Supernova Remnants and neutron stars are among the most fascinating and extreme objects in the Universe, allowing us to probe a range of astrophysical phenomena unattainable on Earth, while offering opportunities to bridge research areas and astrophysics communities. After describing briefly my journey into Astrophysics and this exciting field, I will highlight some of the exciting discoveries and the lessons we learnt in the process of studying these exotic objects the past few decades, with focus on high-energy observations. I will also introduce the relevant and emerging field of multi-messenger, gravitational wave astrophysics. Finally I highlight emerging scientific questions driving new technology for future astrophysics missions with Canadian involvement.