

CSAAPT Spring 2023 Semi-Virtual Meeting



Chesapeake Section of the
American Association of Physics Teachers
Spring 2023 Semi-Virtual Meeting
April 1, 2023 @ **JAMES MADISON UNIVERSITY**

Contribution ID: 17

Type: talk (15-minute)

A "Transformative" Assignment on Rotation: A Seemingly Simple Question Becomes an Epic Four Part Exploration

Saturday, April 1, 2023 2:30 PM (15 minutes)

A seemingly simple either/or question about which shape Optimus Prime should transform into becomes, when guided by the instructor, a four-part, back and forth, edge-of-your-seat drama with a nailbiter conclusion. Topics covered include angular acceleration and momentum, moment of inertia, alternative axes of rotation, function optimization, and the semantics of "disk" vs. "cylinder." Different approaches for algebra-based and calculus-based courses are discussed, as well as student feedback from the first semester that the assignment/activity was implemented.

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Session Classification: Afternoon Session 2B