Special Issue

Bioaerosols: Emission, Characterisation, and Mechanisms

Message from the Guest Editors

Bioaerosols—biological particles suspended in the air—are central to various scientific fields, ranging from environmental science to public health and climate studies. Despite significant advances, our understanding of the mechanisms underlying bioaerosol formation, release, and dispersion remains incomplete. Furthermore, new analytical techniques and innovations in computational modeling are unlocking previously hidden insights into their structure and behavior. Contributions featured in this issue explore the intersection of public health, ecology, chemistry, physics, and engineering. They examine topics such as the quantification of bioaerosol sources, the influence of environmental and anthropogenic factors on emission rates, and the molecular-level interactions driving bioaerosol aggregation and transport. This body of work also aims to advance methodologies for bioaerosol sampling and characterization, real-time monitoring, and high-resolution characterization through state-of-the-art tools such as next-generation sequencing, spectroscopy, mass spectrometry and bioinformatics.

Guest Editors

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Dr. Philippa Douglas

Dr. Robert M.W. Ferguson

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About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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