1163-11-863   **Jennifer Balakrishnan**, Boston, MA, **William Craig**, Dept MathCS, Charlottesville, VA 22901, **Ken Ono*** (`ken.ono691@gmail.com`), Dept Mathematics, University of Virginia, Charlottesville, VA 22901, and **Wei-Lun Tsai** (`tsaiwlun@gmail.com`), University of Virginia, Charlottesville. *Variants of Lehmer's Conjecture on Ramanujan's tau-function.*

Modular forms are generating functions of important quantities in arithmetic geometry, combinatorics, number theory, and physics. Despite many deep developments in the arithmetic geometric and analytic aspects (e.g. Deligne's proof of the Weil Conjectures, the development of Galois representations, Birch and Swinnerton-Dyer Conjecture, to name a few), some of the seminal questions about them remain open. Perhaps the most prominent of these is Lehmer's Conjecture on the nonvanishing of modular form coefficients such as Ramanujan's tau-function. In joint work with J. Balakrishnan, W. Craig, and W.-L. Tsai, the speaker has obtained the first results that establish that many integers are never modular form coefficients. This lecture is geared to a general audience. (Received September 13, 2020)