

Raj Bawa, MS, PhD, MD ('22)

VP and Chief IP Officer
Guanine, Inc.



Raj is an inventor, entrepreneur, professor and registered patent agent licensed to practice before the U.S. Patent & Trademark Office. Trained as a biochemist and microbiologist, Raj has been an active researcher for over three decades. He has extensive hands-on bench experience, patent law track record and commercialization expertise. With a strong background in nanomedicine, drug delivery, biodefense, including sensors and diagnostics, Raj is leading Guanine Inc.'s efforts to apply translational science in Lyme disease applications, and develop an AI algorithm to diagnose Lyme disease and recommend patient-centric, post-antibiotic treatment. This can assist individuals and their doctors to more effectively diagnose and treat Lyme disease using a comprehensive knowledge base uniquely developed with translational science and related techniques. Raj is also involved in developing rapid, simple, and inexpensive quantitative tests for measuring multiple *Borrelia* strains and species, *Borrelia* antibodies, and co-infections in a point-of-care (POC) cartridge from a finger-prick whole blood sample using a signal amplified assay that was developed at Guanine employing electrical quadruplex detection tags, biosensor and potentiostat. He was previously the PI on a related CDC-funded SBIR that applied this detection platform in a signal amplified hybridization assay that detected carbapenem-resistant *Enterobacteriaceae*.

Raj is president of Bawa Biotech LLC (founded 2002), a biotech/pharma consultancy and patent law firm based in Ashburn, Virginia, USA. Raj is a scientific advisor to Teva Pharmaceutical Industries, Ltd. (Israel), a visiting research scholar at the Pharmaceutical Research Institute of Albany College of Pharmacy (Albany, NY), and a medical student receiving an MD degree in 2022. Raj was an adjunct professor at Rensselaer Polytechnic Institute in Troy, NY from 1998-2018, where he received his doctoral degree in three years (biophysics/biochemistry). In the 1990s, Raj held various positions at the US Patent & Trademark Office, including primary examiner from 1996-2002. Presently, he is a life member of Sigma Xi, co-chair of the nanotech and precision medicine committees of the American Bar Association and founding director of the American Society for Nanomedicine (founded 2008). He has authored over 100 publications, co-edited 7 texts, and serves on the editorial boards of numerous peer-reviewed journals, including serving as an associate editor of *Nanomedicine* (Elsevier). Some of Raj's awards include the Innovations Prize from the Institution of Mechanical Engineers, London, UK; Appreciation Award from the Undersecretary of Commerce, Washington, DC; Key Award from Rensselaer's Office of Alumni Relations; and Lifetime Achievement Award from the American Society for Nanomedicine.

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