1046-34-40 **Britney Hopkins*** (Britney_Hopkins@baylor.edu), Department of Mathematics, Baylor University, Waco, TX 76798-7328. *Multiplicity of positive solutions for an even-order nonhomogeneous boundary value problem.*

In this talk, we focus on the existence of multiple positive solutions for the $2n$th order ordinary differential equation, $u^{(2n)} = \lambda h\left(t, u, u'', \ldots, u^{(2n-2)}\right)$, $t \in (0,1)$, satisfying the boundary conditions, $u^{(2k)}(0) = 0$ and $u^{(2k)}(1) = (-1)^k a_k$ for $k = 0, \ldots, n-1$, where $h : [0,1] \times \prod_{i=0}^{n-1}(-1)^n[0,\infty) \to (-1)^n[0,\infty)$ is continuous, $\lambda, a_k \geq 0$ for $k = 0, \ldots, n-1$, and $\sum_{k=0}^{n-1} a_k > 0$. We transform the boundary value problem into a system of second order boundary value problems and then apply the Guo-Krasnosel'skii Fixed Point Theorem multiple times, establishing the existence of several positive solutions. (Received June 26, 2008)