On the eve of my retirement I am grateful for this opportunity to look back at my 34 years researching colicins and other bacteriocins. Major advances in bacteriocin research came with the advent of gene cloning and improvements in DNA sequencing in the late 1970s that eventually led to an understanding of the importance of three different sets of protein-protein interactions; those between the cytotoxic domains and their immunity proteins, between the receptor-binding domains and their cell surface receptors; and between the translocation domains and periplasmic Tol proteins.

In parallel with studies on protein folding of immunity proteins, it became clear that the unique ability of colicins, of being able to deliver a folded enzymatic cytotoxic domain across two membranes of an E.coli cell, made use of some of the fastest rates of protein folding and some of the highest affinity protein-protein interactions that have been observed in nature. Structural biology techniques have been increasingly used to solve the structure of complexes of colicin domains bound to receptors, Tol proteins, or immunity proteins.

In my presentation I will look back at the beginnings of my colicin research, review some of the advances made in the areas of molecular recognition and translocation, discuss two unresolved questions, and speculate on the future of research with colicins and other bacteriocins.