INCOMPETENT TRUNKS AND TRIBUTARIES THAT DON'T PLAY FAIR:
GRAVEL DELTAS AT TRIBUTARY JUNCTIONS IN CENTRAL NEW YORK

Emily Carroll, Dept. of Earth Sciences, SUNY College at Oneonta, New York, 13820-4015, carrem16@gmail.com
Leslie Hasbargen, Dept. of Earth Sciences, SUNY College at Oneonta, New York, 13820-4015, hasbarle@oneonta.edu

The Problem:
Trunk streams should be able to carry away the load supplied to them from tributaries. (Playfair’s law: stream gradients at tributary junctions are “delicately adjusted to each other”). We find that a significant amount of coarse material is being delivered to the trunks from tributaries in central New York, and the trunks cannot move it.

Key Findings:
• Deltas at tributary junctions are common but not ubiquitous in central New York
• Mature hardwoods on some deltas imply ages of at least 50 years
• Bedrock incision (10-20 m) of first order channels on valley side slopes imply longer term erosion (older than Historic and younger than the Pleistocene)
• Tributaries with deltas range from ravines to 3rd order basins
• Delta size scales with contributing area
• Sediment size on the deltas scales with contributing area
• We hypothesize that Pleistocene ice streams eroded trunk valleys differentially, setting the stage for vigorous tributaries and incompetent trunks

Acknowledgements: