

# UM Physics Department

## Miami 2020 Physics Conference (Online)

**Name:** Josh Erlich

**Title:** Background Independence in Composite Gravity

**Abstract:**

I will present a construction of a background-independent quantum field theory in which gravitation emerges at long distances as an artifact of short-distance physics. I will explain how a semiclassical description of spacetime satisfying Einstein's equations (plus corrections) emerges in the vacuum, and then how a gravitational interaction emerges from fluctuations of the curved-space vacuum.