

Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR), together with associated sequences (*cas*) constitute the CRISPR-Cas system, which provides adaptive immunity against invasive elements in many bacteria and most archaea. Recently, the CRISPR machinery has been repurposed to drive the Cas9-enabled genome editing craze. Actually, the democratization of CRISPR-based technologies in the past three years hinges on the portability and functionalities of these molecular machines, and has revolutionized biology. I will look back on the historical milestones that have paved the way for the CRISPR era, and discuss the diverse historical and contemporary applications that have impacted and continue to shape the fields of Medicine, Ag, Food and Biotechnology. Lastly, I will consider the impacts this transformative field has had on science and beyond.