1106-VK-2654 **Narendra Kumar Govil*** (govilnk@auburn.edu), Department of Mathematics & Statistics, Auburn University, Auburn, AL 36849. *Bernstein Type Inequalities for Rational Functions.*

Let $\mathbf{P}_n$ denote the set of all complex algebraic polynomials $p(z) = \sum_{\nu=0}^{n} b_\nu z^\nu$ of degree at most n, and let $\mathbb{T} := \{z : |z| = 1\}$, the unit circle in the complex plane $\mathbb{C}$. For f defined on $\mathbb{T}$, we set $\|f\| = \sup_{z\in\mathbb{T}} |f(z)|$.

Let $\mathbb{D}_- = \{z : |z| < 1\}$, the region inside $\mathbb{T}$, and let $\mathbb{D}_+ = \{z : |z| > 1\}$, the region outside $\mathbb{T}$. For $a_\nu \in \mathbb{C}$, $\nu = 1, 2, \ldots, n$, let $w(z) = \prod_{\nu=1}^{n} (z - a_v)$.

Let $\mathbf{R}_n = \mathbf{R}_n(a_1, a_2, \ldots, a_n) := \{\frac{p(z)}{w(z)} : p \in \mathbf{P}_n\}$. Then $\mathbf{R}_n$ is the set of rational functions with possible poles at $a_1, a_2, \ldots, a_n$ and having a finite limit at ∞.

In this talk we would present some Bernstein type inequalities for Rational Functions that sharpen some of the results known in this direction. (Received September 16, 2014)