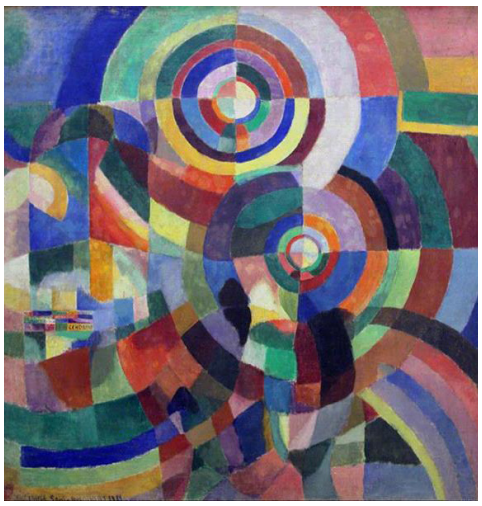

Foreword

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Let us not train our future colleagues merely to replace us. Let us, instead, create the conditions that will enable them to redeem us. After reading the diverse essays in this volume, I believe you may share this thought—and join me in considering how we might achieve it.

As a profession and a discipline—if perhaps not as individuals—humility has always been medicine's greatest ally. Without it, change would not be possible. Yet, we relentlessly quiz our students to ascertain whether they have sufficiently incorporated into their memory banks what is. This has value and, whether we like it or not, is a necessity. But when was the last time you asked a student to "tell me something I'm wrong about"?

This brings to mind a familiar quotation, delivered to students by a past dean of this medical school's faculty, Dr. Charles Sidney Burwell: "Half of what we are going to teach you is wrong, and half of it is right. Our problem is that we don't know which half is which."

Readers often assume that Burwell was referring to disease mechanisms and treatments—and it is likely that in the middle of the 20th century, he indeed was. Today, that sentiment, repeated verbatim, remains correct. But I suspect its truth may now apply less to the *science of medicine* than to its *practice*. What good is knowing that new medications are somewhat superior to their predecessors when our systems are incapable of delivering them to populations most in need? We may now be teaching less of what is wrong, but still failing to teach what matters.

So, some good news: One thing we have recently done well, as a faculty, as a field, is to recruit students who, finally, are alert to this as a *primary concern*, rather than as an afterthought. However, having told them just how important this is, should they not be expected to observe that we have, as yet, failed to adequately achieve our values?

Fortunately *(perhaps uncomfortably for you and me)*, they have noticed, and they are growing impatient. This should not threaten but hearten us. There is nothing more powerful, nor worthy of our support, than students seeking to right

wrongs they encounter. Herein, you will find eight illuminating and fresh examples of that. Among the essays that follow, the number that could have (or likely would have) been written just 15 years ago is approximately zero.

Consider these notes from my readings of the essays contained in this volume.

- Most Americans can't name a living scientist. What can we do about that? How many lives will *that* save?
- Just how fragile is our commitment to workforce representation? What do we stand to lose if we quickly buckle under just a little bit of pressure?
- Can we change medicine's business model so that recent breakthroughs in preventive medicine are properly valued?
- Are we, by virtue of living and practicing *precisely here*, becoming too complacent? Are we as insulated from rapidly growing anti-scientific currents emanating from elsewhere as we wish to believe?
- What ceilings do we impose when we optimize for outcomes ("top-down") rather than processes ("bottom-up")?
- If we wish to save lives today, why are we focused on emerging technologies when the actions with the greatest potential to achieve this reside in something already well within grasp: restoring trust.
- Examinations—of which the various medical boards are the "final boss"—really do reveal what we value. How can we claim to embrace change when the requisite curricula and rite-of-passage ordeals reinforce the status quo, and even gatekeep against those who would seek to overturn it?
- When will we finally leverage our prodigious information technology effectively?

So, apparently, if you ask eight Harvard Medical Students to declare their wishes for the future of medicine over the next 25 years, you receive eight vastly different, but equally insightful answers—at least on the specifics.

But I could not help noticing that each essay landed upon a shared answer, a conserved residue, if you will: process over outcome. The students have, in a sense, articulated a medical and public health analog of the Miller–Urey experiments, in which four basic ingredients found on our planet's early environment (methane, water, ammonia, and hydrogen) spontaneously yielded amino acids when exposed to electricity.

When it comes to progress on the scientific front—the kind that we may well assume Dean Burwell was invoking—it's true that outcomes (patient-centered ones above all others) are what matter. But if we cling to outcome-orientation when reimagining our *field as a whole*, we may too easily fall prey to the forces of ideology. Yes, we'd like to believe that when "we" are in control, the right goals will be pursued, and that better and more righteous care will emerge. But what about when we are not in control? And what about those instances in which, perish the thought, we are wrong? If we heed the shared wish found in these essays and embrace the ethics of process-oriented approaches—that is, if we insist on a set of values in each and every of our endeavors—then, in time, **the results we hope to see will simply become *inevitable*.**

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