1014-92-981 **Sarah E. Frey*** (`sfrey@mcs.csueastbay.edu`), California State University, East Bay, Department of Mathematics and Computer Sci., 25800 Carlos Bee Blvd., Hayward, CA 94542, and **Claudia Uhde-Stone** (`claudia.stone@csueastbay.edu`), California State University, East Bay, Department of Biology, 25800 Carlos Bee Blvd, Hayward, CA 94542. *Biomechanical Model of Arabidopsis thaliana Root Hair Growth.* Preliminary report.

Root hairs are finger-like extensions of outer root cell walls used by many plants to expand the effective surface area through which the roots can absorb water. *Arabidopsis thaliana* is a plant which exhibits somewhat typical root hair growth and is used as a model plant in many genetics studies.

A linear elastic model for root hair growth will be presented. This results of this model are compared with experimental images of *Arabidopsis thaliana* root hairs to gain constraints on the material parameter values for the system. This includes information about the turgor pressure within the cell needed to produce substantial root hairs and the resulting rigidity reduction along the outer cell wall. (Received September 26, 2005)