The area abounds in open problems that are as attractive as they are challenging. How should someone with the ambition to solve one of these get started digesting all the advanced foundational material just mentioned? Until recently, the answer was not so obvious, but now there is Bjorn Poonen’s book *Rational Points on Varieties*. The prerequisites, although by no means negligible, are relatively modest, and the efforts required in acquiring them are well-spent anyway. The reader should be mature enough to realize that precise definitions and statements, together with examples and exercises, go a long way towards developing the proper intuition for a subject, and that reading detailed proofs can in many cases best wait until the bigger picture has become familiar. And this is the way Poonen’s book has been organized, presenting the basic concepts and their properties in a coherent and friendly manner. There are many illuminating and instructive examples, many sketches of proofs, and copious references to the literature for the details that have been omitted.

*Rational Points on Varieties* is an essential and indispensable resource for anybody who wishes to do cutting-edge research in arithmetic geometry. While the emphasis of the book is not on new results, all readers who make their way through even half of all the material presented are ready to prove new theorems of their own.

**Biographical Note**

**Bjorn Poonen** is the current Distinguished Professor in Science at MIT. Before arriving at MIT in 2008, he received an AB from Harvard and PhD from the University of California at Berkeley and then held academic positions at MSRI, Princeton, and Berkeley. Poonen’s research lies principally
in number theory and algebraic geometry. He is a Simons Investigator, Fellow of the AMS, and member of the American Academy of Arts and Sciences. His awards include the Chauvenet Prize for exposition, the MIT School of Science Prize in Undergraduate Teaching, a Miller Professorship, and the Guggenheim, Packard, Rosenbaum, Simons, and Sloan Fellowships. He is a principal investigator in the Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation, and he served for 14 years as founding managing editor of *Algebra & Number Theory*. Twenty-six mathematicians have received a PhD under his supervision.

**Response from Bjorn Poonen**

Any prize such as this is also recognizing the interest of the subject it covers, whose historical and ongoing significance is summarized well in the citation. So surely I am indebted to the many researchers who, motivated by classical Diophantine equations, developed this beautiful subject connecting number theory and algebraic geometry. I have been lucky enough to have a few of these researchers as my teachers, and to pass on the knowledge to my students, many of whom have helped improve my book over the years 2003–2017 during which it was written.

On a personal level, I find it very rewarding to be honored for this, the single mathematical project that I have devoted more of my life to developing than any other. I thank the National Science Foundation, Simons Foundation, Packard Foundation, and Guggenheim Foundation for having faith in me, for their long-term support during the writing of my book. I am happy that I published my book with the AMS, and I thank the AMS staff for their assistance with it. Finally, I would like to honor Paul and Virginia Halmos for their vision to endow a prize that reminds us all of the value of good writing.

**Credits**

Photo of Bjorn Poonen is by Justin Knight.