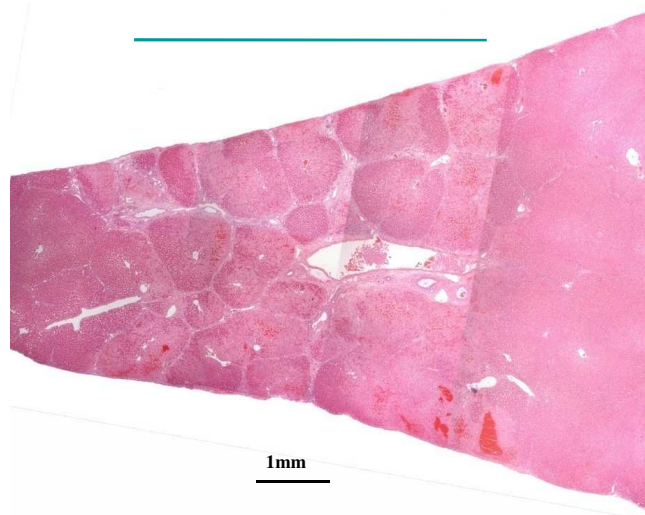


Finite Element Modeling of Tissue Damage

Smita De, Blake Hannaford

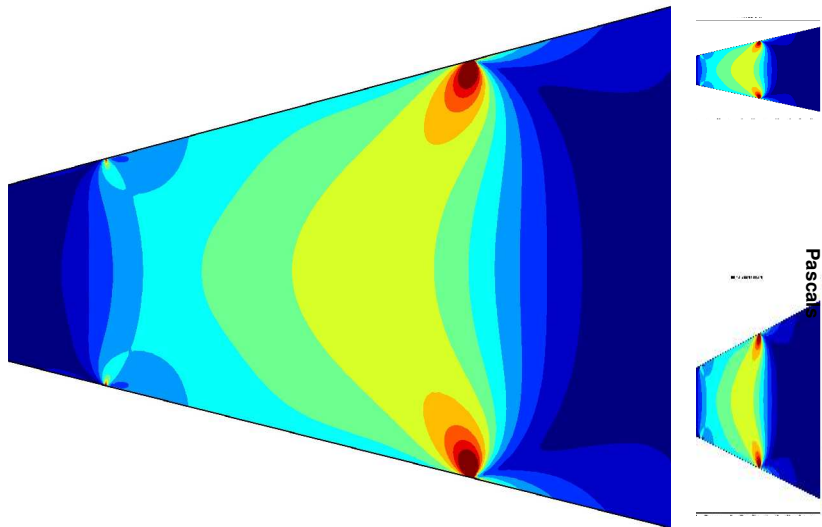
1

Macroscopic Model



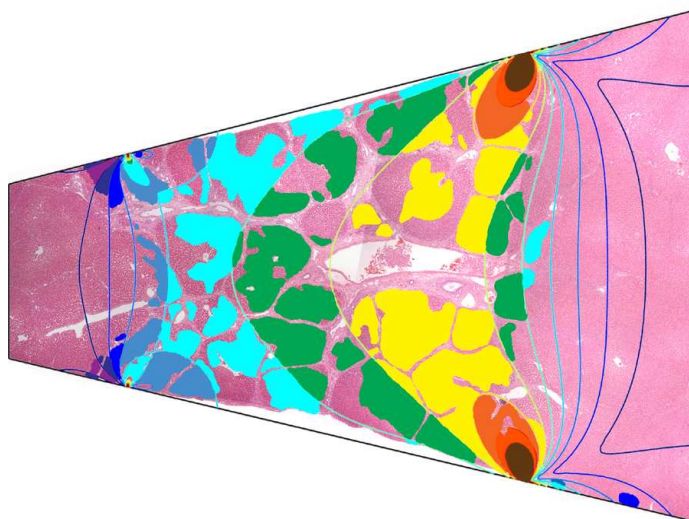
2

Macroscopic Model



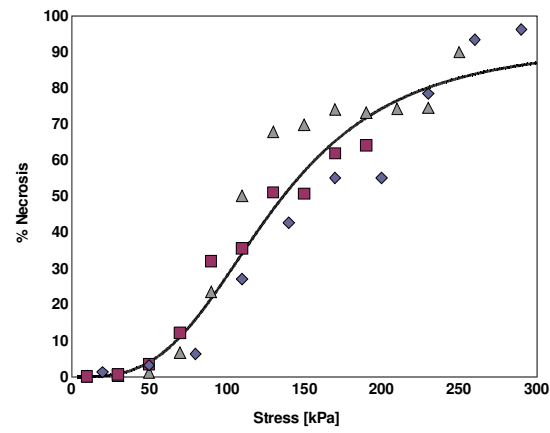
3

Macroscopic Model



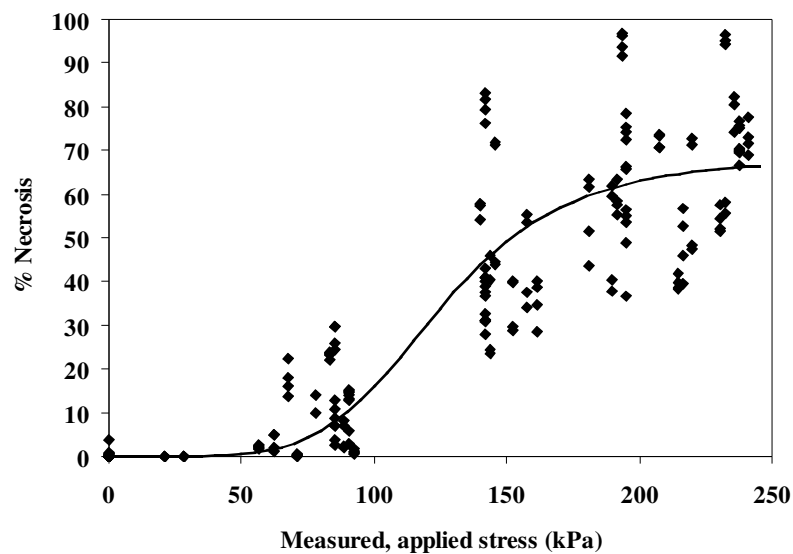
4

Necrosis vs. FE-based stress



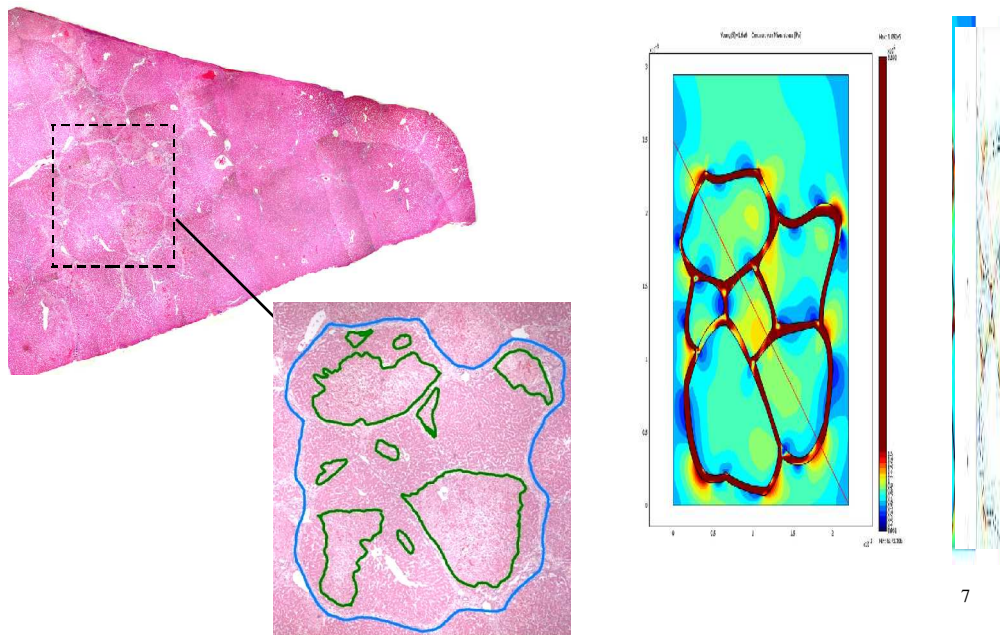
5

Necrosis vs. MEG-based stress

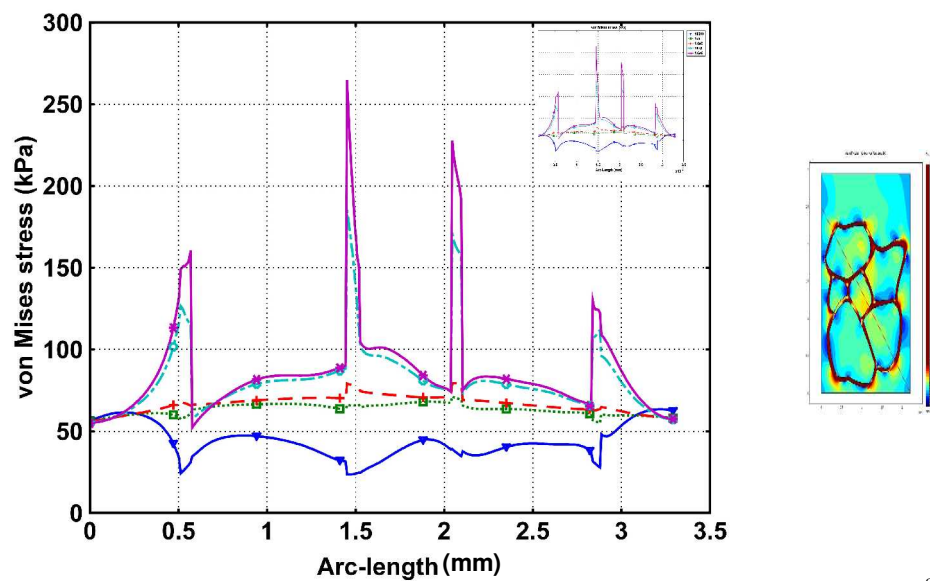


6

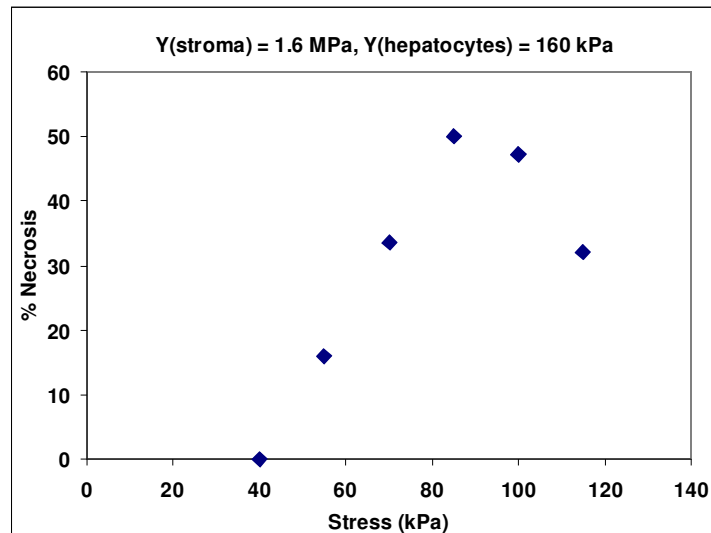
Microscopic Model



Parametric Study



% Necrosis-Microscale



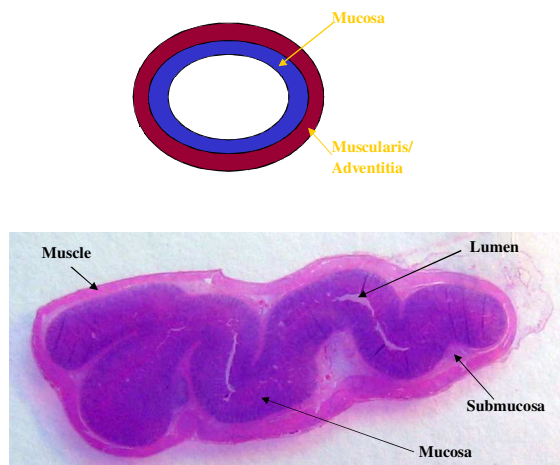
9

Conclusions

- Tissue damage can be quantified by histological analysis of recovery process
- Much work remains to be done
- What are the *clinically significant* thresholds?

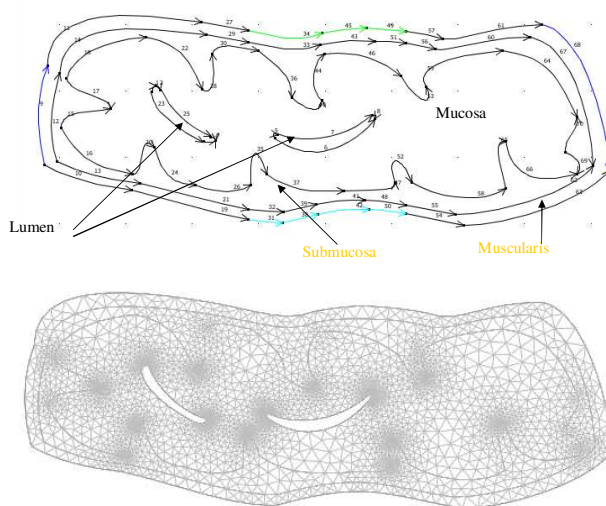
10

Bowel model



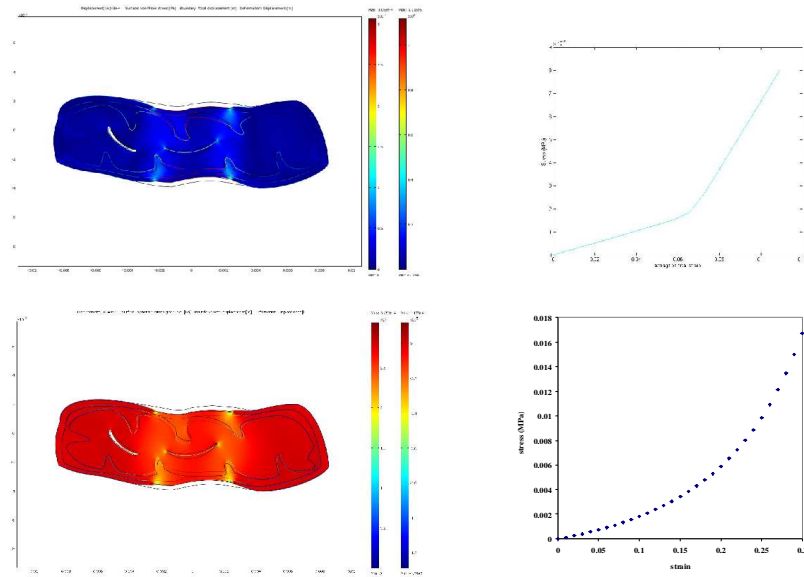
11

Bowel model 2



12

Bowel model 3



13