

1125-C1-1159 **Robert Talbert*** (talbertr@gvsu.edu), 1 Campus Drive, Mackinac Hall A-2-168, Grand Valley State University, Allendale, MI 49401. *Computational thinking in undergraduate discrete mathematics using Python and Jupyter notebooks*. Preliminary report.

Undergraduate discrete mathematics courses offer an excellent opportunity to link the world of abstract mathematics with the world of computation through the use of activities that focus on problem analysis, abstraction, algorithm development, and communication. When coupled with activities that empower learners to use computation to think in this way, this process is often called *computational thinking*. Originally envisioned by mathematician and educator Seymour Papert, the notion of computational thinking is a powerful paradigm for learning in which the learner uses computation to understand and frame solutions to problems and to construct new knowledge.

A recent technology that promotes computational thinking in any learning environment is the *Jupyter notebook* platform (<http://jupyter.org/>), a free and open-source application for creating documents that combine mathematical notation using LaTeX, formatted text using Markdown, and executable code using the Python programming language. In this talk, we will demonstrate use cases of Jupyter notebooks in set theory, combinatorics, and graph theory and discuss general frameworks for using Python and Jupyter in undergraduate discrete mathematics. (Received September 15, 2016)