Energetic proton beams have distinct features that set them apart from photons and make them desirable for cancer therapy as well as medical imaging. Proton computed tomography (pCT) solves one important problem related to X-ray CT-based proton treatment planning: the relatively large uncertainty in the exact position of the Bragg peak. Our project aims at making pCT a reality in a proton treatment environment. We present an overview of the pCT project, including some brief historical remarks, the physical and mathematical basis of proton CT, and a description of the collaboration among the three participating institutions: Northern Illinois University (NIU), Loma Linda University Medical Center (LLUMC) and the Santa Cruz Institute for Particle Physics (SCIPP). The research plan, theoretical advancements and hardware developments for proton tracking information collection and processing are addressed. Highlights of recent improvements in modeling proton paths in materials and subsequent image reconstruction methods are presented.