Stanford



Philip Bucksbaum

Marguerite Blake Wilbur Professor of Natural Science and Professor of Photon Science, of Applied Physics and of Physics

Photon Science Directorate

Curriculum Vitae available Online

CONTACT INFORMATION

- **Administrative Contact**

  Zhenhua Wang

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Bio

BIO

Phil Bucksbaum holds the Marguerite Blake Wilbur Chair in Natural Science at Stanford University, with appointments in Physics, Applied Physics, and in Photon Science at SLAC. He conducts his research in the Stanford PULSE Institute (https://web.stanford.edu/~phbuck). He and his wife Roberta Morris live in Menlo Park, California. Their grown daughter lives in Toronto.

Bucksbaum was born and raised in Iowa, and graduated from Harvard in 1975. He attended U.C. Berkeley on a National Science Foundation Graduate Fellowship and received his Ph.D. in 1980 for atomic parity violation experiments under Professor Eugene Commins, with whom he also has co-authored a textbook, “Weak Interactions of Leptons and Quarks.” In 1981 he joined Bell Laboratories, where he pursued new applications of ultrafast coherent radiation from terahertz to vacuum ultraviolet, including time-resolved VUV ARPES, and strong-field laser-atom physics.

He joined the University of Michigan in 1990 and stayed for sixteen years, becoming Otto Laporte Collegiate Professor and then Peter Franken University Professor. He was founding Director of FOCUS, a National Science Foundation Physics Frontier Center, where he pioneered research using ultrafast lasers to control quantum systems. He also launched the first experiments in ultrafast x-ray science at the Advanced Photon Source at Argonne National Lab. In 2006 Bucksbaum moved to Stanford and SLAC, and organized the PULSE Institute to develop research utilizing the world’s first hard x-ray free-electron laser, LCLS. In addition to directing PULSE, he has previously served as Department Chair of Photon Science and Division Director for Chemical Science at SLAC. His current research is in laser interrogation of atoms and molecules to explore and image structure and dynamics on the femtosecond scale. He currently has more than 250 publications.

Bucksbaum is a Fellow of the APS and the Optical Society, and has been elected to the National Academy of Sciences and the American Academy of Arts and Sciences. He has held Guggenheim and Miller Fellowships, and received the Norman F. Ramsey Prize of the American Physical Society for his work in ultrafast and strong-field atomic and molecular physics. He served as the Optical Society President in 2014, and also served as the President of the American Physical Society in 2020. He has led or participated in many professional service activities, including NAS studies, national and international boards, initiatives, lectureships and editorships.

ACADEMIC APPOINTMENTS

- Professor, Photon Science Directorate
- Professor, Physics
- Professor, Applied Physics
- Member, Bio-X
- Principal Investigator, Stanford PULSE Institute

ADMINISTRATIVE APPOINTMENTS

- Chair, Department of Photon Science, SLAC, Stanford University, (2023-2026)
- President, American Physical Society, (2020-2020)
- President, The Optical Society, (2014-2014)
- Visiting Professor of Physics, Weizmann Institute of Science, (2013-2013)
- Marguerite Blake Wilbur Professor in Natural Science, Stanford University, (2009- present)
- Chair, Department of Photon Science, SLAC, Stanford University, (2007-2010)
- Director of the Stanford PULSE Institute, Stanford University and SLAC, (2006- present)
- Professor of Physics, Applied Physics, and the Stanford Synchrotron Radiation Laboratory, Stanford University, (2006- present)
- Peter Frankin Distinguished University Professor, University of Michigan, (2005-2006)
- Visiting Scholar, Department of Applied Physics and SSRL, Stanford University, (2004-2005)
- Director of FOCUS, The Center for Frontier Optical Coherent Ultrafast Science, (2001-2005)
- Otto Laporte Collegiate Professor, College of Literature, Science, and the Arts, University of Michigan, (1998-2005)
- Visiting Research Investigator, Service des Photons, Atomes et Molecules, Centre d'Etudes de Saclay, Commissariat a l'Energie Atomique, (1997-1997)
- Miller Visiting Professor of Physics and Electrical Engineering, University of California, Berkeley, (1996-1996)
- Professor of Physics, University of Michigan, (1990-1998)
- Adjunct Associate Professor of Applied Physics, Columbia University, (1989-1990)
- Principal Investigator Member of Technical Staff, Physics Research Division, AT&T Bell Laboratories, (1982-1990)
- Post-doctoral research, AT&T Bell Laboratories, (1981-1982)
- Post-doctoral research, Lawrence Berkeley Laboratories, (1980-1981)

HONORS AND AWARDS

- Norman F. Ramsey Prize, American Physical Society (2020)
- Member, National Academy of Sciences (2004)
- Fellow, American Academy of Arts and Sciences (2012)
- Fellow, American Physical Society (1990)
- Fellow, Optical Society (1995)
- Marguerite Blake Wilbur Professor in Natural Science, Stanford University (2009)
- Peter Franken University Professor, University of Michigan (2005)
- Otto Laporte Professor Collegiate of Physics, University of Michigan (1998)
- Distinguished Faculty Research Award, Univeristy of Michigan (1996)
- Extraordinary Contribution Award, AT&T Bell Laboratories (1987, 1988, 1989)
- Post-doctoral Fellowship, NATO (1981)

- Graduate Fellowship, NSF (1975 - 1978)
- Distinguished Traveling Lecturer, Division of Laser Science, American Physical Society (1996 - 1999)
- APS Centennial Speaker, APS (1998 - 1999)
- Centennial Speaker, American Physical Society (1998 - 1999)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Vice President (2018); President-Elect (2019); President (2020); Past President (2021), American Physical Society (2018 - present)
- Board Member, Vice-President (2012), President-Elect (2013), President (2014), Past President (2015), Optical Society (2012 - 2015)
- Chair, National Academy of Sciences Physics Section (2016 - 2019)
- Chair, Board on Physics and Astronomy of the National Research Council (2011 - 2013)
- Chair, AMO 2010, the National Academy of Sciences decadal study of AMO physics (2005 - 2006)
- Chair, "Reaching for the Brightest Light," National Academy consensus study on high intensity laser science and opportunities (2015 - 2017)
- Chair, NSF Committee of Visitors Subcommittee on AMO Physics and Quantum Information Science, for the Math and Physical Sciences Directorate (2011 - 2012)
- Chair, Science Advisory Subcommittee for the APS Upgrade in Ultrafast Science (2011 - 2012)
- Member, Weizmann Institute of Sciences International Board of Directors (2012 - present)
- Member, Steering Committee, National Photonics Initiative (2013 - present)
- Member, Math and Physical Sciences Advisory Committee for the National Science Foundation (2013 - 2019)
- Member, Committee of Visitors for NSF Physics Division, Mathematics and Physical Sciences Directorate (2019 - 2019)
- Member, Physical Review Letters Advisory Board (2012 - 2016)
- Member, Advanced Light Source Crosscut Review on AMO Physics (2013)
- Member, LBNL Molecular Foundry Science Advisory Committee (2012)
- Member, Max Planck Institute for Quantum Optics Science Advisory Committee (2012)
- Physics Class Representative, Class Membership Committee of the National Academy of Sciences (2012)
- Member, QANU International Evaluation Committee for Physics in The Netherlands (2011)
- Director, Division of Chemical Sciences, Photon Science Directorate, SLAC (2011 - 2011)
- Member, Science Advisory Committee for the Advanced Photon Source at Argonne (2010)
- Member, National Research Council Committee for Physics at NIST (2010 - 2012)
- Chair, Stanford University Applied Physics Graduate Admissions Committee (2010 - 2011)
- Chair, Stanford University Physics and Applied Physics Graduate Orientation and Open House Committees (2010 - 2011)
- Member, Stanford University Physics Graduate Curriculum Committee (2010 - 2011)
- Member, Stanford University Physics Graduate Admissions Committee (2010 - 2011)
- Member, Stanford University Physics AMO Search Committee (2010 - 2011)
- Member, Harvard Physics Visiting Committee (2009)
- Member, Stanford University Applied Physics Joint Appointments Committee (2008 - 2009)
- Member, Advisory Board of the Materials Research Laboratory, University of Illinois at Urbana-Champaign (2007 - 2010)
- Chair, 2007 Quantum Control Gordon Research Conference (2007)
- Member, UCSB iQCD External Review Committee (2007)
- Chair SLAC Faculty Task Force, Department of Photon Science, SLAC, Stanford University (2007 - 2010)
- Member, Stanford University Applied Physics Graduate Admissions Committee (2007 - 2010)

- Member, Stanford University Physics Graduate Admissions Committee (2007 - 2010)
- Member, Stanford University Physics AMO Search Committee (2007 - 2009)
- Strategic Planning Committee, SLAC Associate Laboratory Director for LCLS (2007 - 2008)
- Member, Stanford University Applied Physics Photonics Seminar Committee (2007 - 2007)
- Member, Board on Physics and Astronomy of the National Research Council (2006 - 2012)
- Member, Stanford University Materials Science/SSRL Faculty Search Committee (2006)
- Member, Advisory Board of the NSF ERC for Extreme Ultraviolet Science (2006 - 2012)
- Member, Board on Physics and Astronomy of the National Research Council (2006 - 2010)
- Member, Advisory Committee of Physics Today (2006 - 2009)
- Member, Science Advisory Committee for the Advanced Light Source at Berkeley (2006 - 2009)
- Member, Stanford University SSRL Condensed Matter Theory Search Committee (2006 - 2007)
- Member, Stanford University Physics AMO Search Committee (2006 - 2007)
- Member, Stanford University Applied Physics special faculty appointment committee (2006 - 2007)
- Space Working Group, SLAC (2006 - 2007)
- Member, BESAC (The Basic Energy Sciences Advisory Committee to the Office of Science, Department of Energy (2005)
- Member, University of Michigan faculty search committee (2005)
- Member, BESAC Grand Challenges Committee (2005 - 2007)
- Member, DOE-Basic Energy Sciences committee to review the 25-year plan for major facilities (2004)
- Members, University of Michigan (2005) Membership in the N (2004)
- Member, Harvard ITAMP External Advisory Board (2004 - 2007)
- Chair, American Physical Society nominating committee (2004 - 2004)
- Member, NAS Committee on AMO Science (CAMOS) (2003 - 2005)
- Editor, Virtual Journal of Ultrafast Science (2002 - 2012)
- Divisional Associate Editor, Physical Review Letters (2002 - 2009)
- Divisional Associate Editor, Physical Review Letters (2002 - 2008)
- Member, SAUUL advisory group (2002 - 2004)
- Member, University of Michigan AMO Faculty search committee (2002 - 2003)
- Member, BESAC (The Basic Energy Sciences Advisory Committee to the Office of Science, Department of Energy (2001 - 2005)
- Member, University of Michigan Departmental Internal Review Committee (2001 - 2005)
- Executive Board Member, American Physical Society (2001 - 2002)
- General Co-Chair, Quantum Electronics and Laser Science Meeting (1999)
- Member, Leone Panel, to review 4th generation synchrotron facilities (1999)
- Member, Science Advisory Committee for the SLAC Linac Coherent Light Source (LCLS) (1999 - 2009)
- Member, National Academy Committee to update the FAMOS report: Future of Atomic, Molecular, and Optical Science (1999 - 2001)
- Chairman, University of Michigan AMO Faculty search committee (1999 - 2000)
- Co-author, Science Case for X-ray Free Electron Lasers, commissioned by Basic Energy Sciences, Department of Energy (1999 - 2000)
- Member, Program Committees for the APS Annual Meeting Division of Atomic, Molecular and Optical Physics (1999 - 2000)
- Member, University of Michigan Graduate Concerns Committee (1999 - 2000)
- Member, University of Michigan Graduate Admissions Committee (1998 - 2005)

- General Coucilor at Large, American Physical Society (1998 - 2002)
- Member, University of Michigan Long Range Plan Committee (1998 - 2000)
- Member, University of Michigan faculty search committee for Physical Chemistry (1998 - 2000)
- Chairman, Rackham Divisional Board (1998 - 1999)
- Chairman, DoE-BES Report on Future Directions of High Field Interactions Atoms and Molecules with Photons (1997)
- Co-Chairman, US-Japan Seminar on Coherent Manipulation of Matter (1997)
- Program Co-Chairman, Quantum Electronics and Laser Spectroscopy Meeting (1997)
- Member, Program Committee for the International Conference on Multiphoton Processes, Garmisch-Partenkirchen, Germany (1996)
- Member, Special NSF Review Panel for Stanford/LIGO project (1996)
- Miller Visiting Professor of Physics and Electrical Engineering, University of California, Berkeley, CA 94720 (1996)
- Participant, National Research Council Workshop on Research and Education in Optical Science and Engineering, Irvine (1996)
- Session Organizer and Local Committee Member, APS Division of Atomic, Molecular, and Optical Physics (1996)
- Member, Technical Advisory Committee for the Laser Program, LLNL (1996 - 2000)
- Fellow, John Simon Guggenheim Memorial Foundation (1996 - 1997)
- Member, University of Michigan Awards and Prizes Committee (1996 - 1997)
- Chair, NSF Special Emphasis Panel on Manipulating Matter with Light, Cambridge, MA, (1995)
- Member, Fellowship Committee for the Laser Science Topical Group of the APS (1995)
- Member, University of Michigan Computing Committee (1995)
- Rosenberg Lecturer in Physics, Yale University (1995)
- Chair, University of Michigan Physics/Chemistry faculty appointment committee (1995 - 1996)
- Acting Director, University of Michigan Center for Ultrafast Optical Science (1994)
- Member, Program Committee for the International Conference on Atomic Physics (1994)
- Member, Program Committee for the OSA Topical Meeting on High Field Interactions and Short Wavelength Generation, St. Malo (1994)
- Member, Program Committee for the OSA Topical Meeting on Ultrafast Processes, California (1994)
- Participant, National Academy Panel on Future Free Electron Lasers, Washington (1994)
- Member, University of Michigan Physics Department Executive Committee (1994 - 1996)
- Member, Fellows Committee for the APS Topical Group on Precision Measurements (1993)
- Program Committee, Optical Society Topical Meeting on Short Wavelength Coherent Radiation: Generation and Applications; San Diego, CA (1993)
- Director, Fellows Program at the NSF Center for Ultrafast Optical Science (1993 - 2000)
- Member, faculty promotions and appointments committee of LS&A (1993 - 1996)
- Member, Program Committee for the Annual Meeting of the Optical Society (1993 - 1995)
- Member, Executive Committe of the Division of Atomic, Molecular, and Optical Physics of the APS (1993 - 1995)
- Member, selection committee for the APS Award for Outstanding Doctoral Thesis Research in AMO Physics (1993 - 1994)
- Member, National Research Council selection panel for NRC Postdoctoral Fellowships (1993 - 1994)
- Member, AIP expert panel on new publishing directions (1992)
- Member, selection committee for the Rackham Research Partnership Fellowship Awards (1992)
- Member, International Physics Advisory Panel, IUPAP (1992)
- Member, Program Committee for the International Laser Spectroscopy Conference (1992 - 1995)
- Chair, Optical Science Division (1992 - 1994)

- Member, Technical Executive Council of the Optical Society of America (1992 - 1994)
- Co-editor, University of Michigan Rich Memorial Symposium Proceedings (1992 - 1992)
- Member, University of Michigan Administrative Services Review Committee (1992 - 1992)
- Member, University of Michigan Building Committee (1992 - 1992)
- Member, University of Michigan Rich Memorial Symposium Organizing Committee (1992 - 1992)
- Program Chairman, Laser Spectroscopy Subcommittee, Conference on Quantum Electronics and Laser Spectroscopy (QELS'91), Baltimore, Maryland (1991)
- Associate Director for Science, University of Michigan Center for Ultrafast Optical Science (1991 - 2000)
- Chair, University of Michigan Target of Opportunity Committee (1991 - 1995)
- Chairman, University of Michigan Atomic, Molecular, and Optical Physics Recruitment and Advisory Committee (1991 - 1995)
- Member, Program Committee and Session Organizer of the APS annual meeting for AMO Physics (1991 - 1995)
- Member, Laser Spectroscopy Subcommittee, International Quantum Electronics Conference (IQEC'90), Los Angeles, CA (1990)
- Colloquium committee member, University of Michigan Atomic, Molecular, and Optical Physics Recruitment and Advisory Committee (1990 - 1991)
- Membership, Advisory Committee for Research at AT&T Bell Laboratories (1989 - 1990)

PROFESSIONAL EDUCATION

- Ph.D, University of California, Berkeley , Physics (1980)
- M.A., University of California, Berkeley , Physics (1978)
- A.B Magna cum Laude, Harvard University , Physics (1975)

LINKS

- My research pages: https://web.stanford.edu/~phbuck
- Attosecond Physics: https://ultrafast.stanford.edu/research/attosecond-phenomenon
- Strong-Field Physics: https://ultrafast.stanford.edu/Research/strong-field-physics
- Making Molecular Movies: https://ultrafast.stanford.edu/npi-non-periodic-ultrafast-x-ray-imaging

Teaching

COURSES

2026-27

- Lasers, Lasers, Nothing but Lasers: APPPHYS 11N, PHYSICS 11N (Win)
- Ultrafast Quantum Physics: APPPHYS 283 (Aut)

2025-26

- Lasers, Lasers, Nothing but Lasers: APPPHYS 11N, PHYSICS 11N (Win)
- Ultrafast Quantum Physics: APPPHYS 283 (Aut)

2024-25

- Lasers, Lasers, Nothing but Lasers: PHYSICS 11N (Aut)
- Ultrafast Quantum Physics: APPPHYS 283, PHOTON 283 (Win)

2023-24

- Ultrafast Quantum Physics: APPPHYS 283, PHOTON 283 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Simai Jia, Willow Martin, Tatiana Smorodnikova, John Walters

Postdoctoral Faculty Sponsor

Ishita Kemeny

Doctoral Dissertation Advisor (AC)

Aaron Ghrist, Haoran Ma, Emily Thierstein, Eleanor Weckwerth

Doctoral Dissertation Co-Advisor (AC)

Javin Ohara

Doctoral (Program)

Devin Dean, Sara Irvine, Supavit Pokawanvit, Yueheng Shi, Michael Wahrman

Publications

PUBLICATIONS

- **Time-resolved momentum imaging of UV photodynamics in structural isomers of iodopropane probed by site-selective XUV ionization.** *Physical chemistry chemical physics : PCCP*
  Allum, F., Kumagai, Y., Nagaya, K., Harries, J. R., Iwayama, H., Britton, M., Bucksbaum, P. H., Burt, M., Brouard, M., Downes-Ward, B., Driver, T., Heathcote, D., Hockett, et al
  2025

- **Imaging Valence Electron Rearrangement in a Chemical Reaction Using Hard X-Ray Scattering.** *Physical review letters*
  Gabalski, I., Green, A., Lenzen, P., Allum, F., Bain, M., Bhattacharyya, S., Britton, M. A., Champenois, E. G., Cheng, X., Cryan, J. P., Driver, T., Forbes, R., Garratt, et al
  2025; 135 (8): 083001

- **Imaging Valence Electron Rearrangement in a Chemical Reaction Using Hard X-Ray Scattering** *PHYSICAL REVIEW LETTERS*
  Gabalski, I., Green, A., Lenzen, P., Allum, F., Bain, M., Bhattacharyya, S., Britton, M. A., Champenois, E. G., Cheng, X., Cryan, J. P., Driver, T., Forbes, R., Garratt, et al
  2025; 135 (8)

- **Orientation-dependent enhanced ionization in acetylene revealed by ultrafast cross-polarized pulse pairs** *PHYSICAL REVIEW A*
  Mohideen, S. A., Howard, A. J., Cheng, C., Gabalski, I., Ghrist, A. M., Weckwerth, E., Bucksbaum, P. H.
  2025; 112 (1)

- **Real-space observation of the dissociation of a transition metal complex and its concurrent energy redistribution.** *Nature communications*
  Schori, A., Biasin, E., Banerjee, A., Boutet, S., Bucksbaum, P. H., Carbajo, S., Gaffney, K. J., Glownia, J. M., Hartsock, R., Ledbetter, K., Kaldun, A., Koglin, J. E., Kunnus, et al
  2025; 16 (1): 4767

- **Probing Electronic Coherence between Core-Level Vacancies at Different Atomic Sites** *PHYSICAL REVIEW X*
  Wang, J., Driver, T.
  2025; 15: 011008

- **Photon science and quantum control** *PHYSICS TODAY*
  Bucksbaum, P. H.
  2025; 78 (1): 54-57

- **Distinguishing the XUV-induced Coulomb explosion dynamics of iodobenzene using covariance analysis** *JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS*
  Walmsley, T., Allum, F., Harries, J. R., Kumagai, Y., Lim, S., McManus, J., Nagaya, K., Britton, M., Brouard, M., Bucksbaum, P., Fushitani, M., Gabalski, I., Gejo, et al

2024; 57 (23)

- **Relativistic effects in molecular photoemission delays** *PHYSICAL REVIEW A*
  Grafstrom, B., Wang-Holtzen, A., Wang, J., Bucksbaum, P. H., Cryan, J. P., Landsman, A. S.
  2024; 110 (6)
- **Design and performance of a magnetic bottle electron spectrometer for high-energy photoelectron spectroscopy.** *The Review of scientific instruments*
  Borne, K., O'Neal, J. T., Wang, J., Isele, E., Obaid, R., Berrah, N., Cheng, X., Bucksbaum, P. H., James, J., Kamalov, A., Larsen, K. A., Li, X., Lin, et al
  2024; 95 (12)
- **Time-Resolved Probing of the Iodobenzene C-Band Using XUV-Induced Electron Transfer Dynamics.** *ACS physical chemistry Au*
  Unwin, J., Razmus, W. O., Allum, F., Harries, J. R., Kumagai, Y., Nagaya, K., Britton, M., Brouard, M., Bucksbaum, P., Fushitani, M., Gabalski, I., Gejo, T., Hockett, et al
  2024; 4 (6): 620-631
- **Attosecond impulsive stimulated X-ray Raman scattering in liquid water.** *Science advances*
  Alexander, O., Egun, F., Rego, L., Gutierrez, A. M., Garratt, D., Cardenes, G. A., Nogueira, J. J., Lee, J. P., Zhao, K., Wang, R. P., Ayuso, D., Barnard, J. C., Beauvarlet, et al
  2024; 10 (39): eadp0841
- **Time-Resolved Probing of the Iodobenzene C-Band Using XUV-Induced Electron Transfer Dynamics** *ACS PHYSICAL CHEMISTRY AU*
  Unwin, J., Razmus, W. O., Allum, F., Harries, J. R., Kumagai, Y., Nagaya, K., Britton, M., Brouard, M., Bucksbaum, P., Fushitani, M., Gabalski, I., Gejo, T., Hockett, et al
  2024
- **Attosecond delays in X-ray molecular ionization.** *Nature*
  Driver, T., Mountney, M., Wang, J., Ortmann, L., Al-Haddad, A., Berrah, N., Bostedt, C., Champenois, E. G., DiMauro, L. F., Duris, J., Garratt, D., Glownia, J. M., Guo, et al
  2024; 632 (8026): 762-767
- **Exploring the ultrafast and isomer-dependent photodissociation of iodothiophenes via site-selective ionization.** *Physical chemistry chemical physics : PCCP*
  Razmus, W. O., Allum, F., Harries, J., Kumagai, Y., Nagaya, K., Bhattacharyya, S., Britton, M., Brouard, M., Bucksbaum, P. H., Cheung, K., Crane, S. W., Fushitani, M., Gabalski, et al
  2024
- **Experimental demonstration of attosecond pump-probe spectroscopy with an X-ray free-electron laser** *NATURE PHOTONICS*
  Guo, Z., Driver, T., Beauvarlet, S., Cesar, D., Duris, J., Franz, P. L., Alexander, O., Bohler, D., Bostedt, C., Averbukh, V., Cheng, X., Dimauro, L. F., Doumy, et al
  2024
- **Multiparticle cumulant mapping for Coulomb explosion imaging: Calculations and algorithm** *PHYSICAL REVIEW A*
  Cheng, C., Frasinski, L. J., Allum, F., Howard, A. J., Bucksbaum, P. H., Forbes, R., Weinacht, T.
  2024; 109 (4)
- **Applying Bayesian inference and deterministic anisotropy to retrieve the molecular structure ÷Ψ(<bold>R</bold>)÷² distribution from gas-phase diffraction experiments** *COMMUNICATIONS PHYSICS*
  Hegazy, K., Makhija, V., Bucksbaum, P., Corbett, J., Cryan, J., Hartmann, N., Ilchen, M., Jobe, K., Li, R., Makasyuk, I., Shen, X., Wang, X., Weathersby, et al
  2023; 6 (1)
- **X-ray induced Coulomb explosion imaging of transient excited-state structural rearrangements in CS₂** *COMMUNICATIONS PHYSICS*
  Unwin, J., Allum, F., Britton, M., Gabalski, I., Bromberger, H., Brouard, M., Bucksbaum, P. H., Driver, T., Ekanayake, N., Garg, D., Gougoula, E., Heathcote, D., Howard, et al
  2023; 6 (1)
- **Femtosecond Electronic and Hydrogen Structural Dynamics in Ammonia Imaged with Ultrafast Electron Diffraction.** *Physical review letters*
  Champenois, E. G., List, N. H., Ware, M., Britton, M., Bucksbaum, P. H., Cheng, X., Centurion, M., Cryan, J. P., Forbes, R., Gabalski, I., Hegazy, K., Hoffmann, M. C., Howard, et al

2023; 131 (14): 143001

- **Time-Resolved X-ray Photoelectron Spectroscopy: Ultrafast Dynamics in CS2 Probed at the S 2p Edge.** *The journal of physical chemistry letters*
  Gabalski, I., Allum, F., Seidu, I., Britton, M., Brenner, G., Bromberger, H., Brouard, M., Bucksbaum, P. H., Burt, M., Cryan, J. P., Driver, T., Ekanayake, N., Erk, et al
  2023: 7126-7133

- **Femtosecond pulse parameter estimation from photoelectron momenta using machine learning** *NEW JOURNAL OF PHYSICS*
  Szoldra, T., Ciappina, M. F., Werby, N., Bucksbaum, P. H., Lewenstein, M., Zakrzewski, J., Maxwell, A. S.
  2023; 25 (8)

- **Filming enhanced ionization in an ultrafast triatomic slingshot.** *Communications chemistry*
  Howard, A. J., Britton, M., Streeter, Z. L., Cheng, C., Forbes, R., Reynolds, J. L., Allum, F., McCracken, G. A., Gabalski, I., Lucchese, R. R., McCurdy, C. W., Weinacht, T., Bucksbaum, et al
  2023; 6 (1): 81

- **Multiparticle Cumulant Mapping for Coulomb Explosion Imaging.** *Physical review letters*
  Cheng, C., Frasinski, L. J., Moğol, G., Allum, F., Howard, A. J., Rolles, D., Bucksbaum, P. H., Brouard, M., Forbes, R., Weinacht, T.
  2023; 130 (9): 093001

- **Photon energy-resolved velocity map imaging from spectral domain ghost imaging** *NEW JOURNAL OF PHYSICS*
  Wang, J., Driver, T., Allum, F., Papadopoulou, C. C., Passow, C., Brenner, G., Li, S., Duesterer, S., Tul Noor, A., Kumar, S., Bucksbaum, P. H., Erk, B., Forbes, et al
  2023; 25 (3)

- **Transient vibration and product formation of photoexcited CS2 measured by time-resolved x-ray scattering.** *The Journal of chemical physics*
  Gabalski, I., Sere, M., Acheson, K., Allum, F., Boutet, S., Dixit, G., Forbes, R., Glownia, J. M., Goff, N., Hegazy, K., Howard, A. J., Liang, M., Minitti, et al
  2022; 157 (16): 164305

- **Probing two-path electron quantum interference in strong-field ionization with time-correlation filtering** *PHYSICAL REVIEW A*
  Werby, N., Maxwell, A. S., Forbes, R., Faria, C., Bucksbaum, P. H.
  2022; 106 (3)

- **Disentangling sequential and concerted fragmentations of molecular polycations with covariant native frame analysis.** *Physical chemistry chemical physics : PCCP*
  McManus, J. W., Walmsley, T., Nagaya, K., Harries, J. R., Kumagai, Y., Iwayama, H., Ashfold, M. N., Britton, M., Bucksbaum, P. H., Downes-Ward, B., Driver, T., Heathcote, D., Hockett, et al
  2022

- **Multichannel photodissociation dynamics in CS2 studied by ultrafast electron diffraction.** *Physical chemistry chemical physics : PCCP*
  Razmus, W. O., Acheson, K., Bucksbaum, P., Centurion, M., Champenois, E., Gabalski, I., Hoffman, M. C., Howard, A., Lin, M., Liu, Y., Nunes, P., Saha, S., Shen, et al
  2022

- **Attosecond coherent electron motion in Auger-Meitner decay.** *Science (New York, N.Y.)*
  Li, S., Driver, T., Rosenberger, P., Champenois, E. G., Duris, J., Al-Haddad, A., Averbukh, V., Barnard, J. C., Berrah, N., Bostedt, C., Bucksbaum, P. H., Coffee, R. N., DiMauro, et al
  1800: eabj2096

- **Role of nuclear-electronic coupling in attosecond photoionization of H-2** *PHYSICAL REVIEW A*
  Wang, A. L., Serov, V. V., Kamalov, A., Bucksbaum, P. H., Kheifets, A., Cryan, J. P.
  2021; 104 (6)

- **Multi-Particle Three-Dimensional Covariance Imaging: "Coincidence" Insights into the Many-Body Fragmentation of Strong-Field Ionized D2O.** *The journal of physical chemistry letters*
  Allum, F., Cheng, C., Howard, A. J., Bucksbaum, P. H., Brouard, M., Weinacht, T., Forbes, R.
  2021: 8302-8308

- **Strong-field ionization of water. II. Electronic and nuclear dynamics en route to double ionization** *PHYSICAL REVIEW A*
  Cheng, C., Streeter, Z. L., Howard, A. J., Spanner, M., Lucchese, R. R., McCurdy, C., Weinacht, T., Bucksbaum, P. H., Forbes, R.

2021; 104 (2)

- **Dissecting subcycle interference in photoelectron holography** *PHYSICAL REVIEW A*
  Werby, N., Maxwell, A. S., Forbes, R., Bucksbaum, P. H., Faria, C.
  2021; 104 (1)
- **Disentangling the subcycle electron momentum spectrum in strong-field ionization** *PHYSICAL REVIEW RESEARCH*
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