**Possible Research to confirm or disprove** **whether cell traction is the cause of collagen** **alignment, compression:**

**I***) Mutate mice in some way that weakens traction: Predict their embryos can't form skeletal muscles  {testing the "****dogma"****}.*

*A German group tried this, observing that* normal muscles still formed

in mutants whose wound constriction had been weakened by 1/2.

***II)*** *Implant pieces of surgical sponge into embryos where muscles would be about to form: Predict that sponge material will get rearranged into muscle-like shapes, and attached to bones; Bruce Carlson did this successfully with regenerating frog gastrocnemius.*

***III)****Implant clumps of especially strong tissue culture cells: Extra muscle "origins" and "insertions" should develop at implant location*.

***IV****) Identify a stable, non-toxic, nematic liquid crystal substance, or anything else that becomes strongly birefringent when strained even slightly; watch whether such birefringence always precedes formation of muscles. What birefringence pattern forms on cornea*?

***V****) Put fluorescent collagen on developing corneas, notochords or other places where perpendicular layers form.*

***V****I) Figure out how pinnate patterns of muscle cells can be caused to form using traction, and* *look for predicted pre-patterns.*

***VI****I) Implant tiny samarium magnets, with roughened or sticky surfaces, into early chick limb buds; then rotating magnetic fields should* *act like winches aligning collagen and muscle cells*.