

Abstract Submitted
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A mechanochemical model for myosin VI RIINA TEHVER,
AMANDA JACK, Denison University, IAN LOWE, University of Pennsylvania —
Myosin VI is a motor protein that transports cellular cargo along actin filaments.
This transport takes place as a result of a coordinated mechano-chemical cycle that
is controlled by external variables including imposed force and nucleotide concentra-
tions. We present a model that captures the different dynamic pathways that myosin
VI can take in response to these variables. The results of our model for experi-
mentally observable quantities, such as the motor velocity or run length, agree with
available experimental data, and we can also make predictions beyond the tested
regimes. Using the model, we study how myosin VI reacts to its environment and
test its operational efficiency.

Riina Tehver
Denison University

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