



## Andrew James Howard

Ph.D. Student in Applied Physics, admitted Autumn 2019

### Bio

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#### BIO

Andrew J. Howard received his B.S. in Optics from the University of Rochester in 2019. During his time at Rochester, he served as a Research Assistant in the ultrafast group at the Laboratory for Laser Energetics. He was awarded the Charles L. Newton Prize for his work. In late 2019, Howard enrolled in the Applied Physics Ph.D. program at Stanford University and was named the Albion Walter Hewlett Fellow. Here he studies experimental strong-field physics and ultrafast laser-driven molecular dynamics. He currently specializes in 3D fragment-momentum imaging, in which the three-dimensional momentum of molecular fragments produced during the interaction between a laser and a molecule yields valuable information about femtosecond molecular processes and light-matter interactions.

#### HONORS AND AWARDS

- Albion Walter Hewlett Fellowship, Stanford University (2019)
- Charles L. Newton Prize, University of Rochester (2019)
- Robert L. Wells Prize, University of Rochester (2019)

#### EDUCATION AND CERTIFICATIONS

- B.S., The Institute of Optics, University of Rochester , Optics (2019)
- Minor, University of Rochester , Italian (2019)

### Publications

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#### PUBLICATIONS

- **Strong-field ionization of water: Nuclear dynamics revealed by varying the pulse duration** *PHYSICAL REVIEW A*  
Howard, A. J., Cheng, C., Forbes, R., McCracken, G. A., Mills, W. H., Makhija, Spanner, M., Weinacht, T., Bucksbaum, P. H.  
2021; 103 (4)
- **Photon Acceleration in a Flying Focus** *PHYSICAL REVIEW LETTERS*  
Howard, A. J., Turnbull, D., Davies, A. S., Franke, P., Froula, D. H., Palastro, J. P.  
2019; 123 (12): 124801
- **Implementation of a Wollaston interferometry diagnostic on OMEGA EP**  
Howard, A., Haberberger, D., Boni, R., Brown, R., Froula, D. H.  
AMER INST PHYSICS.2018: 10B107
- **Time-resolved site-selective imaging of predissociation and charge transfer dynamics: the CH3I B-band** *JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS*  
Forbes, R., Allum, F., Bari, S., Boll, R., Borne, K., Brouard, M., Bucksbaum, P. H., Ekanayake, N., Erk, B., Howard, A. J., Johnsson, P., Lee, J. L., Manschwetus, et al  
2020; 53 (22)

- **Momentum-resolved above-threshold ionization of deuterated water** *PHYSICAL REVIEW A*

Cheng, C., Forbes, R., Howard, A. J., Spanner, M., Bucksbaum, P. H., Weinacht, T.  
2020; 102 (5)

- **Flying focus: Spatial and temporal control of intensity for laser-based applications** *PHYSICS OF PLASMAS*

Froula, D. H., Palastro, J. P., Turnbull, D., Davies, A., Nguyen, L., Howard, A., Ramsey, D., Franke, P., Bahk, S., Begishev, I. A., Boni, R., Bromage, J., Bucht, et al  
2019; 26 (3)