Computability and complexity of Julia sets.
Michael Yampolsky, University of Toronto

Computer-generated images of Julia sets are among the most familiar mathematical, enjoyed both for their beauty and for the deep theory behind them. In a series of works with M. Braverman and others we have put to the test the modern paradigm of numerical stimulation of chaotic dynamics, and asked whether images of Julia sets can always be computed if the parameters are known. I will describe some of the surprising results we have obtained.