

Thursday October 14th, 12pm (noon) ET
Presentation in Zoom, accessible via the C-STAR website:
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**Optimal grading and segmentation of Enlarged Perivascular Spaces (EPVS):
Applications in Chronic Stroke**

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Enlarged perivascular spaces (EPVS) is a key component of assessing cerebral small vessel disease (CSVD). Even in the presence of the other small vessel disease components (white matter hyperintensities, lacunes, microbleeds, atrophy), EPVS has been found to be independently associated with worse cognitive outcomes. However, EPVS is still understudied and, therefore, not completely understood. One of the barriers to investigating EPVS is quantification. Currently, EPVS are typically graded on a visual grading scale by neuroradiologists, based on the approximate number of EPVS, specifically in the basal ganglia and centrum semiovale. Since this is a visual scale, the grading is inconsistent, and typically has poor inter- and intra-rater reliability. Recent attempts at automated grading and segmentation of EPVS have proved somewhat successful, but have relied on research-grade imaging that is not feasibly attainable in clinical settings. My current work focuses on combining multiple state-of-the-art techniques (EPVS enhancement, Frangi Filtering with Bayesian Optimization, Machine/Deep learning) to optimally grade and segment EPVS using clinically-feasible imaging (T1 and T2) in chronic stroke patients. I am working in collaboration with Dr. Newman-Norlund and his team to generate binary lesion masks and automated grading for a large cohort of left-sided stroke patients to investigate correlations between PVS severity and location with cognitive outcomes.

The online lecture can be followed online from your computer, tablet or smartphone, in **Zoom**. The zoom link is accessible via the C-STAR website: <http://cstar.sc.edu/lecture-series/>

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