Meeting 07-08-2015

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1. Participants

Martin Styner Juan Carlos Prieto

2. Starting tasks

Get to know the tools. Get familiar with GIT, ITK, VTK, Slicer, testing facilities. As a general rule, all the tools have a GUI but they need to be cluster friendly.

2.1. Wiki

The wiki offers relevant information about the network setup in the lab. The wiki is located at http://pandora.ia.unc.edu/wiki/index.php/Main_Page

More information about the network setup and computers can be found at http://pandora.ia.unc.edu/wiki/index.php/InfrastructureNotes

TODO

Create account Wiki and remove Fileserver and SUN (end of line)

3. Ongoing projects/grants involving François

Rodent imaging → Involves mostly data processing. Sulik & Parnell (School of medicine) Autoseg, NeoSeg pipeline. IDDRC (Intelectual disability dissease research center) Cranio/orthodontics

4. My future project

-TAMU (Texas A&M University) - Temperature MRI porcine model of TBI (traumatic brain injury) - Local temperature modulation can reduce the impact of TBI. (Blast, then cooling down the brain) - Have measurements - MRI pre-exposure - MRI post-exposure - pre-treatment - post-treatment → Validation of cooling - Types of measurements: - Temperature MRI, check temperature distribution - Structural imaging T1W, T2W - DTI - Vascular perfusion, regional measurements. - We have to measure temperature distribution. - Edema volume, Edema segmentation + volume. - DTI fiber properties - Perfusion stats

- TAMU (Texas AMU): Muscular dystrophy.
- DMD - muscle segmentation
- DMD - muscle MRI - DTI (diffusion properties of muscles), Important to know about DTI!

4.1. TODO: Keep reminding Martin to move forward to create the position.

4.2. TODO: References on temperature imaging.

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- Liu G, Qin Q, Chan KWY, Li Y, Bulte JWM, McMahon MT, et al. Non-invasive temperature mapping using temperature-responsive water saturation shift referencing (T-WASSR) MRI. NMR in biomedicine. 2014 Mar;27(3):320–31. PMCID: PMC3989428
- Soher BJ, Wyatt C, Reeder SB, MacFall JR. Noninvasive temperature mapping with MRI using chemical shift water-fat separation. Magn Reson Med. 2010 May;63(5):1238–46. PMCID: PMC2980328
- Tazoe J, Yamada K, Sakai K, Akazawa K, Mineura K. Brain core temperature of patients with mild traumatic brain injury as assessed by DWI-thermometry. Neuroradiology. 2014 Oct;56(10):809–15. PMCID: PMC4180914