

**Minutes**  
**CRU December 30, 2014 meeting**  
**12:00 PM**  
**Attendees**

D Barboriak, Barbara Kurth, J Voyvodic, K Choudhury, J Lo, S Hall, J MacFall, B  
Chin

**I. Introduction**

- Approval of 11/25/2014 minutes postponed until January meeting
- New question on feasibility check list to be submitted to ? What are the qualifications of study team personnel? *Will need to address this as protocols are submitted to CRU.*

**II. Approval Of:**

Pro00054008, PI C MUH, Using MR elastography to image the human brain, in healthy and hydrocephalic states - a Pilot study

This was discussed at the November meeting. We requested a more stringent data analysis plan before a vote to approve.

Data Analysis Plan:

One purpose of this study is to identify the most appropriate biomarkers to calculate from the MRE data. Shear modulus has been widely used in the literature, and it remains one of the potential biomarkers for this study. However, biomarkers based on viscoelastic models may prove more sensitive to physiological changes.

Shear wave behavior will be modeled using various viscoelastic parameterizations (e.g., Voigt, Maxwell, and fractional 3-parameter models) to assess which model type yields the best material characterization (Sack 2013). Evaluation will be based on both test-retest consistency in normal volunteers and on goodness-of-fit across a range of vibration frequencies. The parameter sets that describe each of these models will serve as candidate biomarkers.

Statistical analysis will be based primarily on globally averaged viscoelastic shear parameters. ANOVA analysis will be conducted across the three groups. A repeated measures t-test will also be conducted for the 3<sup>rd</sup> group comparing states before and after shunt revision surgery. If spatial resolution of shear parameterization permits, a periventricular region of interest (ROI) will be defined, and a two-way ANOVA will be conducted with factors study group and global vs within-ROI (Streitberger 2011).

*Approval pending S Hall signoff (already approved by W Freeland but Susan has not seen the budget and Wendy is out for holidays).*

