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Sommario/riassunto	<p>Annotation Polar microbiology is a promising field of research that can tell us much about the fundamental features of life. The microorganisms that inhabit Arctic and Antarctic environments are important not only because of the unique species they represent, but also because of their diverse and unusual physiological and biochemical properties. Furthermore, microorganisms living in Polar Regions provide useful models for general questions in ecology and evolutionary biology given the reduced complexity of their ecosystems, the relative absence of confounding effects associated with higher plants or animals, and the severe biological constraints imposed by the polar environment. In terms of applied science, the unique cold-adapted enzymes and other molecules of polar microorganisms provide numerous opportunities for biotechnological development. Another compelling reason to study polar microbial ecosystems is the fact that they are likely to be among the ecosystems most strongly affected by global change. For these reasons, polar microbiology is a thriving branch of science with the potential to provide new insights into a wide range of basic and applied issues in biological science. In this context, it is timely to review and highlight the progress so far and discuss exciting future perspectives. In this special issue, some of the leaders in the field describe their work, ideas and findings.</p>

