

## Timeline of major milestones in the Department of Pathology

1929: Howard Karsner, MD, establishes the Institute of Pathology at Western Reserve University, serving University Hospitals and the Schools of Medicine and Dentistry, and develops a new national model for an integrated pathology program spanning clinical diagnostics, research and teaching.

1934: Harry Goldblatt, MD, describes the role of the kidneys in hypertension (high blood pressure), laying the foundation for the discovery of renin and eventually the development of enzyme-inhibitor medications to treat chronic hypertension.

1946: Louis Pillemer, PhD, develops preparations of tetanus antigen, leading to the first successful triple vaccine (DPT) targeting diphtheria, pertussis (whooping cough) and tetanus, which virtually eliminates these once-fatal diseases in the United States.

1951: James Reagan, MD, pioneers cytopathology for cancer detection and introduces diagnostic terminology for Pap smear results reporting, including dysplasia, carcinoma in situ and squamous carcinoma.

1955: Alan Moritz, MD, known as the “Father of Forensic Pathology,” works to establish forensic pathology as a medical subspecialty and influences development of a professional US Medical Examiner system, displacing lay coroners in that position.

1954: Louis Pillemer, PhD, in collaboration with Irwin Lepow, PhD, and Enrique Ecker, PhD, discovers an alternative pathway for the immune response that does not involve antibodies. Ecker and Lepow also define components of the classical pathway of complement activation, a system of proteins in the blood that is activated to initiate the immune response.

1978: Masamichi Aikawa, MD, PhD, discovered malaria infection mechanisms and contributed to efforts to develop a malaria vaccine.

2012: James Anderson, MD, PhD, co-authored a first-in-human test of a wireless controlled drug delivery microchip for the treatment of osteoporosis.

Early 1990s: Pathology Department in top four in U.S. for NIH funding.

1996: Pierluigi Gambetti, MD, develops first classification of sporadic prion diseases, now used worldwide in diagnosing this class of dementias, caused by mutation of the prion protein gene. He defined and named fatal familial insomnia, linked to a mutation of the prion protein (PrP) gene, which was then linked Creutzfeldt-Jakob disease (CJD). He founded the Centers for Disease Control National Prion Diseases Pathology Surveillance Center.

2008-2020: Department doubles in faculty number. In addition to the pre-existing divisions of Anatomic Pathology and Clinical Pathology, the Division of Experimental Pathology is

formalized, the Center for Global Health and Disease becomes a Division in the Department of Pathology, the Division of Genomic and Molecular Pathology is launched, and the Division of Community Hospitals Pathology is launched to provide Pathology services at 12 community hospitals, reflecting the growth of the University Hospitals Health System.

2010s-2020s: Department in top 10 U.S. Pathology Departments in NIH funding ranking.