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April 16, 2010

Edward H. Egelman
Editor
Biophysical Journal

Dear Edward H. Egelman,

Please find attached our manuscript entitled, *Lattice spacing and multi-dimensional force in the cross-bridge*. To our knowledge, this is the first analytical treatment of a cross-bridge as a combination of torsional and axial springs capable of investigating the role of lattice spacing in force generation. This new model of the cross-bridge works via the lever-arm mechanism; consequentially, it displays novel sensitivities to lattice spacing and radial forces near those predicted by experiment. We found that changes in lattice spacing affected the cross-bridge's step size, as well as the axial and radial forces the cross-bridge generates.

We would suggest the following reviewers:

- Kenneth B Campbell, for his work on muscle modeling
- Thomas Irving, for his work on the effects of lattice spacing changes
- Dave W Maughan, for his work on the effects of lattice spacing changes
- H Lee Sweeney, for his work with molecular motors

The authors may be reached by email at:

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Sincerely,

C David Williams