



Douglas Anthony, MD, PhD

APC Senior Fellow Since: 2022

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EDUCATION

Undergraduate Degree: B.S., Chemical Engineering, Washington University in St Louis (1978).

Graduate/Professional Degree: Ph.D., Experimental Pathology, Duke University (1983); M.D., Duke University (1984). **Postgraduate Education:**

Residency, Anatomic Pathology, Duke University; Fellowship, Neuropathology, Duke University. **Board**

Certification: Anatomic Pathology (1987); Neuropathology (1987).

SERVICE

Service as Pathology Chair: Acting Chair, Department of Pathology, Children's Hospital Boston, Harvard Medical School (2000-2001); Chair, Department of Pathology and Anatomical Sciences, University of Missouri (2001-2012); Pathologist-in-Chief of Pathology and Laboratory Medicine, and Medical Director of Lifespan Laboratories, Brown University (2012-2022). **Leadership Roles Before, During, and After Service as Chair:** Associate Director, Medical Scientist Training Program, Duke University (1989-1991); Director of Neuropathology, Department of Pathology, Children's Hospital (1991-2001); Director, Tom and Anne Smith M.D.-Ph.D. Program, University of Missouri (2007-2012); Director, Center for Translational Neurosciences, University of Missouri (2007-2012); President, New England Society of Pathologists (2017-2018); Vice President, International Society of Neuropathology; Vice President, American Association of Neuropathologists. **Other Academic Positions After Service as Chair:** Professor of Pathology, Professor of Neurology, Brown University (2012-Present); Deputy Director for Translational Research, Lifespan Cancer Institute (2017-Present).

AREAS OF PROFESSIONAL INTEREST

Research: Dr. Anthony's laboratory is conducting research in cellular neurosciences - the study of the brain at a cellular and molecular level. A major focus of the laboratory is the study of cancer involving the brain, both tumors that originate in the brain and those that metastasize to the brain. Dr. Anthony's lab was involved in defining the relationship between the desmoplastic/nodular variant of medulloblastoma and the PTCH gene, located on 9q22.3 by recognizing that patients with Gorlin's syndrome (basal cell nevus syndrome) develop this specific variant of medulloblastoma (desmoplastic variant), later recognized as the sonic hedgehog altered medulloblastoma. More recent studies are exploring are studying the molecular phenotype of malignant glioma cells, with a particular focus on the population of cells within the tumors that are responsible for the growth and aggressive clinical behavior of gliomas. These tumorigenic therapy-resistant cells, also known as tumor stem cells, share some characteristics of normal neural stem cells in their growth characteristics and cellular and molecular phenotype. The isolation and identification of tumor-initiating cell populations capable of forming tumors creates a powerful model for

understanding the development of brain tumors (e.g. FOXO3 regulates a common genomic program in aging and glioblastoma stem cells. Aging and Cancer, 2021; DOI: 10.1002/aac2.12043; 106; Stem cell phenotype predicts therapeutic response in glioblastomas with MGMT promoter methylation. 2022, Acta Neuropathol Commun; <https://rdcu.be/cY0e3>). **Clinical:** Anatomic pathology, neuropathology. **Educational:** Medical student education – pathology, anatomy, and neurosciences; Graduate medical education – neuropathology, laboratory administration, informatics; Post-graduate education – neuropathology; Editor of the Manual of Basic Neuropathology (Escourolle and Poirier) and contributor to Robbins and Cotran Pathologic Basis of Disease. **Mentoring:** Of prior trainees (2 pre-doctoral, 8 post-doctoral, and 30 clinical fellows), there are 9 assistant professors, 7 associate professors, 7 professors, and 2 chairs of pathology departments. **Current Interests:** Research in cancer stem cells and neuromuscular disease, and practice of anatomic pathology and neuropathology.

ACHIEVEMENTS

Honors and Awards: Weil Award (Honorable Mention) for the best scientific work in experimental neuropathology, awarded by the American Association of Neuropathology (1982); Mechanism Award from the Society of Toxicology for the best experimental work on the mechanism of action of a toxic compound (1988); Edison and Sallie Miyawaki Teaching Award, awarded by Harvard Medical School to the best teacher in medical neurosciences (1998); Recipient of multiple grants from NIH, NSF and multiple national foundations; Recognized as one of top pathologists (top doctors) in Rhode Island by Castle Connolly and by Rhode Island Monthly in (2016-2022). **Professional Achievements of Which You are Most Proud:** Of prior trainees (2 pre-doctoral, 8 post-doctoral, and 28 clinical fellows), there are 9 assistant professors, 7 associate professors, 7 professors, and 2 chairs of pathology departments; Discovery of stem cell phenotypic transitions as drivers of resistance to treatment, and identification of pathways for new targets of personalized therapies; Leadership of national organizations, serving as President of New England Society of Pathologists, Vice President of the International Society of Neuropathologists, and Vice President of the American Association of Neuropathologists (incoming President 2024); Creation of strategic alliances between Lifespan Laboratories and the RI Department of Health that led to Rhode Island being the first state in the nation to achieve testing parameters to "Safely Reopen" during COVID-19 pandemic of 2020; Recipient of 1999 Miyawaki Award as best medical neuroscience educator at Harvard Medical School.

OUTSIDE INTERESTS

Hobbies: Music - piano playing and singing; Boating. **Volunteer Activities:** Youth in Action; Local political activities as spouse of City Councilor.