

Editorial from the new Editor-in-Chief

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I am honored to become the Editor-in-Chief of the *Artificial Life and Robotics* from this volume. Prof. Sugisaka, who has served with gigantic dedication as the Editor-in-Chief of this journal for 17 years since its foundation, concluded his term of service with distinction in the last volume. The Internal Society of Artificial Life and Robotics (ISAROB) has so much to be thankful to Prof. Sugisaka for his long-standing effort to establish the journal as well as our society. During his term of editorship, as a result of his extraordinarily dedicated service, this journal has become acknowledged as one of major academic activities in the field of artificial life, biocomplexity and human-inspired robots.

In my first editorial, I would like to share with the readers and authors some of new directions of this journal.

First, I would expand the academic discipline that this journal covers. With regard to artificial life, it has started to clarify the essence of biological life from the point of view which is not confined to life as we know it, but extended to life as it could be, and has been engaged in the studies about the systems, mostly computational, that exhibit the behavioral characteristics of natural living systems. This approach, in a wider sense, is substantially advanced in various directions in recent years. The biocomplex systems theory which artificial life study is mainly based on is now widely employed to solve the real biological and medical problems, as the basic foundation for systems biology in such a field as biological development and cellular molecular network and as the theoretical basis for regenerative medicine and systems medicine, especially for

tissue reprogramming (iPS cells) and cancer progression. Furthermore, study of “synthetic biology” is now rapidly developing in the attempt to synthesize life in wetware or re-design existing, natural biological systems (e.g., bacteria) for useful purposes.

With regard to the human-inspired robot field, rapid progress in various types of robot systems has been remarkable such as bipedal humanoid, multi-agent robots. Also in real world, nursing care robot is gradually being in practice. Furthermore, in a broader sense, studies are rapidly advancing in the field of “molecular robots”, which are small DNA-based platform that identifies receptors in cell surface and targets more efficiently to cells causing diseases to achieve drug-like function in the human body.

Considering the diversity of rapid progress in various directions in the discipline related to artificial life/biocomplexity and human-inspired robotics, I would like to extend the scope of our journal to include the new emerging fields surrounding the area which we have dealt in our journal, to the extent which would broadly cover the interdisciplinary fields of biologically inspired science/engineering and biomedicine.

Second, but equally important as the first, I would initiate a reform to improve the submission–publication process of this journal, which has been, in some aspects, inefficient. I would rearrange the paper reviewing process and introduce the computational systems handling the papers to make the process more efficient. Furthermore, the renewed editing committee is now planning to include a special issue of the attractive topics hopefully once a year to review advance of our field.

Thus, I would like to put my best effort into being engaged in significant further improvement of the *Artificial Life and Robotics*, to increase its quality and to make it more attractive for authors and readers.

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