

**TOWARDS THE DEPENDENCE OF PHASE SEPARATION OF EYE LENS
GAMMA B CRYSTALLIN ON IONIC STRENGTH.** Eli Putzig (efp5206@rit.edu),
Ben Haehnel, Mark Wallingford, Vern Lindberg*, Stephanie Dorn, Dawn Carter*, and
George M. Thurston* (georgemthurston@gmail.com)

Gamma crystallins are globular eye lens proteins that exhibit interprotein attractions, liquid-liquid phase separation and other phase transitions related to cataract disease. We are studying the phase separation temperature of gamma-B crystallin vs. pH and ionic strength, in order to help understand the role of charge in affecting its high concentration solution properties. Our preliminary data suggest that at pH near 7.1, at which the protein has a net charge near +2 electronic units, the phase separation temperature rises by about 8 Kelvin as the ionic strength is decreased from 0.24 molar (M) to 0.048 M. Such a finding would be consistent with increasing inter-protein attraction as the Debye screening length increases. Further experiments are needed to quantitatively characterize the liquid-liquid coexistence boundary as a function of ionic strength.