1116-VN-2430 **Paul A Kinlaw*** (kinlawp@husson.edu). *Explicit Bounds on Several Sums and Functions Arising in Elementary Analytic Number Theory.*

We consider solutions of $\varphi(n) = \varphi(n+1)$ and $\sigma(n) = \sigma(n+1)$. Both equations are conjectured to have infinitely many solutions. Work of Erdős, Pomerance and Sárközy shows that the sum of reciprocals of solutions is convergent.

We will discuss recent joint work with Jonathan Bayless, including explicit bounds on the counting functions of smooth numbers, as well as numbers with k distinct prime factors. We use these results as tools to put explicit numerical bounds on the sum of reciprocals of solutions of $\varphi(n) = \varphi(n+1)$ and $\sigma(n) = \sigma(n+1)$. (Received September 22, 2015)