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Sommario/riassunto	<p>Bacteria are among the earliest forms of life on Earth. Notwithstanding their small size and primitive origin, bacteria still have a tremendous impact on everyday human life. Over the centuries, research into bacteria have provided and enriched the fundamental biological knowledge due to their readily measured processes and effects on higher organisms. Although molecular genetics and microbiology were among the scientific fields that have mostly benefited from the discoveries made in bacteria, our current state of knowledge has gone beyond what anyone could have ever imagined. The present Research Topic aims to cover new and exciting broad aspects of the importance of bacteria to human life, both positive and negative influences.</p> <p>Regulation of bacterial gene expression, replication and segregation control mechanisms, cell to cell communication via quorum sensors, and the relatively recent finding of bacterial immunity via CRISPR, have led to the development of many, and very important new tools in biotechnology and the emerging field of molecular medicine. The battle against infectious diseases has also benefited from the genetic approaches that have been developed in the quest for finding new targets and novel drugs against pathogenic bacteria. At the next level, the human microbiome project has opened up new avenues in understanding the role of bacteria in human health and wellbeing. Finally, the relationship between bacterial infections and human cancers will also be covered, a subject that is still under verification</p>

through rigorous experimental approaches. Special emphasis will be given to the bacterial accessory genome, i.e the mobilome, as the primary cause of health-threatening antimicrobial resistance and the production of toxins and virulence factors. Taking into account the evolutionary importance of horizontal gene transfer and the additional beneficial roles of certain bacterial mobile genetic elements, they help project best "the Good, the Bad and the Ugly" outline of this topic. At the time this eBook is about to be published, our Research Topic has registered nearly 55, 000 views.
