1128-92-258   **Benjamin D. Jackson*** (`benjamin.jackson@wallawalla.edu`), Department of Mathematics, Walla Walla University, 204 S. College Ave., College Place, WA 99324. *Transport of Particles in a Biofilm-lined Hot Spring Effluent Channel.* Preliminary report.

Communities of bacteria adhering to surfaces–biofilms–are commonly found in natural and industrial systems, including hot spring effluent channels under flow conditions. Thus, modeling biofilms in the context of channel flow is important in understanding many natural systems. We develop a model which addresses the rate at which cells move in or out of the flow in a natural hot spring drainage channel. This is done by building a two-dimensional partial differential equation model of the stream. The model is parameterized using data gathered at Mushroom Spring in Yellowstone National Park. Using this data, we calculate erosion and adhesion rates at steady state in both upper and lower regions of the stream. (Received February 28, 2017)