

# Environmental Epigenetics

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With over 350 journals, Oxford University Press is one of the largest publishers of scientific journals. In considering their portfolio recently, they realized they had no specific journals in the rapidly growing area of epigenetics. When they approached me about helping to establish a journal in this area, I considered what other journals had been developed. Several fine journals have been developed in the areas around molecular epigenetics (e.g. *Epigenetics*, *Epigenetics and Chromatin*, and *Epigenomics*) and disease epigenetics (e.g. *Clinical Epigenetics* and *Medical Epigenetics*), with ~10 in total journals currently focused on epigenetic topics. One of the main areas of epigenetics not currently addressed is environmental epigenetics. Therefore, I agreed to assist Oxford University Press to establish a journal in this area to be called *Environmental Epigenetics* and act as its founding editor-in-chief.

The field of epigenetics started in the 1940s with Conrad Waddington, who coined the term, studying environment–gene

interactions and non-Mendelian genetic phenomena. Epigenetic molecular markers were first identified in the 1970s with DNA methylation, but it was not until the late 1980s and 1990s when many of the epigenetic processes (DNA methylation, histone modifications, chromatin structure, and non-coding RNA) were identified. To put this in perspective, a search of PubMed using the term “epigenetics” yields ~12 000 publications, 11 400 (95%) of which were published in the past 5 years. This reflects the dramatic recent growth in the field. Within the area of epigenetics, the largest sub-topic is molecular epigenetics at 40%, then disease epigenetics at over 30% followed by environmental epigenetics at nearly 25% of the literature published. Growth in the area of environmental epigenetics is shown in Fig. 1, based on PubMed information.

Epigenetics provides the molecular conduit between the environment and regulation of genome activity. The majority of environmental factors cannot alter DNA sequence, but most

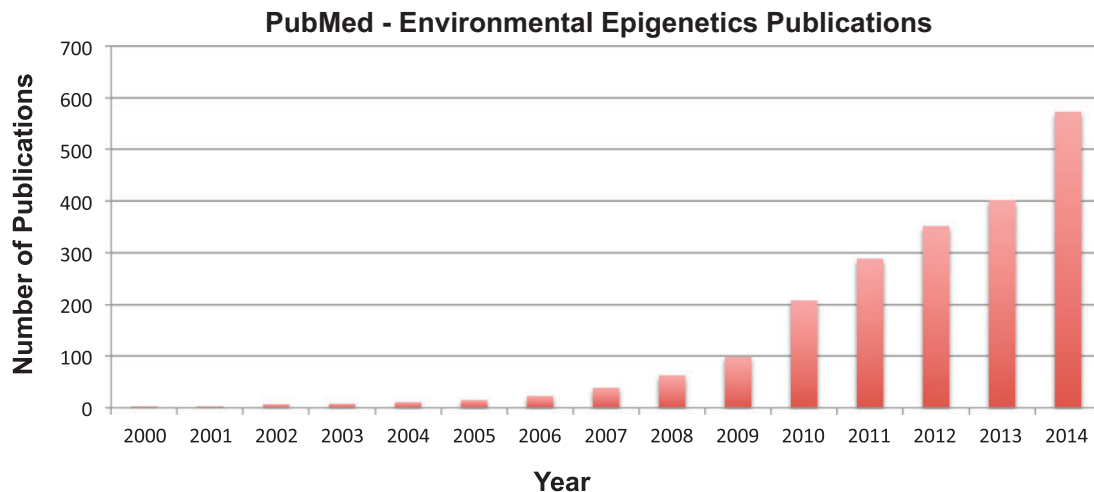


Figure 1. Publication Frequency in Environmental Epigenetics.

can alter genome function and biology. The area of environmental epigenetics involves a large number of distinct topics. One such topic is toxicology, due to the role of epigenetics in the actions of a wide variety of toxicants and environmental compounds. Another is disease, as that is influenced by the environment and epigenetic mechanisms. A growing number of studies also suggest a role for environmental epigenetics in evolutionary biology. Therefore, the scope of *Environmental Epigenetics* is broad and includes environmental impacts on epigenetics at both a molecular and a physiological level involving all living organisms. This covers areas ranging from evolution, ecology, and population epigenetics to medicine, disease etiology, and the developmental origins of disease. How the environment impacts the molecular mechanisms and processes involved in epigenetics and genetics is included, whether this impacts normal cell and developmental biology or abnormal physiology and toxicology.

*Environmental Epigenetics* will be a completely open access online journal. A streamlined submission, review, and publication process has been established, as is normal for Oxford University

Press online journals. A list of suggested reviewers is required of authors and a minimum of three reviews will be sought. Once two reviews have been received, a decision will be made. This will assure a fast turn around in the review process. The journal will work to review all submitted manuscripts. The review will assess whether the study is sound and has a good experimental design and good data interpretation. Innovation and novelty will be considered, but the journal feels the readership is best suited to judge this rather than the reviewers or editors.

A stellar Editorial Board has been assembled that will facilitate the management of the reviewing process. A Consulting Editorial Board will also advise and assist in reviews when needed, and an Editorial Review Board has been established that will assist in the reviews. A list of the Editors can be found at the *Environmental Epigenetics* web site [www.enviro-epigenetics.org](http://www.enviro-epigenetics.org) and information can be obtained at [envepi.editorialoffice@oup.com](mailto:envepi.editorialoffice@oup.com)

We encourage you to submit your papers to *Environmental Epigenetics* and I am confident that the journal will provide the optimal venue for the rapidly developing field of epigenetics.

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