1154-85-814 **Demond C. Adams*** (demond_adams@yahoo.com). Hyper-Dimensional Space-Time Topology and the Riemann Zeta Function: Applications in a Dimensional Field Theory.

Mathematics describes the logic of numbers while physics explicitly explains the laws of nature, yet somehow these separate disciplines appear eternally and intrinsically related. We can not describe nature without referencing physics and we cannot describe physics without introducing mathematics. Are these distinct constructs derived from a similar study "the logic of nature", or is this a coincidental aspect of nature's mystery? Mysteries in Physics and Mathematics - Run away galaxies caused by Dark Energy, clusters of celestial objects held together by Dark Matter, and the force of gravity persists as an unsolved mystery riddling the best minds mankind has ever known. Furthermore, unanswered truths regarding the fundamental mysteries of the Riemann Zeta Function remain elusive. Are these unsolved mysteries found in physics and mathematics related? In this talk, I will discuss the motivation of applying mathematics to physics and argue its cohesive interplay in guiding our investigations of nature. I will use the Riemann Zeta Function as an independent distant ladder to measure the topology of space-time and determine the red-shift divergence of galaxies described as Dark Energy. (Received September 10, 2019)