

---

## Pathways Through Calculus

---

**James Hart**, Middle Tennessee State University, [James.Hart@mtsu.edu](mailto:James.Hart@mtsu.edu)

Inspired by and drawing inspiration from Project DIRACC and Project CLEAR Calculus, the text *Pathways to Calculus* (Carlson et al.) provides pre-calculus content designed to probe student reasoning and foster conceptual understanding of proportional reasoning, co-variational reasoning, the connection between slope and constant rate of change, and average rate of change. After teaching with these materials for several semesters, James Hart set about developing a series of calculus I investigations that build upon the notational conventions, habits of mind, and key ideas in *Pathways to Calculus*. Tentatively named “Pathways through Calculus” in honor of its progenitor, Hart’s collection of investigations aims to adapt key concepts from these three ongoing projects into a fairly traditional course layout. In this presentation, Hart will describe his philosophy and current state of the project, share some sample investigations, and discuss the benefits and challenges encountered while implementing them in his Calculus I course.