

Creatures galore

In this issue, we are delighted to launch a new regular feature: the Creature Column.

In addition to the research papers, scholarly reviews, and expert commentary that we publish, we at *Nature Methods* are also constantly striving to provide our readers with engaging content for lighter reading. This year, we have launched Research Briefings (an easy-to-digest summary of a research paper we've published) and the Lab & Life column (featuring diverse scientists talking about how they tackle tasks or manage personal or societal challenges in their working lives). This month, we are now pleased to introduce the Creature Column. Through the lens of scientists working with these creatures, each monthly column will introduce one of the many organisms used in research in labs around the world.

At *Nature Methods*, we are partial to a diversity of animal and other models. In an earlier Editorial, we discussed the value of models beyond the workhorses such as mouse, *Drosophila*, *Caenorhabditis elegans*, zebrafish and yeast, and the importance of keeping an open mind to the suitability of unusual creatures for specific research questions. Similarly, a Technology Feature highlighted how the era of genomics made studies in organisms other than the Big Five much more accessible. Genomes have been or are being sequenced, and genome editing, RNA interference, omics technologies, imaging and other approaches can be used to address virtually any question of interest.

We have published research papers on methods or tools for studying penguins, turtles, the fish *Danionella*, marine protists, plankton and mouse lemurs, to name just a few. And we hope to continue in this vein, as we recognize the limitations that a focus of research on just a few model organisms pose for our understanding of the biological universe in its full complexity.

The Creature Column is not intended to be a research paper or a scholarly review

of all literature on a particular organism. Rather, it is intended to give readers an introduction to creatures that might not be very familiar, but that are valuable for answering particular research questions. We have asked experts to introduce their favorite model organism in an easily accessible and perhaps personal manner. The columns will outline the creatures' life cycles and their natural habitats, highlight how they were introduced into the lab and describe any special considerations for their care and housing in the lab. In addition, any ethical concerns associated with maintaining these creatures in the lab will be discussed, which is particularly relevant in the case of mammals. The columns will showcase some of the questions that can be addressed with the help of these creatures, as well as the tools available and some of their limitations. We hope that our readers will share our authors' and our own enthusiasm for these creatures.

Our first column, written by Bob Goldstein, features water bears, or tardigrades. These lovable creatures are studied for their resilience to extreme conditions, such as radiation, desiccation or extreme heat. Tardigrades have even traveled into space. Closer to home, they are being used for research into how body plans develop and evolve. Goldstein describes how he first encountered tardigrades and how he introduced them into his lab. While tardigrades may be difficult to surpass in their sheer cuteness, we expect that the following Creature Columns will be equally engaging — so stay tuned to meet other intriguing creatures in this column.

Widely studied model organisms, as well as their less popular cousins, have been invaluable in deciphering how animals develop and how body plans emerge. However, the insights obtained

from these creatures have not enlightened us sufficiently about the development and physiology of the human species and how it compares to closely related species. Obviously, such research is and should be constrained by ethical considerations and cannot be conducted at the organismal level. Organoids grown from human stem cells constitute realistic models of human tissues and even recapitulate some developmental processes. Importantly, patient-derived stem cells and organoids have been used to model various diseases.

A particularly inaccessible process in humans, however, is very early development — embryogenesis. This can be modelled using stem-cell-derived embryos, within the varying boundaries of regulations implemented by different countries, and comparisons can be drawn to closely related species. An especially controversial avenue of research involves chimeras generated from human and non-human primate stem cells. Such approaches facilitate studies in comparative evolutionary and developmental biology and can provide insights into the developmental potential of various pluripotent stem cells. A Comment in this issue discusses the technical hurdles and ethical considerations surrounding embryonic chimera research.

A final note: while the name Creature Column could imply that only animals might be featured, we picked it for the alliteration. We do plan to be more inclusive and not to limit the column to the animal kingdom.

We hope that you enjoy the Creature Columns as much as we do. As always, we are happy to receive feedback. And if you'd like to have your favorite creature featured in this column, please reach out. □

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