

## Preface

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*Analytical Cellular Pathology* has a longstanding history of focusing on the quantitative morphologic aspects of pathology. We are now embarking on a substantial extension of this concept in order to serve as a forum for communication of scientific research in the broader area of biophysical pathology as well as quantitatively oriented molecular pathology. We hope to highlight research involving emerging, state-of-the-art technologies.

With this repurposing of the journal, we hope to make it not only a vehicle for the dissemination of scientific discovery via both full-length papers and brief communications but also a means of promoting additional interest in this area of research. With this in mind, we will increase the number of reviews and mini-reviews. Specifically, we are introducing a section titled “Modern Trends in Imaging” that will consist of a series of reviews on modern modalities of visual analysis. From time to time, we will invite commentaries inspired by papers of special significance or emerging new concepts in the field.

The evolution of anatomic pathology from a discipline based upon direct observation of visual light images to multi-modality computer-intensive analysis is entering a phase of accelerated growth. However, the technological underpinnings are developing more rapidly than our ability to exploit them for both diagnostic and experimental pathology, and pathologists have proved not as ready to embrace novel technologies as radiologists or indeed other clinical professions with access to imaging modalities.

Hand in hand with the emerging of this modern armamentarium for the study of abnormal tissue structure and function has come the realization that the cell itself can be understood and studied at the level of the physical processes by which it interacts with its environment. This has been long recognized in the field of biophysics, but increasingly attention is being focused on such mechanistic aspects of pathogenesis as well.

Although much of the journal in the past has been devoted to oncology, we wish to consider the whole spectrum of disease including not only cancer, but also infectious, cardiovascular, autoimmune, vascu-

lar, genetic and metabolic disease. Papers should be based on novel concepts and methodologies, as well as the novel use of existing methodologies. Traditional molecular mechanistic studies are also appropriate, but these should be quantitative in nature. In addition to hypothesis-testing studies, hypothesis-generating observational studies are also welcome. Finally, mathematical models of disease processes are acceptable, especially when they lead to testable predictions.

Just as the flourishing of molecular biology has led to a paradigm shift that has rejuvenated our field, the convergence of biomedicine, bioengineering, and sophisticated new tools of mathematical analysis will move us towards a more quantitative and analytic discipline. It is our intention to become the leading journal in this field, and to be accessible not only to cell and molecular biologists and pathologists, but also to physicists and bioengineers.

Last, but not least, it is important for us to hear from the Journal’s readers and authors as to how we can ensure that the journal best suits their needs. In order for us to succeed, we will have to make it truly international in scope, so that geographic as well as conceptual barriers can be eliminated.

Stanley Cohen  
*Editor-in-Chief*

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### Short biography

*Stanley Cohen, M.D., Chairman and Professor of Pathology at the New Jersey Medical Center, University of Medicine and Dentistry of New Jersey (UMDNJ) since 1994, received his M.D. at Columbia University College of Physicians and Surgeons, did his residency in pathology at the Massachusetts General Hospital, and did postdoctoral training in immunology at the New York University School of Medicine under Drs. Baruj Benacerraf and Robert T. McCluskey. Following military service at Walter Reed he became Associate*

*Professor of Pathology and Associate Director (and then Acting Director) of the Center for Immunology at the State University of NY at Buffalo. Subsequently, Dr. Cohen was Professor of Pathology at the University of Connecticut Medical School, after which he became Professor and Chair of Pathology at Hahnemann University. Dr. Cohen's initial research interest was in the neurophysiology of sensory receptors, for which he received the Borden Award at Columbia University. Subsequently, in 1973 he made the discovery that the nonantibody mediators that were produced by antigen or mitogen stimulated lymphocytes could also be elicited from epithelial and mesenchymal cells when subjected to appropriate stimuli in vitro and in vivo. This led to his hypothesis in 1974 that such mediators were not confined to proteins that merely mimicked similar products of the immune system, but rather formed a body-wide hormone-like system for the mediation of cellular interactions in both normal development and host defense. To help define this paradigm, and in part to focus attention on what had previously been considered as possible in vitro artifacts, he coined the term "cytokine". This concept, which has become an intrinsic part of the current scientific literature, as well as his concurrent studies of the in vivo significance of lymphokines and cytokines, resulted in the receipt of the Parke Davis Award in 1977. In 1986, he was one of a small number of senior investigators to receive the National Cancer Institute "Outstanding*

*Investigator Award" based upon these various studies. His subsequent work has focused on mechanisms of DNA replication induced by cytokine action, and most recently, on biophysical aspects of cell and organ function. His current project is to help establish the subdiscipline of biophysical pathology, which involves both the utilization of photonics and other physical modalities to investigate pathologic conditions and the measurement of physical parameters of abnormal cells to obtain prognostic information about disease states. He has authored more than 200 publications, edited or co-edited seven books, and is working on a book on Photonics in Pathology and Medicine.*

*In the past, Dr. Cohen has chaired or co-chaired six international lymphokine workshops, was a Co-Chair of the Nomenclature Committee of the International Union of Immunological Societies, served on the editorial boards of eleven journals and was the Associate Editor-in-Chief of "Clinical Immunology and Immunopathology". He has served on numerous NIH and DOD Study Sections, most recently in Chair capacities.*

*Dr. Cohen has served as the President of the American Society for Investigative Pathology, the Treasurer of the Federation of American Societies of Experimental Biology, and the Vice Chair of the Research Committee of the Association of Pathology Chairs. He is a member of the AAMC Council of Academic Societies.*