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James T Long*, 809 Montbard Drive, West Chester, PA 19382, and **Chu Yue (Stella) Dong, Corey Staten, Rytis Umbrasas** and **Clifford A Reiter**. *A Cellular Model for Spatial Population Dynamics*.

Interacting populations exhibit complex behavior in nature. Classic quadratic iteration models with two or three populations exhibit some of the features seen in nature, but fail to account for spatial variation. Indeed, the diversity paradox is that many classic population models predict one species dominates while nature exhibits diversity. While various schemes have been presented to address this dilemma, we present a simple, deterministic cellular model that incorporates classic iteration schemes and a spatial migration component that provides for self-organizing and rich behavior. Our visualization method allows us to observe dynamically changing predominance of species, global diversity, waves of species progression, and highly organized spiral structures. (Received September 13, 2008)