Mikhail Stephanov, Associate Professor of Theoretical Nuclear and Particle Physics at the University of Illinois Chicago, will present his work on the phase diagram of QCD. Quantum Chromodynamics, the theory of strong interactions, is one of the most remarkable theories of Nature. Its mathematical foundations are concise, yet the range of phenomena that the theory may describe is very broad and diverse. The phase diagram of QCD as a function of temperature and net baryon density has been a closed book for theorists for many years. I shall review the recent progress in understanding the QCD phase diagram, discuss outstanding problems and outline strategies for testing the predictions in heavy ion collision experiments.