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Application of biomedical digital image tools: Virtual flow cytometry and hematometrics in pathology and research

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I am a practicing hematopathologist with interest in developing diagnostic tools to advance the practice of pathology in general and hematopathology in particular using bioengineering tools. I invented, in collaboration with biomedical engineers several tools in mensuration and digital pathology under the USPTO patents aegis. I am applying these tools in my practice and developing their applications in depth. These tools allow conversion of immunohistochemistry to virtual flow cytometry: Cell population statistic with cell size vs. number two dimensional plots. In addition, several hematometrics modules are developed to address automation in pathology especially quick conversion of digital bone marrow microscopic routinely stained images to its clinically useful parameters: Cellularity, tumor burden, fibrosis content and others.

Biography

Hernani Cauling is a consultant to major national labs like Quest, Ameripath, Neogenomics and University of South Florida and Moffitt Cancer Center. In that area, he has published two textbooks: *Wiley's Non-Neoplastic Hematopathology* and *Springer's Cutaneous Pathology*, the latter showing chapters with examples of the application of virtual flow cytometry in cutaneous pathology. He has put together a small team composed of a patent lawyer, a computer engineer, and a medical doctor as a seed group to develop this technology further, which is still in the incubation stage. In the past, he obtained external support for these projects from Whitaker Foundation and philantrophic individuals but has not pursued the scaling of the invention to a large business.

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