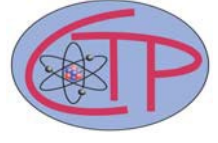




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Center for Theoretical Physics



Baryogenesis: Why Is the Universe Made Only of Matter?

Presented by

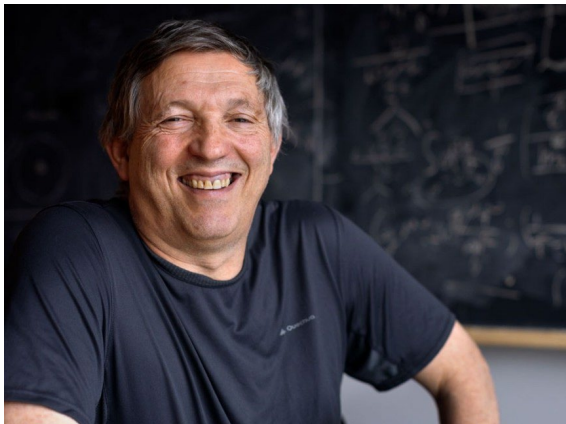
Prof. Yuval Grossman

Cornell University

Thursday, April 11 at 12:00 noon

In person

Room 801, NAAM Building



It is a well-established fact that antimatter exists: Any charged particle has an antiparticle with an opposite charge. For example, the positron is the anti-particle of the electron. Yet, anti-matter is very rare, there is much more matter in the universe than anti-matter. We only observe anti-matter in cosmic rays, radioactive decays, and nuclear processes. Given the fact that anti-matter seems to be an exact mirror image of matter, there is no apparent

reason for matter to dominate our universe. The explanation for the fact that anti-matter is so rare is an open question in physics. In this talk, we will discuss the puzzle and the progress that has been made so far in solving it. While the exact mechanism that makes our universe dominated by matter is unknown, a lot of progress in addressing the question was made. We know that it all occurs very early on, within the first second of the Big Bang. We will close the talk by reviewing some of the outstanding ideas that can be the solution to this long-standing puzzle.