1116-11-803 **Colin Defant*** (`cdefant@ufl.edu`), 18434 Hancock Bluff Rd., Dade City, FL 33523. *Ranges of Divisor Functions.*

For any complex number c, let $\sigma_c \colon \mathbb{N} \to \mathbb{C}$ be the divisor function defined by $\sigma_c(n) = \sum_{d|n} d^c$. Let ζ denote the Riemann zeta function. The range $\sigma_{-1}(\mathbb{N})$ of the divisor function σ_{-1} is dense in the interval $[1, \infty)$. However, although $\sigma_{-2}(\mathbb{N}) \subset [1, \zeta(2))$, it turns out that $\sigma_{-2}(\mathbb{N})$ is not dense in $[1, \zeta(2))$. This leads to the following question. For which $r > 1$ is $\sigma_{-r}(\mathbb{N})$ dense in $[1, \zeta(r))$? In this talk, we provide an answer to this question and discuss some recent results (which have spawned from this question) concerning the sets $\overline{\sigma_{-r}(\mathbb{N})}$. We will also explore the basic topological properties of the sets $\sigma_c(\mathbb{N})$ for general complex c. (Received September 13, 2015)