**-ABSTRACT-**

**ENVIRONMENT, DEVELOPMENT, AND PHYSIOLOGY: A SYSTHESIS**

To evaluate and predict the effects of a changing environment on populations, it is appropriate to consider the sum of multiple biological levels of integration, the cooperation between biological systems, and the complex physiochemical dynamics of the environment. In Environment, Development, and Physiology: A Synthesis, we explore the current trends and perspectives in developmental physiology within this context where stochastic interactions necessitate a holistic approach to understanding environmental influences on development, and the effects on the population at large.

Aimed at This requires large-scale collaborations as the scientific collective of knowledge increases and fields become more specialized. Incorporation of a holistic approach to environmental biology is wildly prominent in the field of developmental biology where the dynamic interactions of the progeny of one generation are likely to affect the future of their species. Here the complex orchestration of developmental processes is compounded by our virtual inability to predict how future generations will be impacted by the effects of the environment. Therein, this book will define the current scientific trends and perspectives of environmental developmental biology within the broader field of environmental science to appeal to both students and professionals in order to broaden the understanding of “what that guy in the other building actually does, and how it can help me do better science.”

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However, one might suggest that such an approach is essential to accurately portray experimental results that have tightly controlled variables in the laboratory, and predetermined constraints in field-based studies.

 on the population when effects are transmitted to early life-stage organisms.

becoming increasingly relevant popular

the struggle for survival during the complexities of development in an ever-changing environment is explored.

 However, we are often confronted with the effects that incur our experimental reality that is pragmatic, in the face of the complexity of the biological reality that exists in the environment.

The pragmatic execution of biological experimentation is

 in the interpretation of . and multidisciplinary perspectives into studies of developmental biology are becoming increasingly popular. Combination of

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demonstrate that, when taken into emvironmental , in addition to providing a holistic perspective by demonstrating that the results is often more than the sum of its parts.

in a holistic work that on but synthesizes the sum of these parts into a and Linking proximate and ultimate causation through multiple levels of biological integration and …

Laboratory and field study to creat a holistic view of interacting systems. Isn't this the goal of modelers who always have a missing variable? (This is a dream) but higher order thinking than manipulating a single variable can help.

This is not possible without coordinated collaborative efforts that incorporate multidisciplinary participation to answer overreaching questions that might reinforce that the "product of even a decades worth of collaboration is greater than the sum of a lifetime of studies conducted in a single lab".

This book will be targeted to advanced undergraduate, graduate-level and professionals in academia and industry.

Help fill in the disconnect…

WHY IS THIS BOOK NEEDED

This book will be distinguished from others in its integrative nature. Not just in the multiple biological systems themes, but in the blending of multiple fields of expertise. In this, the book will help define the scientific collective within the highlighted fields of so-called environmental science to both those readers that are outside of a particular field (students and professionals alike) and those that work within a field, where multiple iterations of the same job description exist. Both the chapter descriptions and the author choice delineate this goal. Highlight this goal by using the… in terms of the goals and trends of execution, but also in the …

This volume will incorporate a representation of virtually every field that surrounds the use of developing animals in environmental science, such that it is a synthesis of the current and emerging trends in this broad field.