

A woman with long, wavy hair is looking through the eyepiece of a microscope. The image is overlaid with a semi-transparent blue filter. The text "UW Medicine Neuropathology" is positioned below the image.

# UW Medicine Neuropathology

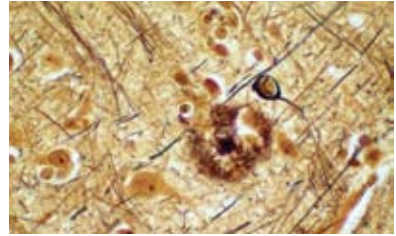


## Neuropathology in Patient Care

Surgical Neuropathology is that subspecialty of pathology that provides diagnoses on biopsies from the brain, spinal cord, skeletal muscle, peripheral nerve, and eye. In this effort we work closely with neurosurgeons, neurologists, neuroradiologists, and radiation oncologists to assure the best diagnosis and treatment plan for our patients.

## UW Medicine Neuropathology

UW Medicine Neuropathology is a collaborative group of board-certified neuropathologists, technologists, and administrative staff who work together to assure the highest quality service. Our group consists of excellent neuropathologists with varied areas of subspecialization and includes the current vice-president and past president of the American Association of Neuropathologists, the largest organization of neuropathologists in the world.



*High power of neuritic plaque and neurofibrillary tangle in Alzheimer's Disease.*

## Clinical Services

### Neuropathology Areas of Expertise

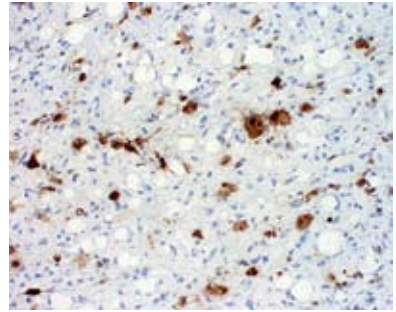
- Brain and spinal cord tumors
- Skeletal muscle & peripheral nerve
- Ocular – cornea, conjunctiva and orbital biopsies, and eye globes

### Communication with Physicians

We stress the importance of communication between the treating physician and the neuropathologist. Part of this communication is our need to have basic information about the patient, results of imaging studies, and previous treatments. We call the treating physician and discuss this information as well as our interpretation of the biopsy with every consult.

## Brain Tumors

UW Medicine Neuropathology provides fast turnaround service for all types of neurosurgical specimens. We will contact the referring physician the day the specimen is first reviewed. Specialized services include a large panel of immunohistochemical protocols as well as molecular studies for typing and

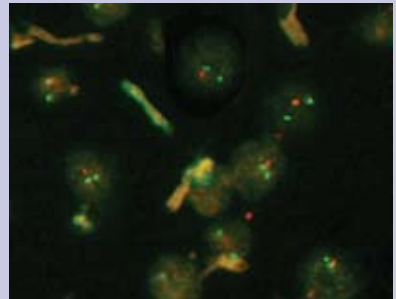


*Immunohistochemistry of a brain tumor.*

grading glial neoplasms, including determining deletions of chromosome 1p and 19q. For pituitary lesions our immunohistochemical evaluation includes TSH, LH and FISH. For metastatic carcinoma we provide a full panel of antibodies for assessing primary source. A full panel of surface markers is used for lymphoid subtyping.

## FISH

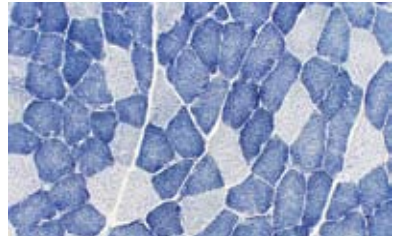
UW Medicine Neuropathology specializes in Fluorescence In Situ Hybridization (FISH) in support of our diagnostic and research services. The FISH image to the right is a composite micrograph of fluorescence microscopy from hybridization of 1q (green signal) and 1p (red signal) probes used in the molecular characterization of oligodendroglial



neoplasms. The rounded oligodendroglial nuclei are seen faintly with generally 2 signals from the 1q chromosome arm (control) and 1 signal from the 1p chromosome arm, indicative of a deletion of 1p. The Appearance for a 19q deletion is similar (not shown). Studies indicate that deletions of 1p and 19q chromosome arms are much more common in oligodendroglial neoplasms compared to other gliomas and there is improved prognosis when these deletions are found.

## Neuromuscular

Muscle biopsies are among the most challenging specimens in pathology, and preparation by skilled technologists as well as evaluation by experienced neuropathologists are critical to providing an accurate diagnosis. Our team of experienced and highly skilled technologists performs a series of histochemical stains on frozen and paraffin-embedded tissues to correlate histological findings with clinical information, expertly preparing specimens for evaluation and diagnosis. Electron microscopy, immunohistochemistry, enzyme assays, and DNA studies are also available to assist in the diagnosis if necessary. UW Medicine Neuropathology offers over 150 special procedures for muscle biopsy analysis.



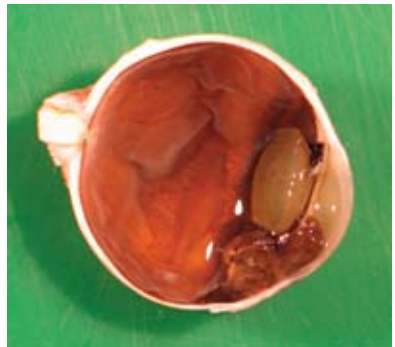
*Skeletal muscle biopsy: NADH stain.*



*Peripheral nerve biopsy: teased fibers.*

## Ocular

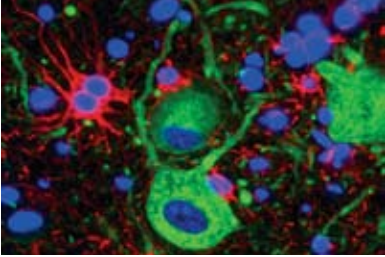
UW Medicine Neuropathology provides pathological examination for all ocular specimens, including cornea, conjunctiva, and orbital biopsies, and globes. Rare ocular tumors and subtle differences among common tumors are important aspects of ocular pathology; confirmation of the type and grade of an ocular tumor by an experienced pathologist is an important part of the treatment decision process.



*Enucleated globe: hemisection with melanoma.*

## Research Support

UW Medicine Neuropathology also provides research assistance, preparing histochemical and immunohistochemical staining and analysis of tissue from models of neurologic diseases. Please contact the main UW Medicine Neuropathology Administrative Office for more information at 206-731-6315.



*Cerebral cortex: focal cortical dysplasia.*

## Faculty

Thomas Montine, M.D., Ph.D.

Professor of Pathology and Neurological Surgery, Director of Neuropathology

Ellsworth Alvord, M.D.

Professor Emeritus

Donald Born, M.D., Ph.D.

Clinical Associate Professor

Robert Hevner, M.D., Ph.D.

Associate Professor

Cheng-Mei Shaw, M.D.

Professor Emeritus

Josh Sonnen, M.D.

Acting Instructor

Alexander Spence, M.D.

Professor, Pathology, Oncology and Neurological Surgery

Jing Zhang, M.D., Ph.D.

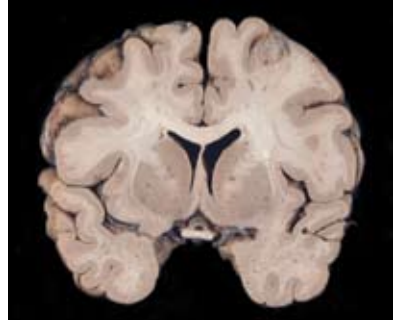
Associate Professor

## Shipping Instructions

Send specimens, slides or blocks, patient information and UW Medicine Pathology Service Request Form to UW Medicine Neuropathology at the following:

### Overnight

Harborview Medical Center  
UW Medicine Neuropathology  
325 Ninth Ave  
Room 2EC21  
Box 359791  
Seattle, WA 98104



*Coronal section of brain with metastatic carcinoma.*

### Via Cab or Courier

Harborview Medical Center  
UW Medicine Neuropathology  
Ground West Information Desk  
320 Eighth Ave  
Seattle, WA 98104

Label package: "Diagnostic Tissue Specimen"

Upon arrival call 731-6315 or 731-3910

### Muscle Biopsies

Contact the UW Medicine Neuropathology Histology Lab (206-731-3910) at least 24 hours before muscle (fresh or frozen) biopsy is collected.

Please visit the UW Medicine Neuropathology website to download a copy of the UW Medicine Pathology Service Request Form and for more information on UW Medicine Neuropathology consultation services and guidelines on how to prepare and ship various types of specimens.

[www.pathology.washington.edu/clinical/neuropath](http://www.pathology.washington.edu/clinical/neuropath)

## UW Medicine Pathology

UW Medicine Pathology brings together state-of-the-art technology and highly trained personnel, including nationally and internationally recognized faculty to provide comprehensive diagnostic, and personalized service, to physicians, community hospitals, independent laboratories and other health care organizations. We combine sophisticated testing and informatics capabilities of fully accredited laboratories with the resources of an academic and teaching institution in its delivery of pathology services.

Our operations are based at the University of Washington School of Medicine, University of Washington Medical Center, Harborview Medical Center, and the Seattle Cancer Care Alliance. Pathology faculty members also serve at Children's Hospital Medical Center, Puget Sound Veterans Affairs Medical Center and the Fred Hutchinson Cancer Research Center. These collaborative efforts have generated innovative studies in the basic mechanisms of disease applied to diagnostic pathology – the foundation of our leading-edge research discoveries, and of our training programs for graduate student, residents and fellows.

# UW Medicine

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Harborview Medical Center   UW Medical Center   School of Medicine

**UW MEDICINE NEUROPATHOLOGY  
CONTACT INFORMATION:**

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UW Medicine  
Neuropathology

[www.pathology.washington.edu/clinical/neuropath](http://www.pathology.washington.edu/clinical/neuropath)

# UW Medicine

*a passion for life*

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