

COMMENTARIES

The ISME Journal: Multidisciplinary Journal of Microbial Ecology

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Welcome to *The ISME Journal: Multidisciplinary Journal of Microbial Ecology*! After much fanfare and anticipation, we introduce here the first issue of this new journal, supported by ISME and brought to you by the Nature Publishing Group.

So, ‘Why do we need *The ISME Journal*?’ and, more importantly, ‘What will *The ISME Journal* offer and mean to the scientific community?’ Microbial ecology is not only one of the fastest growing disciplines in science, but it is also realized more and more as being pivotal to our understanding of the world’s diverse natural and manipulated ecosystems.

The most significant recent advances in microbial ecology involve interdisciplinary approaches that link the physiology of microorganisms *in situ* with a greater grasp of the complex biotic and abiotic factors that shape microbial niches. Research in microbial ecology has been stimulated by a broader recognition that microbial ecology is directly relevant to a wide range of environmental, health and industrial issues. Furthermore, microbial ecology has also recently grown from a principally descriptive discipline to a hypothesis-driven science that attempts to elucidate mechanisms, utilize or control microbial potential and solve problems of human interest. Indeed, these first years of the twenty-first century have witnessed an appreciation for microbial ecology across a broad range of research disciplines, and microbial ecologists, armed with a multidisciplinary toolbox, are more than ever in a position to deliver answers to environmental, medical and biotechnological questions involving microbial activities.

This advancing interest in microbial ecology has manifested itself in the increasing volume and the impact of publications dedicated to microbial ecological research and the rise in ISME membership and participation. However, despite these positive developments, an important niche has remained unrealized, namely a journal strictly dedicated to microbial ecology in the context of its broader impact on the world we live in.

The ISME Journal seeks to keep microbial ecology at centrestage, while at the same time highlighting

its importance in the greater scientific and societal picture. We aim to focus on excellent microbial ecology, but this does not mean microbial ecology just for microbial ecologists. Thus, although this journal appears to revel in the remarkable advances being made in microbial ecology, it aims to do this in an interdisciplinary context that considers and challenges current concepts of traditional ecology. We aim to display the microbial mechanisms, interactions and diversities that lie at the heart of the important biological processes that define our planet and our lives on it.

The pieces are in place

A number of factors have come together to bring *The ISME Journal* to fruition and poise this new publication for success. First of all, we aim to make publications in *The ISME Journal* highly visible. Such visibility will be facilitated by the *Nature* platform, links to other NPG journals and a highly proactive publication and marketing team, as well as distribution to all the ISME membership. Also, we look to give *The ISME Journal* a timely and dynamic format, which includes a speedy turnaround time for poignant commentaries and reviews in addition to original research. And perhaps most importantly, *The ISME Journal* is supported by an excellent internationally respected editorial board, with a broad range of expertise and geographic distribution. Furthermore, we aim to keep the scope of *The ISME Journal* and its editorial board, current and forward-thinking, with frequent updates to anticipate emerging research areas.

Lofty goals

We aim to be the number one journal in microbial ecology. We realize that this is an extremely lofty goal, but feel that it is attainable given the unique combination of factors that have joined forces to launch *The ISME Journal*. We don’t see this as a competition with other successful journals that highlight microbial ecology, but rather see this as a synergy to ensure that the importance and impact of microbial ecology research will be realised in the coming years. In this combined goal, *The ISME*

Journal expects to demonstrate and highlight the importance of microbial mechanisms, activities and interactions that lie at the heart of any number of key biological processes.

However, these lofty goals can only be realized if the quality of submission to *The ISME Journal* is truly excellent. Thus, we look forward to receiving your very best work. Also, we are open to comments, suggestions and input with respect to topics that should receive particular attention within *The ISME Journal*. Our editorial door is open to receive suggestions from *The ISME Journal* readership, and we welcome ideas and plans for timely reviews and commentary.

Thus, we believe that the stage is set to achieve the lofty goals set out for *The ISME Journal*, but it is up to you to provide the high quality contributions upon which the foundation of this new journal can be built. As ‘Smokey, the microbial ecologist’, would say, ‘Only you can make *The ISME Journal* a success.’

Emerging and multidisciplinary topics

With the start of any new journal, it is important to define the scope of research for which it is intended. In this sense, *The ISME Journal* is very broad on the one hand and is clearly defined on the other. In terms of breadth, *The ISME Journal* seeks to promote diverse and integrated areas of microbial ecology spanning the breadth of microbial life, including bacteria, archaea, microbial eukaryotes and viruses. Thus, with respect to environment, process and interaction levels, *The ISME Journal* is extremely broad. However, we intend to focus on the microbial ecology that drives biological processes across this broad range of research areas. For example, although the molecular biology of catabolic pathways for xenobiotic degradation is of interest, such a topic does not address microbial ecology directly and therefore would fall outside the scope of *The ISME Journal*. However, the study of how xenobiotic degradation pathways act *in situ* or the relevance of *in situ* biological diversity for these functions to degradation potential clearly does fall within the journal’s scope. Similarly, while perhaps exciting, description of *in vitro* mechanisms of virulence development may not fall into the journal’s scope, the ecology of virulence development clearly does.

In general, we are not so much interested in the molecular biology or enzymology of microbial processes as we are in how these activities and the microbial populations that drive them act and interact in their environment. Furthermore, we are especially interested in how *in situ* microbial activities interact with other important players and processes in the world’s natural and engineered environments. Thus, *The ISME Journal* seeks to harness the increasingly multidisciplinary studies of microbial ecology by encouraging and publishing

original research articles that report findings of wide biological interest. We specifically welcome articles representing major advances in microbial ecology that involve novel approaches or help expand the field of microbial ecology.

So what are multidisciplinary studies? We all banter around the term ‘Multidisciplinary’, but it can be a tough goal to attain. Microbial ecology is (nearly) by definition ‘multidisciplinary’, bringing together fields of classic microbiology with ecology, oceanography, molecular biology, and so on. But, in this interweaving and working together, we can do better. For example, microbial ecologists could and should try and work more closely with the ecological theorists that study ‘charismatic megafauna’ ecology. But even beyond this, can we reach beyond even our traditional ‘Multidisciplinary’ interactions and take the field of microbial ecology to the next level by forging new and unconventional interaction. If so, we will make *The ISME Journal* the facilitator for the publication of original contributions, commentaries and reviews on how to best expand such increasingly relevant interactions.

The ISME Journal is loosely divided into a number of subject topics that seek to encompass the breadth of microbial ecology. Although these topics are meant to assist the reader in focusing on areas of particular interest, they should not be seen as an exhaustive list of topics to be covered in the journal:

- Microbial population and community ecology
- Microbe–microbe and microbe–host interactions
- Evolutionary genetics
- Integrated genomics and post-genomics approaches in microbial ecology
- Microbial engineering
- Geomicrobiology and microbial contributions to geochemical cycles
- Microbial ecology and functional diversity of natural habitats
- Microbial ecosystem impacts

The major critical questions that should be asked before submission to *The ISME Journal* are the following: (1) Does the study focus on microbial ecological aspects? (2) Does it contain highly novel or potentially high impact knowledge and information? and/or (3) Does it represent a complete study? If the answers to these questions are all ‘yes’, then the chances are that *The ISME Journal* is a suitable venue for submission.

A final word as we move forward

This is an exciting time in microbial ecology with major advances coming rapidly. We seek to make *The ISME Journal*—THE PLACE TO BE—not only for the publication of such major advances, but also for following the major progress and impact of the field. We hope to achieve this by providing space for

reviews and mini-reviews on particularly timely or high-impact issues, as well as encouraging thoughtful commentary on the issues shaping the field of microbial ecology. And most importantly, we seek to publish high-quality studies in microbial ecology and contributions of broad biological interest and impact.

It is being increasingly realized that the world is to a large extent the domain of microbial ecology and we hope to make *The ISME Journal* the vehicle to express the emerging and exciting research that continues to bring this revelation to the fore!

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The ISME Journal: a major milestone for the International Society for Microbial Ecology and the microbial ecology community

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The launch of *The ISME Journal – a Multidisciplinary Journal of Microbial Ecology* marks the maturation of the multidisciplinary field of microbial ecology. Our vision is to contribute significantly to our understanding of the behavior of microorganisms in their environment: unraveling the underlining mechanisms of interactions among prokaryotes, with their eukaryotic partners and abiotic environments, and deciphering the means by which microorganisms turn the wheels of planet Earth.

Our aim is that *The ISME Journal* will operate at the leading edge of publications and include original contributions, as well as reviews and commentaries expressing the scientific excitement generated from studies of both basic concepts in microbial ecology and their many applications. It is envisaged that an enhanced understanding of the fundamentals in microbial ecology is also essential for the well-being and the future of the planet we inhabit.

This is the first journal fully owned by the International Society for Microbial Ecology and it was established to provide the professional platform for an active and rapidly expanding scientific community in the multidisciplinary field of microbial ecology. We foresee that *The ISME Journal* will become a vehicle tuned to the ever-

evolving needs of our scientific community through close interactions between the editors, the editorial board and the advisory committee of the journal, the Society and our scientific community. These interactions will also be facilitated by the biannual international symposia, international and regional workshops and our interactive web site www.microbes.org. We therefore encourage the readers, whether established researchers, young scientists or research students, to engage with us and provide suggestions and comments on how to arrive at our mutual goal of establishing a truly excellent and leading journal in microbial ecology. In seeking excellence, we selected the Nature Publishing Group (NPG) to act as the publisher of *The ISME Journal*, and we value the open, welcoming and fruitful interactions we have experienced with the highly professional team of NPG. ISME is pleased to be part of the Nature family and we trust that, with the cooperation of the broader scientific community of basic and applied scientists, *The ISME Journal* will become the key vehicle, and publication of choice, for disseminating new and important findings in our multidisciplinary research arena.

The ISME Society is less than 10 years old and was established in 1998 by the combined visionary efforts of Jim Tiedje and Usio Simidu, who served as consecutive Chairs of the International Committee for Microbial Ecology (ICOME), which was under the auspices of the International Union of