Preface



It is an honor to be asked to write this volume, although I must admit it has been an arduous and stressful task. In agreeing to write it, I expressed my intent to present the information in a way that would be accessible to readers that lacked an advanced science education. My editors gracefully agreed. I believe that science is for everyone, not just for a few initiated in the art. An important part of my job is to share what I've learned with members of the community that surrounds and supports me. My first love is running a research lab, but I also enjoy spending time in the local community demystifying science for my neighbors. My intention here is to bring that spirit to the subject at hand — RNA therapeutic research and its potential impact to our daily lives.

For a variety of reasons, I find myself walking in many worlds. I have partied with bikers, danced with ballerinas, performed on stage with guitar in hand. I've wrenched on motorcycles with locksmiths and lawyers, had lunch with Nobel Laureates,

conversations with Congressmen, and I've spent hours talking to people recovering from addiction. No matter who you are or where you are from, you are my peer. I take great pleasure in talking to people, learning about their life, and freely exchanging ideas. I am interested in learning as much as I am in teaching. I am grateful for the blessings that have been bestowed upon me by my family, the education I received, and the opportunities the I have been given. It is my strong desire to share what I have learned with *everyone*, not just specialists. Just because someone isn't trained in the chemistry of RNA doesn't mean RNA won't impact their lives directly.

It is my duty to provide a fair and honest appraisal of the science I describe in this book. My job as a scientist is to discover new things and to share that information freely. That's where it ends. I am not a policymaker, nor do I make the rules. Everyone has a role to play when deciding how science impacts society. That's just as true for RNA research as it is for fiscal policy. Throughout this book, I have shared my opinion on several matters important to me. Please understand that these are simply the opinions of one man, no more or less important than anyone else's. Having said that, I have made it my mission to have an *informed* opinion and justify it with data.

Specialists may find aspects of this book overly simplistic. I apologize for this, but some simplification is needed to ensure the big picture is not lost. Like a tattoo, when you try to add too much detail in too small of a space, the artwork falls apart and the lines get blurred. I have done my best to summarize the state of the field, but I have certainly skipped over several key advances in the name of brevity. Please know this was not done out of malice, but instead

with a mind towards preserving intelligibility. Where possible, I provide references to comprehensive reviews that will provide more details to those interested in learning more. I will also admit to recency and proximity biases in my research for this text. I am fortunate to work at UMass Chan Medical School which houses a thriving community of RNA researchers. Their ideas have crept into my head more frequently than others simply because they are near. To be clear, excellent RNA research is happening in all corners of the globe. I have also tried to interject a few personal stories in hopes that it will make the content more relatable. I do this not with an intent to overshare, nor out of a sense of vanity, but to help convince others that scientists are human too, full of doubts, fears, and failures.

Finally, I am not a medical doctor, and nothing in this book should be construed as medical advice. The therapies described herein should only be considered by a trained clinician with a clear view of the risks and benefits for the patient. I am not a stakeholder in any biotechnology or pharmaceutical company, and I do not stand to profit financially through sales of medications or shares of companies mentioned in this book.

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