1171-13-171 **Austyn Simpson*** (awsimps2@uic.edu), Chicago, IL. *A conjecture about the Brenner-Monsky hypersurface.*

The F-signature $s(R)$ is an important numerical invariant in prime characteristic commutative algebra which detects regularity and strong F-regularity by asymptotically counting the number of free summands of $F_*^e R$. This invariant is notoriously difficult to compute, and theoretical shortcomings in the theory arguably stem in part from the resulting scarcity of examples. In this talk, I describe a conjecture supported by numerical evidence which, if true, provides a formula for the F-signature of the rings

$$\frac{k[[x,y,z,u,v]]}{(uv+\alpha x^2y^2+z^4+xyz^2+(x^3+y^3)z)}$$

where k is a field containing $\overline{\mathbb{F}_2}$ and $0 \neq \alpha$ varies over k. The formula depends on the degree over $\mathbb{F}_2$ of the parameter α, and (conjecturally) provides a family of hypersurfaces whose F-signatures form an infinite increasing sequence. (Received August 10, 2021)