

## Editorial

# Exploring emerging topics

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Welcome to the first issue of *Emerging Topics in Life Sciences*, a new journal from the Royal Society of Biology and the Biochemical Society, published by Portland Press that will reflect the increasingly interdisciplinary nature of the life sciences. The journal will support the needs of researchers and students, as well as those moving into new fields, who need easy-to-digest reviews of rapidly moving areas. Each issue will focus on an emerging topic of bioscience research, will be composed of multiple short reviews (typically 10–14) and will be guest edited by an expert in the subject.

Although the scope and potential for topics is very broad, this new journal will focus on interdisciplinary areas of life science research that have yet to be reviewed extensively in the literature. I hope you will agree that such an up-to-date review or overview of emerging topics, unfettered by traditional disciplinary boundaries, will be helpful to those of you who are early-career scientists [1,2] and even seasoned researchers. Our aim is for *Emerging Topics in Life Sciences* to provide a much-needed link between the established record (for example, textbooks) and the latest research. In this way, the journal will inform and enable all of our readers by providing knowledge and inspiration in emerging topics in biological science and new techniques and approaches used to investigate them.

Society faces major challenges such as climate change and the rise of antibiotic resistant bacteria, to name but two. Life science research needs to rise to these challenges by working across discipline boundaries, a concept that is increasingly understood by funding bodies around the world [3]. In the UK, for example, all five Research Councils are supporting a £1.5 billion Global Challenges Research Fund (GCRF) unveiled by the Government [4] that seeks to address major societal challenges.

I am delighted to be leading the journal as Editor-in-Chief, and am particularly excited about this being a joint venture between the Royal Society of Biology and the Biochemical Society. I will be supported by an international Editorial Board whose members are experts in their own fields from across the life sciences, and who will help sculpt future editions of *Emerging Topics in Life Sciences*. The Editorial Board and I will ensure that in selecting the topics to be covered we are including the latest thinking and newest concepts that are of importance to the life science community. The individual Guest Editors of each issue will take responsibility for the content given their in-depth knowledge of the field as subject matter experts and each article will conclude with a distillation of the most important take-home messages from the article. As a whole, each issue will provide an expert collection of articles on the topic that will serve as a single reference point and an up-to-date overview.

Topics for the first journal issues in 2017 will be relevant to a broad spectrum of researchers and have been selected by the Editorial Board and Editorial Team, and are likely to include:

- *Antibiotics of the future* – the rise of antibiotic resistant bacteria has been well documented by governmental and non-governmental organisations. Now is the time to start considering what antibiotics of the future might look like. This issue will cover some of the new antimicrobials that are currently being assessed, their mechanisms of action, the challenges that remain for their development and their scope for becoming antibiotics of the future.
- *Computational biology* – this is a key topic across all of the life sciences, involving the development and application of data, including both analytical and theoretical methods, mathematical modelling and computational simulation techniques to the study of biological, behavioural, and social systems.
- *Agricultural applications of gene editing* – a topic which explores applications of gene editing technology such as CRISPR/Cas in agriculture and plant biology, a powerful tool for studying plants at the molecular level.

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- *Molecular and biological adaptations to climate change* – investigating key ways that organisms have adapted (and continue to adapt) to anthropogenic changes to the climate.
- *Mechanobiology* – an emerging field of science at the interface of biology and engineering, this field focuses on the way that physical forces and changes in cell or tissue mechanics contribute to development, physiology, and disease, and aims to understand how mechanical force and cellular geometry interplay with biochemical activities to drive cellular functions.
- *Organoids: modelling development and disease* – an interdisciplinary field of research that has been developing over recent years, exploring three-dimensional organ models grown *in vitro* and their applications.
- *Microbiomes in health and disease* – a rapidly developing field that concentrates on the host–microbiome relationship, and how the structure and functional capacity of the bacterial microbiome is important in the healthy state and in a variety of disease states.

Open access options are available for those authors who wish to, or are mandated to, avail of these, and discounts on publishing charges are available for Royal Society of Biology and Biochemical Society members, as well as for authors at subscribing institutions. Information on Portland Press' open access options is available online at <http://www.portlandpresspublishing.com/content/open-access-policy>.

We hope that you will use *Emerging Topics in Life Sciences* to immerse yourself in the latest exciting discoveries in biology and their applications; and if you are excited at the prospect of coverage of an under-represented and emerging topic of interest, please get in touch with us at [editorial@portlandpress.com](mailto:editorial@portlandpress.com).

Our first issue is on *Antibiotics of the Future*, with Daniel Walker acting as Guest Editor. I hope that you enjoy reading about new antibiotic discoveries, including drug repurposing for anti-virulence strategies, strategies to target bacterial biofilms and the development of novel therapeutics for bacterial infections.

### Acknowledgement

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### References

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