The workshop is intended to provide the participant with an understanding of the basic neuropathological features of age associated neurodegenerative diseases. This will include neuropathological hallmark lesions (e.g., amyloid-β plaques, neuritic plaques, neurofibrillary tangles/threads, Lewy bodies/neurites etc.) and an explanation how these lesions are assessed to classify diseases (e.g., neuritic Braak stages, amyloid-β phases, CERAD score, NIA-AA criteria, McKeith Criteria etc.).

The workshop will consist of both lectures and practical sessions; over 250 scanned (immuno)histological slides are already available to be examined using Aperio software and participants can easily access those slides using their own laptop/tablet/iphone. By attending this workshop the participant should gain a solid and lasting knowledge about the basics covered (e.g., difference amyloid-β plaques vs neuritic plaques and why this difference matters).

It is felt by the workshop organizers that unfortunately many colleagues working in the field often lack such basic knowledge and hence some of the scientific work is considerably flawed at a very basic methodological level (e.g., comparison between CERAD scores and PET amyloid imaging data). Yet, the organizers believe that basic principles of neuropathology in neurodegeneration can be understood by non-neuropathologists and such an understanding should be helpful not only in interpreting neuropathological data but also in the planning and conducting of respective scientific studies.

Of note, the workshop is not intended to showcase most recent neuropathological developments that would be of interest to an audience already familiar with neuropathology. Therefore the workshop should be of interest for students, PhDs and physicians.

Before the workshop (3 to 4 weeks) participants should receive electronic handouts with main topics that will be covered (e.g. staging scoring criteria) and list of selected references.

Participants should bring their own device (laptop, iPad etc.) to access data (slides) that are provided online.

Most sessions are divided into lecture and practical parts. Lectures will be interactive, i.e. participants are encouraged to ask questions. During practical parts participants will have access to electronic slides and should apply the lectures contents (e.g., lecture covers Braak stages, participant will assign Braak stages to various cases).

Schedule - Preliminary

8:00 WELCOME / INTRODUCTION
Attems

8:15 AMYLOID
Thal
Lecture: Basics, plaques, CAA, amyloid phases
Practical: state amyloid deposition types (subpial band like, fleecy, diffuse, dense); distinguish between CAA and capCAA, assign amyloid phases.

9:15 HYPERPHOSPHORYLATED TAU
Attems
Lecture: Basics, tangles/ threads, Braak stages
Practical: Assign Braak stages to cases
10:15 COFFEE BREAK

10:45 THE NEUROPATHOLOGICAL DIAGNOSIS OF ALZHEIMER’S DISEASE
Jellinger
Lecture: CERAD scores, NIA-AA
Practical: Assign NIA-AA score to cases

11:45 LEWY BODY DISEASES
Alafuzoff
Lecture: Basics, lewy bodies/neurites, McKeith/ Braak asyn stages, concept Lewy body diseases (dementia with Lewy bodies, Parkinson's dementia, Parkinson's disease)
Practical: assign McKeith/ Braak asyn stages

12:30 LUNCH BREAK

14:00 CEREBROVASCULAR PATHOLOGY
Thal
Lecture: examples for cerebrovascular pathology e.g. large and small vessel disease, hemorrhage, infarcts
Practical: state severity of atherosclerosis, SVD, white matter pallor, deep gray matter lesions, distinguish fresh/ old infarct

14:45 TDP-43
Alafuzoff
Lecture only: brief overview of TDP-43 proteinopathies

15:00 MULTIMORBIDITY OF THE "OLD" HUMAN BRAIN (OVERLAP OF PATHOLOGIES)
Attems
Lecture: recapitulate morning (staging), emphasize high co-occurrence of pathologies (ie multimorbidity) incl findings from large autopsy studies
Practical: give NIA-AA, McKeith (maybe vascular scores, depending on cerebrovascular lecture contents) to mixed cases, spot TDP-43.

15:30 COFFEE BREAK

15:45 CLINICO-PATHOLOGICAL CORRELATIVE STUDIES AND NEURODEGENERATION
Jellinger
Lecture only: emphasize the need of post mortem neuropathological examination as quality control/ feedback for the clinician (clinical diagnosis, drug trials). Highlight that even if clinical diagnostics improve (MRI, biomarkers etc.), neuropathology is highly important/ valuable in the light of ever increasing cerebral multimorbidity.

16:15 NEUROPATHOLOGICAL EXAMINATION OF VARIOUS CASES
Practical only: Participants examine various cases

17:00 END