Preface

Among the fluorescence probe researchers a group we call the Argonautes went on a search of the "Biomedical Golden Fleece" at the NATO-Coulter Technology Advanced Research Workshop held at Hollywood Beach, Florida in October 1995. The search got off to an auspicious start. Less than two years later some of the original participants and others, including members of the ever-active Spectra Cube group at Migdal Ha Emek, Israel, gathered at the amphitheater of Parke Davis Pharmaceuticals Division of Toxicology (Ann Arbor, MI, USA) for a Conference on Spectral Imaging in Biology and Medicine, jointly organized by the Fluorescence Center of Carnegie Mellon University, Pittsburgh. At this juncture, one of this book's authors, Elli Kohen, remembered his father's words, when while still a youngster he was dreaming of one day becoming a scientist: "*Un jour tu seras assis dans un Aréopage de savants*" ("One day you will be sitting in an Areopagus of scientists"). Half a century later, at Ann Arbor, the scholarly and inspiring atmosphere made it really feel that one was looking at science from the summit of the Areopagus.

A statement was made which reflected rather accurately the state of the art. Paraphrasing that statement and editing the colloquiality of the original phrase: "Today we have the smartest instrumentation and rather unsophisticated probes; we would be better off with somewhat simplified instrumentation and much smarter probes."

For over a century and a half the primary guide of the pathologist has been the classical Hematoxylen-Eosin (H&E) slide complemented for the cytopathologist by the Papanicolaou smear. This also led to the full compendium of Automated Cytology, Flow Cytometry and Cytofluorometry instrumentation. With the diversity of fluorescence probes already in use and the newest ones rapidly entering the field of oncology, we are not far

away from the diagnostic system of the third millennium: instead of the classical H&E slide, a set of 30–50 documents representing the pathologic sample obtained by multiprobe fluorescence scan of the same sample. The purpose of this book is to work towards such a realization.