

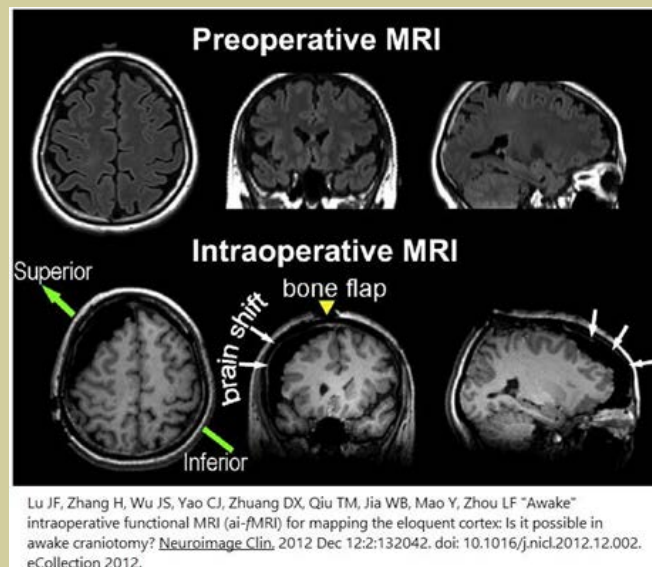
Anne-Cecile Lesage

Research Scientist

Morfeus Lab

Current Project

My current project is the design of an HPC Brain Shift prediction and resection workflow, using detailed brain segmentation from preoperative images, viscoelastic models, and fluid structure interaction for the simulation of Cerebro Spinal Fluid loss. In this image, the brain shift was shown using the example of patient 7. The upper row shows the orthographic views of the preoperative structural image (T2- FLAIR). The lower row shows the corresponding planes of the same patient's intraoperatively acquired images (3D-T1-MPRAGE). White arrows show the brain deformation. The yellow arrow indicates the incision line on the scalp (bone flap). The green arrow indicates the direction of the patient's head on the operating table.



Previous papers

Salmon, R., Nguyen, T. C., Lesage, A. C., Finite Element Analysis of Virtual Lumpectomy using Multimodal Imaging, submitted to "International Journal of Computer Assisted Radiology and Surgery"

Lesage, A. C., Garbey, M., Augmenting a wireless portable Ultrasound Imaging with a real-time hemodynamics solver. BIBE 17th IEEE International Conference on BioInformatics and BioEngineering. October 23-25 2017. Washington DC, USA.

THE UNIVERSITY OF TEXAS

MD Anderson
Cancer Center

Making Cancer History®

Previous Papers *(cont'd)*

Lesage, A. C., Yao, J., Hussain, F., Kouri, D. J., Low frequency reflection data augmentation by an inpainting method: 1D acoustic media. *Geophysics*, 80, 4, 2015.

Marras, S., Suckale, J., Eguzkiza, B., Houzeaux, G., Vazquez, M., Lesage, A.C., Advancing our understanding of the onshore propagation of tsunami bores over rough surfaces through numerical modeling. American Geophysical Union abstract, 2016.

Owen, H., Houzeaux, G., Samaniego, C., Lesage, A. C., Vazquez, M., Recent ship hydrodynamics developments in the parallel two-fluid flow solver Alya, *Computers and Fluids*, 2012.

Lesage. A. C., Allain, O., Dervieux, A., On Level Set modelling of Bi-fluid capillary flow, *International Journal of Numerical Methods in Fluids*, Vol 53, Issue 8, pp.1297-1314, 2007.