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Career Activities & Highlights

- Atomic, molecular, and optical physics using synchrotron radiation, optical lasers, and free-electron lasers
- Instrumentation and techniques for electron, ion, and photon spectroscopies, synchrotron radiation and lasers
- Angle-resolved photoelectron spectroscopy, high-resolution X-ray fluorescence spectroscopy, X-ray/ion and X-ray/electron coincidence spectroscopy
- Inner-shell resonance and threshold physics
- Pump-probe experiments on atoms and molecules in strong optical and X-ray laser fields

Publications

R. Santra, R. W. Dunford, E. P. Kanter, B. Krässig, S. H. Southworth, and L. Young, "Strong-Field Control of X-Ray Processes," *Advances in Atomic, Molecular, and Optical Physics*, (2008).

E. P. Kanter, R. Santra, C. Höhr, E. R. Peterson, J. Rudati, D. A. Arms, E. M. Dufresne, R. W. Dunford, D. L. Ederer, B. Krässig, E. C. Landahl, S. H. Southworth, and L. Young, "Characterization of the Spatiotemporal Evolution of Laser-Generated Plasmas," *Journal of Applied Physics*, 104, 073307 (2008).

E. R. Peterson, C. Buth, D. A. Arms, R. W. Dunford, E. P. Kanter, B. Krässig, E. C. Landahl, S. T. Pratt, R. Santra, S. H. Southworth, and L. Young, "An X-Ray Probe of Laser-Aligned Molecules," *Applied Physics Letters*, 92, 094106 (2008).

S. H. Southworth, D. A. Arms, E. M. Dufresne, R. W. Dunford, D. L. Ederer, C. Höhr, E. P. Kanter, B. Krässig, E. C. Landahl, E. R. Peterson, J. Rudati, R. Santra, D. A. Walko, and L. Young, "K-Edge X-Ray Absorption Spectroscopy of Laser-Generated Kr⁺ and Kr²⁺," *Physical Review A*, 76, 043421 (2007).

L. Young, D. A. Arms, E. M. Dufresne, R. W. Dunford, D. L. Ederer, C. Höhr, E. P. Kanter, B. Krässig, E. C. Landahl, E. R. Peterson, J. Rudati, R. Santra, and S. H. Southworth, "X-Ray Microprobe of Orbital Alignment in Strong-Field Ionized Atoms," *Physical Review Letters*, 97, 083601 (2006).

R. W. Dunford, E. P. Kanter, B. Krässig, S. H. Southworth, and L. Young,
“Higher-Order Processes in X-Ray Photoionization and Decay,” *Radiation Physics and Chemistry*, 70, 149 (2004).