1135-35-2397 **Sedar Ngoma*** (ngoma@geneseo.edu), Department of Mathematics, 330D South Hall, State University of New York at Geneseo, Geneseo, NY 14454. *Recovering a source function in a parabolic equation.*

We investigate an inverse source problem for a parabolic partial differential equation with an integral constraint. The source function depends only on the space variable. We show the existence and uniqueness of classical solutions and establish the continuous dependence of the solution on the data. Our proof yields a numerical algorithm that we implement using the finite element method. The numerical results we present show the accuracy of the proposed scheme. (Received September 26, 2017)