

Human PATHOLOGY

VOLUME 103

September 2020

EDITOR-IN-CHIEF

Lori A. Erickson, MD

SENIOR ASSOCIATE EDITORS

Liang Cheng, MD

Michael S. Torbenson, MD

MANAGING EDITOR

David Newcombe

ASSOCIATE EDITORS

Virginia A. LiVolsi, MD – Book Reviews
Michael T. Tetzlaff, MD, PhD - Social Media

EDITORIAL BOARD

Mahul B. Amin, MD
Daniel A. Arber, MD
Gustavo Ayala, MD
Justin A. Bishop, MD
Edi Bragi, MD, PhD
Pierre Brousset, MD, PhD
Darya G. Buehler, MD
Natalia Buza, MD
Philip T. Cagle, MD
Runjan Chetty, MB BCh, FFPATH, FRCPath, FRCPA, FRCPC(C), PhD
Sanja Dacic, MD, PhD
Ben Davidson, MD, PhD
Brett Delahunt, MD
Ronald A. DeLellis, MD
Andrea T. Deyrup, MD, PhD
Yoh Dobashi, MD
Adel K. El-Naggar, MD, PhD
Jonathan I. Epstein, MD
Oluwole O. Fadare, MD
Andrew Feldman, MD
Christopher D. M. Fletcher, MD
Agnes B. Fogo, MD
Andrew Folpe, MD
Maria Pia Foschini, MD
Anthony J. Gill, MD, FRCPA
John R. Goldblum, MD
Jeannette Guarner, MD
John Hart, MD
Jason L. Hornick, MD, PhD
Brooke E. Howitt, MD
Ralph H. Hruban, MD
Eric D. Hsi, MD
Hsuan-Ying Huang, MD
Pei Hui, MD, PhD
Peter A. Humphrey, MD, PhD
Carrie Inwards, MD
Dhanpat Jain, MD

Vickie Y. Jo, MD
Sanjay Kakar, MD
Andras Khoor, MD
Scott Kilpatrick, MD
Günter Klöppel, MD
Thomas Krausz, MD, FRCPath
Murali Krishna, MD
Stefano La Rosa, MD
Alfred King-yin Lam, MBBS, MD, PhD, FRCPA
Jerzy Lasota, MD, PhD
Gregory Y. Lauwers, MD
Cheng-Han Lee, MD, PhD, FRCPC
Susan Carole Lester, MD, PhD
Xiaoxian (Bill) Li, MD, PhD
Pei Lin, MD
Antonio Lopez-Beltran, MD
Meera Mahalingam, MD, PhD, FRCPath
Alberto M. Marchevsky, MD
Kristina A. Matkowskyj, MD, PhD
W. Glenn McCluggage, FRCPath
Ellen D. McPhail, MD
L. Jeffrey Medeiros, MD
Ozgur Mete, MD, FRCPC
Markku Miettinen, MD, PhD
Kiyoshi Mukai, MD
Jeffrey L. Myers, MD
Yasodha Natkunam, MD, PhD
George J. Netto, MD
G. Petur Nielsen, MD
Yuri E. Nikiforov, MD, PhD
Yoshinao Oda, MD, PhD
Timothy J. O'Leary, MD, PhD
Reetesh K. Pai, MD
Yong-Koo Park, MD, PhD
Rajiv M. Patel, MD
Yan Peng, MD, PhD

Elizabeth J. Perlman, MD
Manju L. Prasad, MBBS, MD
Jaime Prat, MD, PhD, FRCPath
Sarangarajan Ranganathan, MD
Natasha Rekhman, MD, PhD
Murray B. Resnick, MD, PhD
Robert Riddell, MD
Jae Y. Ro, MD, PhD
Fausto J. Rodriguez, MD
Jason N. Rosenbaum, MD
Peter M. Sadow, MD, PhD
Stuart J. Schnitt, MD
J. Kenneth Schoolmeester, MD
Rajal B. Shah, MD
Lynette M. Sholl, MD
Kenneth R. Shroyer, MD, PhD
Gene P. Siegal, MD, PhD
Jeff P. Simko, MD, PhD
Aatish Dilip Singh, MD, PhD
Alena Skalova, MD
Steven H. Swerdlow, MD
Luigi Terracciano, MD
Lester D. R. Thompson, MD
Jose R. Torrealba, MD
María Tretiakova, MD, PhD
Harry V. Vinters, MD
Daniel W. Visscher, MD
Noreen Marian Walsh, MD
Lawrence M. Weiss, MD
Bruce M. Wenig, MD
Thomas M. Wheeler, MD
Tsung-Teh Wu, MD, PhD
Haodong Xu, MD, PhD
Rhonda Yantiss, MD
Matthew M. Yeh, MD, PhD
Samuel A. Yousem, MD
Yoh Zen, MD, PhD, FRCPath
Lizhi Zhang, MD, PhD

EDITOR EMERITUS

Ricardo V. Lloyd, MD, PhD (2005-2018)
Fred Gorstein, MD (1988-2005)
Bernard M. Wagner, MD (1970-1988)

STATEMENT OF PURPOSE: Human Pathology is designed to bring to the laboratory and clinical physician, and to the student, information of clinicopathologic significance to human disease. Its primary goal is the presentation of information drawn from morphologic and clinical laboratory studies having direct relevance to the understanding of diseases of humans. Accordingly, it is intended that the journal embrace articles concerned with morphologic and clinicopathologic observations, reviews of a disease or group of diseases, analyses of problems in pathology, significant collections of case material, and new advances in concepts or techniques of value in the analysis and diagnosis of disease. Theoretical and experimental pathology and molecular biology pertinent to the diseases of humans will be included. The journal articles will be of interest to all physicians engaged in the clinical and laboratory practice of medicine as well as to teachers of pathology and clinical medicine. They will be critical. Above all, they will embody a point of view.