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Tracy L. Stepien* (tstepien@ufl.edu) and **Timothy W. Secomb** (secomb@u.arizona.edu).
Spreading Mechanics and Differentiation of Astrocytes During Retinal Development. Preliminary report.

In embryonic development, formation of the retinal vasculature is critically dependent on prior establishment of a mesh of astrocytes. Astrocytes emerge from the optic nerve head and then migrate over the retinal surface in a radially symmetric manner and mature through differentiation. We develop a partial differential equation model describing the migration and differentiation of astrocytes, and numerical simulations are compared to experimental data to assist in elucidating the mechanisms responsible for the distribution of astrocytes. (Received August 12, 2019)