientists working on the project), but rather she focuses on the aspects of the study related to patient interaction: the tools used to gather information from them and the communication techniques used to translate information about their data in meaningful ways.

With his August commentary and the September discussion that will follow, Dr. Bland hopes to connect FMU subscribers to information about how genomic studies will impact their clinical practice and patient interaction in the not-too-distant future.

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