Publications and Conference Presentations

Publications

Y. Akbas, A. Stern, L. Q. Zhang, Y. Alimi, A. M. Song, I. Iñiguez-de-la-Torre, J. Mateos, T. González, G. W. Wicks, and R. Sobolewski, "Ultrahigh Responsivity of Optically Active, Semiconducting Asymmetric Nano-Channel Diodes," J. Phys.: Conf. Ser. **647**, 012013 (2015).

M. Anthamatten, J. J. Ou, J. A. Weinfeld, and S. H. Chen, "Enthalpy Versus Entropy: What Drives Hard-Particle Ordering in Condensed Phases?" Chem. Phys. Lett. **660**, 18 (2016).

S.-W. Bahk, C. Dorrer, R. G. Roides, and J. Bromage, "Chromatic-Aberration Diagnostic Based on a Spectrally Resolved Lateral-Shearing Interferometer," Appl. Opt. **55**, 2413 (2016).

P. X. Belancourt, W. Theobald, P. A. Keiter, T. J. B. Collins, M. J. Bonino, P. M. Kozlowski, S. P. Regan, and R. P. Drake, "Demonstration of Imaging X-Ray Thomson Scattering on OMEGA EP," Rev. Sci. Instrum. **87**, 11E550 (2016).

R. Betti, A. R. Christopherson, A. Bose, and K. M. Woo, "Alpha Heating and Burning Plasmas in Inertial Confinement Fusion," J. Phys.: Conf. Ser. **717**, 012007 (2016).

R. Betti and O. A. Hurricane, "Inertial-Confinement Fusion with Lasers," Nat. Phys. **12**, 435 (2016).

A. Bose, K. M. Woo, R. Betti, E. M. Campbell, D. Mangino, A. R. Christopherson, R. L. McCrory, R. Nora, S. P. Regan, V. N. Goncharov, T. C. Sangster, C. J. Forrest, J. Frenje, M. Gatu Johnson, V. Yu. Glebov, J. P. Knauer, F. J. Marshall, C. Stoeckl, and W. Theobald, "Core Conditions for Alpha Heating Attained in Direct-Drive Inertial Confinement Fusion," Phys. Rev. E **94**, 011201(R) (2016).

B. P. Chock, T. B. Jones, and D. R. Harding, "Effect of a Surfactant on the Electric-Field Assembly of Oil-Water Emulsions for Making Foam Targets," Fusion Sci. Technol. **70**, 206 (2016).

T. J. B. Collins, J. A. Marozas, S. Skupsky, D. Cao, P. W. McKenty, J. A. Delettrez, and G. Moses, "Design Options for Polar-Direct-Drive Targets from Alpha Heating to Ignition," J. Phys.: Conf. Ser. **717**, 012012 (2016).

D. H. Crandall, "The Quest for Laboratory Inertial Fusion Burn in the United States," J. Phys.: Conf. Ser. **717**, 012001 (2016).

R. S. Craxton, K. S. Anderson, T. R. Boehly, V. N. Goncharov, D. R. Harding, J. P. Knauer, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, J. F. Myatt, A. J. Schmitt, J. D. Sethian, R. W. Short, S. Skupsky, W. Theobald, W. L. Kruer, K. Tanaka, R. Betti, T. J. B. Collins, J. A. Delettrez, S. X. Hu, J. A. Marozas, A. V. Maximov, D. T. Michel, P. B. Radha, S. P. Regan, T. C. Sangster, W. Seka, A. A. Solodov, J. M. Soures, C. Stoeckl, and J. D. Zuegel, "Direct-Drive Inertial Confinement Fusion: A Review," Phys. Plasmas **22**, 110501 (2015).

J. R. Davies, R. Betti, P.-Y. Chang, and G. Fiksel, "The Importance of Electrothermal Terms in Ohm's Law for Magnetized Spherical Implosions," Phys. Plasmas **22**, 112703 (2015).

A. K. Davis, D. Cao, D. T. Michel, M. Hohenberger, D. H. Edgell, R. Epstein, V. N. Goncharov, S. X. Hu, I. V. Igumenshchev, J. A. Marozas, A. V. Maximov, J. F. Myatt, P. B. Radha, S. P. Regan, T. C. Sangster, and D. H. Froula, "Isolating and Quantifying Cross-Beam Energy Transfer in Direct-Drive Implosions on OMEGA and the National Ignition Facility," Phys. Plasmas **23**, 056306 (2016) (invited).

A. K. Davis, D. T. Michel, R. S. Craxton, R. Epstein, M. Hohenberger, T. Mo, and D. H. Froula, "X-Ray Self-Emission Imaging Used to Diagnose 3-D Nonuniformities in Direct-Drive ICF Implosions," Rev. Sci. Instrum. **87**, 11E340 (2016).

W. R. Donaldson, J. Katz, R. Huff, E. M. Hill, J. H. Kelly, J. Kwiatkowski, R. B. Brannon, and R. Boni, "A Picosecond

Beam-Timing System for the OMEGA Laser," Rev. Sci. Instrum. **87**, 053511 (2016).

W. R. Donaldson, J. Katz, T. Z. Kosc, J. H. Kelly, E. M. Hill, and R. E. Bahr, "Enhancements to the Timing of the OMEGA Laser System to Improve Illumination Uniformity," Proc. SPIE **9966**, 996607 (2016).

C. Dorrer, A. Consentino, and D. Irwin, "Direct Optical Measurement of the On-Shot Incoherent Focal Spot and Intensity Contrast on the OMEGA EP Laser," Appl. Phys. B **122**, 156 (2016).

C. Dorrer, L. J. Waxer, A. Kalb, E. M. Hill, and J. Bromage, "Single-Shot High-Resolution Characterization of Optical Pulses by Spectral Phase Diversity," Opt. Express **23**, 33,116 (2015).

C. Dorrer, L. J. Waxer, A. Kalb, E. M. Hill, and J. Bromage, "Single-Shot, High-Resolution, Fiber-Based Phase-Diversity Photodetection of Optical Pulses," Proc. SPIE **9732**, 97320P (2016).

R. K. Follett, J. A. Delettrez, D. H. Edgell, V. N. Goncharov, R. J. Henchen, J. Katz, D. T. Michel, J. F. Myatt, J. Shaw, A. A. Solodov, C. Stoeckl, B. Yaakobi, and D. H. Froula, "Two-Plasmon Decay Mitigation in Direct-Drive Inertial-Confinement-Fusion Experiments Using Multilayer Targets," Phys. Rev. Lett. **116**, 155002 (2016).

R. K. Follett, J. A. Delettrez, D. H. Edgell, R. J. Henchen, J. Katz, J. F. Myatt, and D. H. Froula, "Plasma Characterization Using Ultraviolet Thomson Scattering from Ion-Acoustic and Electron Plasma Waves," Rev. Sci. Instrum. **87**, 11E401 (2016) (invited).

C. J. Forrest, V. Yu. Glebov, V. N. Goncharov, J. P. Knauer, P. B. Radha, S. P. Regan, M. H. Romanofsky, T. C. Sangster, M. J. Shoup III, and C. Stoeckl, "High-Dynamic-Range Neutron Time-of-Flight Detector Used to Infer the $D(t,n)^4He$ and $D(d,n)^3He$ Reaction Yield and Ion Temperature on OMEGA," Rev. Sci. Instrum. **87**, 11D814 (2016).

V. N. Goncharov, S. P. Regan, T. C. Sangster, R. Betti, T. R. Boehly, E. M. Campbell, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, S. X. Hu, I. V. Igumenshchev, F. J. Marshall, R. L. McCrory, D. T. Michel, J. F. Myatt, P. B. Radha, W. Seka, A. Shvydky, C. Stoeckl, W. Theobald, B. Yaakobi, and M. Gatu-Johnson, "Demonstrating Ignition Hydrodynamic Equivalence in Direct-Drive Cryogenic Implosions on OMEGA," J. Phys.: Conf. Ser. **717**, 012008 (2016).

D. R. Harding, D. C. Whitaker, and C. Fella, "Growth of a Solid DT Crystal from the Liquid Inside Inertial Confinement Fusion Targets," Fusion Sci. Technol. **70**, 173 (2016).

M. Hohenberger, A. Shvydky, J. A. Marozas, G. Fiksel, M. J. Bonino, D. Canning, T. J. B. Collins, C. Dorrer, T. J. Kessler, B. E. Kruschwitz, P. W. McKenty, D. D. Meyerhofer, S. P. Regan, T. C. Sangster, and J. D. Zuegel, "Optical Smoothing of Laser Imprinting in Planar-Target Experiments on OMEGA EP Using Multi-FM 1-D Smoothing by Spectral Dispersion," Phys. Plasmas **23**, 092702 (2016).

S. X. Hu, L. A. Collins, V. N. Goncharov, J. D. Kress, T. R. Boehly, R. Epstein, R. L. McCrory, and S. Skupsky, "First-Principles Studies on the Equation of State, Thermal Conductivity, and Opacity of Deuterium–Tritium (DT) and Polystyrene (CH) for Inertial Confinement Fusion Applications," J. Phys.: Conf. Ser. **717**, 012064 (2016).

S. X. Hu, L. A. Collins, V. N. Goncharov, J. D. Kress, R. L. McCrory, and S. Skupsky, "First-Principles Equation of State of Polystyrene and its Effect on Inertial Confinement Fusion Implosions," Phys. Rev. E **92**, 043104 (2015).

S. X. Hu, L. A. Collins, V. N. Goncharov, J. D. Kress, R. L. McCrory, and S. Skupsky, "First-Principles Investigations on Ionization and Thermal Conductivity of Polystyrene for Inertial Confinement Fusion Applications," Phys. Plasmas **23**, 042704 (2016).

S. X. Hu, B. Militzer, L. A. Collins, K. P. Driver, and J. D. Kress, "First-Principles Prediction of the Softening of the Silicon Shock Hugoniot Curve," Phys. Rev. B **94**, 094109 (2016).

I. V. Igumenshchev, V. N. Goncharov, F. J. Marshall, J. P. Knauer, E. M. Campbell, C. J. Forrest, D. H. Froula, V. Yu. Glebov, R. L. McCrory, S. P. Regan, T. C. Sangster, S. Skupsky, and C. Stoeckl, "Three-Dimensional Modeling of Direct-Drive Cryogenic Implosions on OMEGA," Phys. Plasmas **23**, 052702 (2016).

S. T. Ivancic, C. R. Stillman, D. Nelson, I. A. Begishev, C. Mileham, P. M. Nilson, and D. H. Froula, "Design of an Extreme Ultraviolet Spectrometer Suite to Characterize Rapidly Heated Solid Matter," Rev. Sci. Instrum. **87**, 11E538 (2016).

J. Katz, R. Boni, R. Rivlis, C. Muir, and D. H. Froula, "A Pulse-Front-Tilt–Compensated Streaked Optical Spectrometer with High Throughput and Picosecond Time Resolution," Rev. Sci. Instrum. **87**, 11E535 (2016).

Y. Kim, H. W. Herrmann, N. M. Hoffman, M. J. Schmitt, P. A. Bradley, S. Gales, C. J. Horsfield, M. Rubery, A. Leatherland, M. Gatu Johnson, J. A. Frenje, and V. Yu. Glebov, "Direct-Drive DT Implosions with Knudsen Number Variations," J. Phys.: Conf. Ser. **717**, 012030 (2016).

T. Z. Kosc, J. H. Kelly, E. M. Hill, and L. J. Waxer, "Design and Operation of the Multiple-Pulse Driver Line on the OMEGA Laser," J. Phys.: Conf. Ser. **717**, 012104 (2016).

J. A. Marozas, T. J. B. Collins, J. D. Zuegel, P. W. McKenty, D. Cao, S. Fochs, and P. B. Radha, "Continuous Distributed Phase-Plate Advances for High-Energy Laser Systems," J. Phys.: Conf. Ser. **717**, 012107 (2016).

F. J. Marshall, P. B. Radha, M. J. Bonino, J. A. Delettrez, R. Epstein, V. Yu. Glebov, D. R. Harding, C. Stoeckl, J. A. Frenje, M. Gatu Johnson, F. H. Séguin, H. Sio, A. Zylstra, and E. Giraldez, "Polar-Direct-Drive Experiments with Contoured-Shell Targets on OMEGA," Phys. Plasmas **23**, 012711 (2016).

K. L. Marshall, E. R. Sekera, and K. Xiao, "Computational Chemistry Modeling and Design of Photoswitchable Alignment Materials for Optically Addressable Liquid Crystal Devices," Proc. SPIE **9565**, 95650T (2015) (invited).

C. A. McCoy, M. C. Gregor, D. N. Polsin, D. E. Fratanduono, P. M. Celliers, T. R. Boehly, and D. D. Meyerhofer, "Shock-Wave Equation-of-State Measurements in Fused Silica Up to 1600 GPa," J. Appl. Phys. **119**, 215901 (2016).

J. F. Myatt, J. Shaw, V. N. Goncharov, J. Zhang, A. V. Maximov, R. W. Short, R. K. Follett, W. Seka, D. H. Edgell, and D. H. Froula, "Laser–Plasma Interaction in Direct-Drive Inertial Confinement Fusion," J. Phys.: Conf. Ser. **717**, 012040 (2016).

P. M. Nilson, F. Ehrne, C. Mileham, D. Mastrosimone, R. K. Jungquist, C. Taylor, C. R. Stillman, S. T. Ivancic, R. Boni, J. Hassett, D. J. Lonobile, R. W. Kidder, M. J. Shoup III, A. A. Solodov, C. Stoeckl, W. Theobald, D. H. Froula, K. W. Hill, L. Gao, M. Bitter, P. Efthimion, and D. D. Meyerhofer, "High-Resolving-Power X-Ray Spectrometer for the OMEGA EP Laser," Rev. Sci. Instrum. **87**, 11D504 (2016) (invited).

J. B. Oliver, C. Smith, J. Spaulding, A. L. Rigatti, B. Charles, S. Papernov, B. Taylor, J. Foster, C. W. Carr, R. Luthi, B. Hollingsworth, and D. Cross, "Glancing-Angle–Deposited Magnesium Oxide Films for High-Fluence Applications," Opt. Mater. Express **6**, 2291 (2016).

S. Papernov, A. A. Kozlov, J. B. Oliver, C. Smith, L. Jensen, D. Ristau, S. Günster, and H. Mädebach, "The Role of Film Interfaces in Near-Ultraviolet Absorption and Pulsed-Laser Damage in Ion-Beam–Sputtered Coatings Based on HfO_2/SiO_2 Thin-Film Pairs," Proc. SPIE **9632**, 96320B (2015).

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, "Temporal Waveguides for Optical Pulses," J. Opt. Soc. Am. B **33**, 1112 (2016).

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, "What is the Temporal Analog of Reflection and Refraction of Optical Beams?" Phys. Rev. Lett. **115**, 183901 (2015).

P. B. Radha, V. N. Goncharov, M. Hohenberger, T. C. Sangster, R. Betti, R. S. Craxton, D. H. Edgell, R. Epstein, D. H. Froula, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, S. X. Hu, W. Seka, A. Shvydky, S. Skupsky, J. A. Frenje, M. Gatu-Johnson, R. D. Petrasso, T. Ma, S. Le Pape, and A. J. Mackinnon, "Direct-Drive Implosion Physics: Results from OMEGA and the National Ignition Facility," J. Phys.: Conf. Ser. **688**, 012006 (2016).

P. B. Radha, M. Hohenberger, D. H. Edgell, J. A. Marozas, F. J. Marshall, D. T. Michel, M. J. Rosenberg, W. Seka, A. Shvydky, T. R. Boehly, T. J. B. Collins, E. M. Campbell, R. S. Craxton, J. A. Delettrez, S. N. Dixit, J. A. Frenje, D. H. Froula, V. N. Goncharov, S. X. Hu, J. P. Knauer, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, J. Moody, J. F. Myatt, R. D. Petrasso, S. P. Regan, T. C. Sangster, H. Sio, S. Skupsky, and A. Zylstra, "Direct Drive: Simulations and Results from the National Ignition Facility," Phys. Plasmas **23**, 056305 (2016) (invited).

P. B. Radha, M. Hohenberger, F. J. Marshall, D. T. Michel, J. Bates, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, S. N. Dixit, D. H. Edgell, J. A. Frenje, D. H. Froula, V. N. Goncharov, S. X. Hu, M. Karasik, J. P. Knauer,

S. LePape, J. A. Marozas, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, J. F. Myatt, S. Obenschein, R. D. Petrasso, S. P. Regan, M. J. Rosenberg, T. C. Sangster, W. Seka, A. Shvydky, H. Sio, S. Skupsky, and A. Zylstra, "Polar-Direct-Drive Experiments at the National Ignition Facility," J. Phys.: Conf. Ser. **717**, 012009 (2016).

S. P. Regan, V. N. Goncharov, I. V. Igumenshchev, T. C. Sangster, R. Betti, A. Bose, T. R. Boehly, M. J. Bonino, E. M. Campbell, D. Cao, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, J. A. Frenje, D. H. Froula, M. Gatu Johnson, V. Yu. Glebov, D. R. Harding, M. Hohenberger, S. X. Hu, D. Jacobs-Perkins, R. Janezic, M. Karasik, R. L. Keck, J. H. Kelly, T. J. Kessler, J. P. Knauer, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, S. P. Obenschain, R. D. Petrasso, P. B. Radha, B. Rice, M. J. Rosenberg, A. J. Schmitt, M. J. Schmitt, W. Seka, W. T. Shmayda, M. J. Shoup III, A. Shvydky, S. Skupsky, A. A. Solodov, C. Stoeckl, W. Theobald, J. Ulreich, M. D. Wittman, K. M. Woo, B. Yaakobi, and J. D. Zuegel, "Demonstration of Fuel Hot-Spot Pressure in Excess of 50 Gbar for Direct-Drive, Layered Deuterium-Tritium Implosions on OMEGA," Phys. Rev. Lett. **117**, 025001 (2016).

S. Salzman, L. J. Giannechini, H. J. Romanofsky, N. Golini, B. Taylor, S. D. Jacobs, and J. C. Lambropoulos, "Advanced Zirconia-Coated Carbonyl-Iron Particles for Acidic Magneto-rheological Finishing of Chemical-Vapor–Deposited ZnS and Other IR Materials," Proc. SPIE **9633**, 963307 (2015).

S. Salzman, H. J. Romanofsky, L. J. Giannechini, S. D. Jacobs, and J. C. Lambropoulus, "Magnetorheological Finishing of Chemical-Vapor Deposited Zinc Sulfide via Chemically and Mechanically Modified Fluids," Appl. Opt. **55**, 1481 (2016).

S. Salzman, H. J. Romanofsky, S. D. Jacobs, and J. C. Lambropoulos, "Surface–Texture Evolution of Different Chemical-Vapor-Deposited Zinc Sulfide Flats Polished with Various Magnetorheological Fluids," Prec. Eng. **43**, 257 (2016).

J. Serafini, Y. Akbas, L. Crandall, R. Bellman, C. Kosik Williams, and R. Sobolewski, "Nonequilibrium Carrier Dynamics in Ultrathin Si-on-Glass Films," J. Phys.: Conf. Ser. **647**, 012032 (2015).

J. Serafini, Y. Akbas, L. Crandall, R. Bellman, C. K. Williams, and R. Sobolewski, "Time-Resolved, Nonequilibrium Carrier Dynamics in Si-on-Glass Thin Films for Photovoltaic Cells," Semicond. Sci. Technol. **31**, 045006 (2016).

W. Shang, J. Yang, W. Zhang, Z. Li, B. Deng, Y. Dong, T. Zhu, C. Huang, X. Zhan, Y. Mei, L. Guo, R. Yu, S. Li, S. Jiang, S. Liu, F. Wang, Y. Ding, B. Zhang, and R. Betti, "Experimental Demonstration of Laser to X-Ray Conversion Enhancements with Low Density Gold Targets," Appl. Phys. Lett. **108**, 064102 (2016).

M. Sharpe, W. T. Shmayda, and W. U. Schröder, "Tritium Migration to the Surfaces of Type 316 Stainless Steel; Aluminum 6061; and Oxygen-Free, High-Conductivity Copper," Fusion Sci. Technol. **70**, 97 (2016).

W. T. Shmayda, M. Sharpe, A. M. Boyce, R. Shea, B. Petroski, and W. U. Schröder, "Dependence of Tritium Release From Stainless Steel on Temperature and Water Vapor," Fusion Sci. Technol. **68**, 766 (2015).

W. T. Shmayda, M. D. Wittman, R. F. Earley, J. L. Reid, and N. P. Redden, "The Laboratory for Laser Energetics' Hydrogen Isotope Separation System," Fusion Eng. Des. **109**, 128 (2016) (invited).

A. A. Solodov, M. J. Rosenberg, J. F. Myatt, R. Epstein, S. P. Regan, W. Seka, J. Shaw, M. Hohenberger, J. W. Bates, J. D. Moody, J. E. Ralph, D. P. Turnbull, and M. A. Barrios, "Hydrodynamic Simulations of Long-Scale-Length Plasmas for Two-Plasmon–Decay Planar-Target Experiments on the NIF," J. Phys.: Conf. Ser. **717**, 012053 (2016).

C. R. Stillman, P. M. Nilson, S. T. Ivancic, C. Mileham, I. A. Begishev, R. K. Junquist, D. J. Nelson, and D. H. Froula, "A Streaked X-Ray Spectroscopy Platform for Rapidly Heated, Near-Solid Density Plasmas," Rev. Sci. Instrum. **87**, 11E312 (2016) (invited).

C. Stoeckl, R. Boni, F. Ehrne, C. J. Forrest, V. Yu. Glebov, J. Katz, D. J. Lonobile, J. Magoon, S. P. Regan, M. J. Shoup III, A. Sorce, C. Sorce, T. C. Sangster, and D. Weiner, "Neutron Temporal Diagnostic for High-Yield Deuterium–Tritium Cryogenic Implosions on OMEGA," Rev. Sci. Instrum. **87**, 053501 (2016).

C. Stoeckl, W. Theobald, S. P. Regan, and M. H. Romanofsky, "Calibration of a Time-Resolved Hard-X-Ray Detector Using Radioactive Sources," Rev. Sci. Instrum. **87**, 11E323 (2016).

N. D. Viza, M. H. Romanofsky, M. J. Moynihan, and D. R. Harding, "The Effects of a Surfactant on the Operation of T-Junctions for Mass-Producing Foam Targets," Fusion Sci. Technol. **70**, 219 (2016).

H. Wen, A. V. Maximov, R. W. Short, J. F. Myatt, R. Yan, and C. Ren, "Two-Plasmon Decay Instability in Inhomogeneous Plasmas at Oblique Laser Incidence," Phys. Plasmas **23**, 092713 (2016).

R. Yan, R. Betti, J. Sanz, H. Aluie, B. Liu, and A. Frank, "Three-Dimensional Single-Mode Nonlinear Ablative Rayleigh–Taylor Instability," Phys. Plasmas **23**, 022701 (2016).

Omega External Users' Publications

R. Cristiano, L. Parlato, U. Nasti, M. Ejrnaes, H. Myoren, T. Taino, R. Sobolewski, and G. P. Pepe, "Superconductor/Ferromagnet Nanowires for Optical Photon Detection," IEEE Trans. Appl. Supercond. **26**, 2200104 (2016).

P. S. Datte, J. S. Ross, D. H. Froula, K. D. Daub, J. Galbraith, S. Glenzer, B. Hatch, J. Katz, J. Kilkenny, O. Landen, D. Manha, A. M. Manuel, W. Molander, D. Montgomery, J. Moody, G. F. Swadling, and J. Weaver, "The Design of the Optical Thomson Scattering Diagnostic for the National Ignition Facility," Rev. Sci. Instrum. **87**, 11E549 (2016).

P. Datte, J. S. Ross, D. Froula, J. Galbraith, S. Glenzer, B. Hatch, J. Kilkenny, O. Landen, A. M. Manuel, W. Molander, D. Montgomery, J. Moody, G. Swadling, J. Weaver, G. Vergel de Dios, and M. Vitalich, "The Preliminary Design of the Optical Thomson Scattering Diagnostic for the National Ignition Facility," J. Phys.: Conf. Ser. **717**, 012089 (2016).

B. Delormé, M. Olazabal-Loume, A. Casner, Ph. Nicolaï, D. T. Michel, G. Riazuelo, N. Borisenko, J. Breil, S. Fujioka, M. Grech, A. Orekhov, W. Seka, A. Sunahara, D. H. Froula, V. Goncharov, and V. T. Tikhonchuk, "Experimental Demonstration of Laser Imprint Reduction Using Underdense Foams," Phys. Plasmas **23**, 042701 (2016).

E. L. Dewald, F. Hartemann, P. Michel, J. Milovich, M. Hohenberger, A. Pak, O. L. Landen, L. Divol, H. F. Robey, O. A. Hurricane, T. Döppner, F. Albert, B. Bachmann, N. B. Meezan, A. J. MacKinnon, D. Callahan, and M. J. Edwards, "Generation and Beaming of Early Hot Electrons onto the Capsule in Laser-Driven Ignition Hohlraums," Phys. Rev. Lett. **116**, 075003 (2016).

T. Döppner, D. A. Callahan, O. A. Hurricane, D. E. Hinkel, T. Ma, H.-S. Park, L. F. Berzak Hopkins, D. T. Casey, P. Celliers, E. L. Dewald, T. R. Dittrich, S. W. Haan, A. L. Kritcher, A. MacPhee, S. Le Pape, A. Pak, P. K. Patel, P. T. Springer, J. D. Salmonson, R. Tommasini, L. R. Benedetti, E. Bond, D. K. Bradley, J. Caggiano, J. Church, S. Dixit, D. Edgell, M. J. Edwards, D. N. Fittinghoff, J. Frenje, M. Gatu Johnson, G. Grim, R. Hatarik, M. Havre, H. Herrmann, N. Izumi, S. F. Khan, J. L. Kline, J. Knauer, G. A. Kyrala, O. L. Landen, F. E. Merrill, J. Moody, A. S. Moore, A. Nikroo, J. E. Ralph, B. A. Remington, H. F. Robey, D. Sayre, M. Schneider, H. Streckert, R. Town, D. Turnbull, P. L. Volegov, A. Wan, K. Widmann, C. H. Wilde, and C. Yeamans, "Demonstration of High Performance in Layered Deuterium-Tritium Capsule Implosions in Uranium Hohlraums at the National Ignition Facility," Phys. Rev. Lett. **115**, 055001 (2015).

J. A. Frenje, P. E. Grabowski, C. K. Li, F. H. Séguin, A. B. Zylstra, M. Gatu Johnson, R. D. Petrasso, V. Yu. Glebov, and T. C. Sangster, "Measurements of Ion Stopping Around the Bragg Peak in High-Energy-Density Plasmas," J. Phys.: Conf. Ser. **647**, 012020 (2015).

L. Guazzotto and R. Betti, "Two-Fluid Equilibrium with Flow: FLOW2," Phys. Plasmas **22**, 092503 (2015).

A. J. Harvey-Thompson, A. B. Sefkow, T. N. Nagayama, M. S. Wei, E. M. Campbell, G. Fiksel, P.-Y. Chang, J. R. Davies, D. H. Barnak, V. Y. Glebov, P. Fitzsimmons, J. Fooks, and B. E. Blue, "Diagnosing Laser-Preheated Magnetized Plasmas Relevant to Magnetized Liner Inertial Fusion," Phys. Plasmas **22**, 122708 (2015).

O. A. Hurricane, D. A. Callahan, D. T. Casey, E. L. Dewald, T. R. Dittrich, T. Döppner, S. Haan, D. E. Hinkel, L. F. Berzak Hopkins, O. Jones, A. L. Kritcher, S. Le Pape, T. Ma, A. G. MacPhee, J. L. Milovich, J. Moody, A. Pak, H.-S. Park, P. K. Patel, J. E. Ralph, H. F. Robey, J. S. Ross, J. D. Salmonson, B. K. Spears, P. T. Springer, R. Tommasini, F. Albert, L. R. Benedetti, R. Bionta, E. Bond, D. K. Bradley, J. Caggiano,

P. M. Celliers, C. Cerjan, J. A. Church, R. Dylla-Spears, D. Edgell, M. J. Edwards, D. Fittinghoff, M. A. Barrios Garcia, A. Hamza, R. Hatarik, H. Herrmann, M. Hohenberger, D. Hoover, J. L. Kline, G. Kyrala, B. Kozioziemski, G. Grim, J. E. Field, J. Frenje, N. Izumi, M. Gatu Johnson, S. F. Khan, J. Knauer, T. Kohut, O. Landen, F. Merrill, P. Michel, A. Moore, S. R. Nagel, A. Nikroo, T. Parham, R. R. Rygg, D. Sayre, M. Schneider, D. Shaughnessy, D. Strozzi, R. P. J. Town, D. Turnbull, P. Volegov, A. Wan, K. Widmann, C. Wilde, and C. Yeamans, "Inertially Confined Fusion Plasmas Dominated by Alpha-Particle Self-Heating," Nat. Physics **12**, 800 (2016).

V. V. Ivanov, A. A. Anderson, and I. A. Begishev, "Four-Color Laser Diagnostics for *Z*-Pinch and Laser-Produced Plasma," Appl. Opt. **55**, 498 (2016).

L. C. Jarrott, M. S. Wei, C. McGuffey, A. A. Solodov, W. Theobald, B. Qiao, C. Stoeckl, R. Betti, H. Chen, J. Delettrez, T. Döppner, E. M. Giraldez, V. Y. Glebov, H. Habara, T. Iwawaki, M. H. Key, R. W. Luo, F. J. Marshall, H. S. McLean, C. Mileham, P. K. Patel, J. J. Santos, H. Sawada, R. B. Stephens, T. Yabuuchi, and F. N. Beg, "Visualizing Fast Electron Energy Transport into Laser-Compressed High-Density Fast-Ignition Targets," Nat. Phys. **12**, 499 (2016).

H. M. Johns, R. C. Mancini, T. Nagayama, D. C. Mayes, R. Tommasini, V. A. Smalyuk, S. P. Regan, and J. A. Delettrez, "Shell Stability and Conditions Analyzed Using a New Method of Extracting Shell Areal Density Maps from Spectrally Resolved Images of Direct-Drive Inertial Confinement Fusion Implosions," Phys. Plasmas **23**, 012709 (2016).

J. D. Kilkenny, P. M. Bell, D. K. Bradley, D. L. Bleuel, J. A. Caggiano, E. L. Dewald, W. W. Hsing, D. H. Kalantar, R. L. Kauffman, D. J. Larson, J. D. Moody, D. H. Schneider, M. B. Schneider, D. A. Shaughnessy, R. T. Shelton, W. Stoeffl, K. Widmann, C. B. Yeamans, S. H. Batha, G. P. Grim, H. W. Herrmann, F. E. Merrill, R. J. Leeper, J. A. Oertel, T. C. Sangster, D. H. Edgell, M. Hohenberger, V. Yu. Glebov, S. P. Regan, J. A. Frenje, M. Gatu-Johnson, R. D. Petrasso, H. G. Rinderknecht, A. B. Zylstra, G. W. Cooper, and C. Ruiz, "The National Ignition Facility Diagnostic Set at the Completion of the National Ignition Campaign, September 2012," Fusion Sci. Technol. **69**, 420 (2016).

J. D. Kilkenny, J. A. Caggiano, R. Hatarik, J. P. Knauer, D. B. Sayre, B. K. Spears, S. V. Weber, C. B. Yeamans, C. J. Cerjan, L. Divol, M. J. Eckart, V. Yu. Glebov, H. W. Herrmann, S. Le Pape, D. H. Munro, G. P. Grim, O. S. Jones, L. Berzak-Hopkins, M. Gatu-Johnson, A. J. Mackinnon, N. B. Meezan, D. T. Casey, J. A. Frenje, J. M. Mcnaney, R. Petrasso, H. Rinderknecht, W. Stoeffl, and A. B. Zylstra, "Understanding the Stagnation and Burn of Implosions on NIF," J. Phys.: Conf. Ser. **688**, 012048 (2016).

S. Laffite, J. L. Bourgade, T. Caillaud, J. A. Delettrez, J. A. Frenje, F. Girard, V. Yu. Glebov, T. Joshi, O. Landoas, G. Legay, S. Lemaire, R. C. Mancini, F. J. Marshall, L. Masse, P. E. Masson-Laborde, D. T. Michel, F. Philippe, C. Reverdin, W. Seka, and V. Tassin, "Time History Prediction of Direct-Drive Implosions on the Omega Facility," Phys. Plasmas **23**, 012706 (2016).

M. Margala, H. Wu, and R. Sobolewski, "Ballistic Deflection Transistors and Their Application to THz Amplification," J. Phys.: Conf. Ser. **647**, 012020 (2015).

P. E. Masson-Laborde, M. C. Monteil, V. Tassin, F. Philippe, P. Gauthier, A. Casner, S. Depierreux, C. Neuville, B. Villette, S. Lafite, P. Seytor, P. Fremerye, W. Seka, D. Teychenné, A. Debayle, D. Marion, P. Loiseau, and M. Casanova, "Laser Plasma Interaction on Rugby Hohlraum on the Omega Laser Facility: Comparison Between Cylinder, Rugby, and Elliptical Hohlraums," Phys. Plasmas **23**, 022703 (2016).

A. S. Moore, J. Benstead, M. F. Ahmed, J. Morton, T. M. Guymer, R. Soufli, T. Pardini, R. L. Hibbard, C. G. Bailey, P. M. Bell, S. Hau-Riege, M. Bedzyk, M. J. Shoup III, S. P. Regan, T. Agliata, R. Jungquist, D. W. Schmidt, L. B. Kot, W. J. Garbett, M. S. Rubery, J. W. Skidmore, E. Gullikson, and F. Salmassi, "Two-Color Spatial and Temporal Temperature Measurements Using a Streaked Soft X-Ray Imager," Rev. Sci. Instrum. **87**, 11E313 (2016).

Y. Ping, A. Fernandez-Panella, H. Sio, A. Correa, R. Shepherd, O. Landen, R. A. London, P. A. Sterne, H. D. Whitley, D. Fratanduono, T. R. Boehly, and G. W. Collins, "Differential Heating: A Versatile Method for Thermal Conductivity Measurements in High-Energy-Density Matter," Phys. Plasmas **22**, 092701 (2015).

M. J. Rosenberg, A. B. Zylstra, F. H. Séguin, H. G. Rinderknecht, J. A. Frenje, M. Gatu Johnson, H. Sio, C. J. Waugh, N. Sinenian, C. K. Li, R. D. Petrasso, S. LePape, T. Ma, A. J. Mackinnon, J. R. Rygg, P. A. Amendt, C. Bellei, L. R. Benedetti, L. Berzak Hopkins, R. M. Bionta, D. T. Casey, L. Divol, M. J. Edwards, S. Glenn, S. H. Glenzer, D. G. Hicks, J. R. Kimbrough, O. L. Landen, J. D. Lindl, A. MacPhee, J. M. McNaney, N. B. Meezan, J. D. Moody, M. J. Moran, H.-S. Park, J. Pino, B. A. Remington,

H. Robey, M. D. Rosen, S. C. Wilks, R. A. Zacharias, P. W. McKenty, M. Hohenberger, P. B. Radha, D. Edgell, F. J. Marshall, J. A. Delettrez, V. Yu. Glebov, R. Betti, V. N. Goncharov, J. P. Knauer, T. C. Sangster, H. W. Herrmann, N. M. Hoffman, G. A. Kyrala, R. J. Leeper, R. E. Olson, J. D. Kilkenny, and A. Nikroo, "A Direct-Drive Exploding-Pusher Implosion as the First Step in Development of a Monoenergetic Charged-Particle Backlighting Platform at the National Ignition Facility," High Energy Density Phys. **18**, 38 (2016).

J. S. Ross, P. Datte, L. Divol, J. Galbraith, D. H. Froula, S. H. Glenzer, B. Hatch, J. Katz, J. Kilkenny, O. Landen, A. M. Manuel, W. Molander, D. S. Montgomery, J. D. Moody, G. Swadling, and J. Weaver, "Simulated Performance of the Optical Thomson Scattering Diagnostic, Designed for the National Ignition Facility," Rev. Sci. Instrum. **87**, 11E510 (2016).

M. Rutkauskas, C. Farrell, C. Dorrer, K. L. Marshall, T. Crawford, T. R. Lundquist, P. Vedagarbha, K. Erington, D. Bodoh, and D. T. Reid, "Two-Photon Laser-Assisted Device Alteration in CMOS Integrated Circuits Using Linearly, Circularly and Radially Polarized Light," Microelectronics Reliability **60**, 62 (2016).

M. Rutkauskas, C. Farrell, C. Dorrer, K. L. Marshall, T. R. Lundquist, P. Vedagarbha, and D. T. Reid, "High-Resolution Subsurface Microscopy of CMOS Integrated Circuits Using Radially Polarized Light," Opt. Lett. **40**, 5502 (2015).

J. R. Rygg, A. B. Zylstra, F. H. Séguin, S. LePape, B. Bachmann, R. S. Craxton, E. M. Garcia, Y. Z. Kong, M. Gatu-Johnson, S. F. Khan, B. J. Lahmann, P. W. McKenty, R. D. Petrasso, H. G. Rinderknecht, M. J. Rosenberg, D. B. Sayre, and H. W. Sio, "Note: A Monoenergetic Proton Backlighter for the National Ignition Facility," Rev. Sci. Instrum. **86**, 116104 (2015).

S. A. Slutz, W. A. Stygar, M. R. Gomez, K. J. Peterson, A. B. Sefkow, D. B. Sinars, R. A. Vesey, E. M. Campbell, and R. Betti, "Scaling Magnetized Liner Inertial Fusion on Z and Future Pulsed-Power Accelerators," Phys. Plasmas **23**, 022702 (2016).

M. P. Valdivia, D. Stutman, C. Stoeckl, C. S. Mileham, I. A. Begishev, J. Bromage, and S. P. Regan, "A Talbot–Lau X-Ray Defelctometer as a High-Energy Density Plasma Diagnostic," IEEE Trans. Plasma Sci. **44**, 1592 (2016).

M. P. Valdivia, D. Stutman, C. Stoeckl, W. Theobald, C. Mileham, I. A. Begishev, J. Bromage, and S. P. Regan, "An X-Ray Backlit Talbot-Lau Deflectometer for High-Energy-Density Electron Density Diagnostics," Rev. Sci. Instrum. **87**, 023505 (2016).

J. Wang, F. Coppari, R. F. Smith, J. H. Eggert, A. E. Lazicki, D. E. Fratanduono, J. R. Rygg, T. R. Boehly, G. W. Collins, and T. S. Duffy, "X-Ray Diffraction of Molybdenum Under Shock Compression to 450 GPa," Phys. Rev. B **92**, 174114 (2015).

A. B. Zylstra, H. W. Herrmann, M. Gatu Johnson, Y. H. Kim, J. A. Frenje, G. Hale, C. K. Li, M. Rubery, M. Paris, A. Bacher, C. R. Brune, C. Forrest, V. Yu. Glebov, R. Janezic, D. McNabb, A. Nikroo, J. Pino, T. C. Sangster, F. H. Séguin, W. Seka, H. Sio, C. Stoeckl, and R. D. Petrasso, "Using Inertial Fusion Implosions to Measure the T + ^{3}He Fusion Cross Section at Nucleosynthesis-Relevant Energies," Phys. Rev. Lett. **117**, 035002 (2016).

Conference Presentations

D. Polsin, T. R. Boehly, S. Ivancic, M. C. Gregor, C. A. McCoy, D. D. Meyerhofer, D. E. Fratanduono, and P. M. Celliers, "Probing the Release of Shocked Material," Third High-Power Laser Workshop, Menlo Park, CA, 5–6 October 2015.

The following presentations were made at the Industrial Associates Fall 2015 Meeting, Rochester, NY, 12–13 October 2015:

B. W. Plansinis, G. P. Agrawal, and W. R. Donaldson, "Temporal Analog of Reflection and Refraction."

K. A. Sharma, T. A. Germer, J. D. Zuegel, and T. G. Brown, "A Review of Scattered Light Analysis for Distributed Polariztion Rotators."

The following presentations were made at Optifab 2015, Rochester, NY, 12–15 October 2015:

S. Salzman, L. J. Giannechini, H. J. Romanofsky, N. Golini, B. Taylor, S. D. Jacobs, and J. C. Lambropoulos, "Advanced Zirconia-Coated Carbonyl-Iron Particles for Acidic Magnetorheological Finishing of Chemical-Vapor–Deposited ZnS and Other IR Materials."

K. Tinkham, T. Jacobs, M. Mayton, Z. Hobbs, K. L. Marshall, and S. D. Jacobs, "Cerium Oxide Polishing Slurry Reclamation Project: Characterization Techniques and Results."

W. T. Shmayda, "Tritium Operations at the Laboratory for Laser Energetics," Health Physics Society, Rochester, NY, 15 October 2015.

The following presentations were made at Frontiers in Optics, San Jose, CA, 18–22 October 2015:

T. Petersen and J. Bromage, "A High-Average-Power, Degenerate, 2.06 μm BiB_3O_6 Femtosecond Optical Parametric Oscillator."

B. W. Plansinis, G. P. Agrawal, and W. R. Donaldson, "Temporal Analog of Reflection and Refraction."

R. L. McCrory, "From ALPHA to OMEGA EP—The History of LLE," OSA Rochester Section, Rochester, NY, 27 October 2015.

W. Theobald, "Shock Ignition—An Alternative Concept for Laser Fusion," GSI Presentation, Darmstadt, Germany, 27 October 2015 (invited).

The following presentations were made at the Tritium Focus Group, Los Alamos, NM, 3–5 November 2015:

W. T. Shmayda, "Radiological Challenges at the Laboratory for Laser Energetics."

W. T. Shmayda, M. Sharpe, and M. Cody, "Modeling Tritium on Metal Surfaces."

W. R. Donaldson, "Electro-Optic Measurements on the OMEGA Laser System: How to do Small Science in a Big Science Environment," 39th Annual IEEE EDS Activities in Western New York Conference, Rochester, NY, 6 November 2015 (invited).

The following presentations were made at the 57th Annual Meeting of the APS Division of Plasma Physics, Savannah, GA, 16–20 November 2015:

K. S. Anderson, P. W. McKenty, A. Shvydky, J. P. Knauer, T. J. B. Collins, J. A. Delettrez, D. Keller, and M. M. Marinak, "Characterizing Hot-Spot Dynamics of Direct-Drive Cryogenic Implosions on OMEGA."

D. H. Barnak, R. Betti, P.-Y. Chang, and J. R. Davies, "First Results from Laser-Driven MagLIF Experiments on OMEGA: Time Evolution of Laser Gas Heating Using Soft X-Ray Diagnostics."

P. X. Belancourt, P. A. Keiter, R. P. Drake, W. Theobald, T. J. B. Collins, M. J. Bonino, and P. Kozlowski, "Equation-of-State Measurements of Resorcinol Formaldehyde Foam Using Imaging X-Ray Thomson Spectrometer."

T. R. Boehly, M. J. Rosenberg, M. Hohenberger, D. N. Polsin, P. B. Radha, A. Shvydky, V. N. Goncharov, D. R. Harding, S. P. Regan, T. C. Sangster, P. M. Celliers, D. E. Fratanduono, and S. N. Dixit, "Polar-Direct-Drive Shock-Timing Measurements at the National Ignition Facility."

A. Bose, R. Betti, K. M. Woo, A. R. Christopherson, and D. Shvarts, "Effects of Long- and Intermediate-Wavelength Asymmetries on Hot-Spot Energetics."

D. Cao, J. A. Marozas, T. J. B. Collins, P. B. Radha, and P. W. McKenty, "A New Immediate Far-Field Spot Design for Polar Direct Drive at the National Ignition Facility."

P.-Y. Chang, D. H. Barnak, R. Betti, E. M. Campbell, J. R. Davies, J. P. Knauer, K. J. Peterson, A. B. Sefkow, D. B. Sinars, S. A. Slutz, and G. Fiksel, "First Results from Laser-Driven MagLIF Experiments on OMEGA: Optimization of Illumination Uniformity."

A. R. Christopherson, A. Bose, K. M. Woo, J. Howard, K. S. Anderson, E. M. Campbell, J. A. Delettrez, V. N. Goncharov, F. J. Marshall, R. L. McCrory, S. P. Regan, T. C. Sangster, C. Stoeckl, W. Theobald, M. J. Edwards, R. Nora, B. K. Spears, J. Sanz, O. A. Hurricane, J. D. Lindl, P. K. Patel, and D. Shvarts, "Alpha Heating and Burning Plasmas in Inertial Confinement Fusion" (invited).

T. J. B. Collins, J. A. Marozas, S. Skupsky, D. Cao, P. W. McKenty, J. A. Delettrez, and G. Moses, "Design Options for Polar-Direct-Drive Targets: From Alpha Heating to Ignition."

R. S. Craxton, Y. Z. Kong, E. M. Garcia, P. Huang, J. Kinney, P. W. McKenty, R. Zhang, S. Le Pape, F. Coppari, R. F. Heeter, B. J. MacGowan, J. R. Rygg, and M. B. Schneider, "Beam-Pointing Designs for Exploding-Pusher Proton and X-Ray Backlighting Targets at the National Ignition Facility."

A. Davies, S. Bucht, J. Katz, D. Haberberger, J. Bromage, J. D. Zuegel, D. H. Froula, P. A. Norreys, R. Bingham, J. Saldler, R. Trines, and L. O. Silva, "A Tunable (1100-nm to 1500-nm) 50-mJ Laser Enables a Pump-Depleting Plasma-Wave Amplifier."

J. R. Davies, D. H. Barnak, R. Betti, E. M. Campbell, P.-Y. Chang, G. Fiksel, W. Seka, K. J. Peterson, A. B. Sefkow, D. B. Sinars, and S. A. Slutz, "First Results from Laser-Driven MagLIF Experiments on OMEGA: Backscatter and Transmission Measurements of Laser Preheating."

A. K. Davis, D. Cao, D. T. Michel, D. H. Edgell, R. Epstein, V. N. Goncharov, M. Hohenberger, S. X. Hu, I. V. Igumenshchev, J. A. Marozas, A. V. Maximov, J. F. Myatt, P. B. Radha, S. P. Regan, T. C. Sangster, J. G. Shaw, D. H. Froula, M. Lafon, J. D. Moody, and R. J. Wallace, "Angularly Resolved Mass Ablation Rate and Ablation-Front-Trajectory Measurements at the Omega Laser and National Ignition Facilities" (invited).

J. A. Delettrez, B. Yaakobi, J. F. Myatt, and D. H. Edgell, "Recent Advances in the Transport Modeling of Two-Plasmon–Decay Electrons in the 1-D Hydrodynamic Code *LILAC*."

T. Eckert, A. Gula, L. Vincett, M. Yuly, S. J. Padalino, M. Russ, A. Simone, D. Ellison, M. Bienstck, H. Desmitt, T. C. Sangster, and S. P. Regan, "Efficiency Calibration for Measuring the $^{12}C(n,2n)^{11}C$ Cross-Section."

D. H. Edgell, R. K. Follett, V. N. Goncharov, I. V. Igumenshchev, J. Katz, J. F. Myatt, W. Seka, and D. H. Froula, "Diagnosing Cross-Beam Energy Transfer Using Beamlets of Unabsorbed Light from Direct-Drive Implosions."

R. Epstein, M. J. Rosenberg, A. A. Solodov, J. F. Myatt, S. P. Regan, W. Seka, M. Hohenberger, M. A. Barrios, and J. D. Moody, "Application and Analysis of the Isoelectronic Line Ratio Temperature Diagnostic in a Planar Ablating-Plasma Experiment at the National Ignition Facility."

T. M. Filkins, J. A. Steidle, R. Ward, C. Freeman, T. C. Sangster, and S. P. Regan, "Radiochromic Film Sensitivity Calibrations Using Ion Beams from a Palletron Accelerator."

R. K. Follett, J. G. Shaw, D. H. Edgell, R. J. Henchen, S. X. Hu, J. Katz, D. T. Michel, J. F. Myatt, A. A. Solodov, C. Stoeckl, B. Yaakobi, and D. H. Froula, "Modeling Hot-Electron Measurements in Multibeam Two-Plasmon–Decay Experiments."

C. J. Forrest, V. Yu. Glebov, J. P. Knauer, P. B. Radha, S. P. Regan, T. C. Sangster, C. Stoeckl, W. U. Schröeder, J. A. Frenje, M. Gatu Johnson, M. W. Paris, G. Hale, and A. B. Zylstra, "Neutron Induced Deuterium Breakup in Inertial Confinement Fusion at the Omega Laser Facility."

D. H. Froula, R. K. Follett, R. J. Henchen, V. N. Goncharov, D. T. Michel, A. A. Solodov, J. A. Delettrez, D. H. Edgell, B. Yaakobi, C. Stoeckl, and J. F. Myatt, "Mitigation of Two-Plasmon Decay in Direct-Drive Implosions Using Multilayer Targets."

V. Yu. Glebov, C. J. Forrest, J. P. Knauer, S. P. Regan, T. C. Sangster, and C. Stoeckl, "A New Neutron Time-of-Flight Detector for DT Yield and Ion-Temperature Measurements on OMEGA."

V. N. Goncharov, S. P. Regan, T. C. Sangster, R. Betti, T. R. Boehly, M. J. Bonino, E. M. Campbell, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, S. X. Hu, I. V. Igumenshchev, R. T. Janezic, J. H. Kelly, T. J. Kessler, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, P. B. Radha, W. Seka, W. T. Shmayda, A. Shvydky, S. Skupsky, C. Stoeckl, W. Theobald, F. Weilacher, B. Yaakobi, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, S. P. Obenschain, and M. Karasik, "Cross-Beam Energy Transfer Mitigation in Cryogenic Implosions on OMEGA."

X. Gong, V. N. Goncharov, and I. V. Igumenshchev, "A 3-D Model of Hot-Spot Formation in Inertial Confinement Fusion Implosions."

M. C. Gregor, T. R. Boehly, C. A. McCoy, D. N. Polsin, D. D. Meyerhofer, D. E. Fratanduono, P. M. Celliers, and G. W. Collins, "The Release Behavior of Diamond Shocked to 25 Mbar."

D. Haberberger, D. H. Froula, S. X. Hu, C. Joshi, S. Tochitsky, C. Gong, F. Fiuza, and L. Silva, "Shock-Wave Acceleration of Ions on OMEGA EP."

R. J. Henchen, S. X. Hu, R. K. Follett, J. Katz, V. N. Goncharov, D. H. Froula, and W. Rozmus, "Heat-Flux Measurements from Collective Thomson-Scattering Spectra."

M. Hohenberger, A. Shvydky, P. B. Radha, M. J. Rosenberg, V. N. Goncharov, S. Le Pape, F. J. Marshall, D. T. Michel, J. P. Knauer, S. P. Regan, T. C. Sangster, S. R. Nagel, A. Nikroo, V. A. Smalyuk, and R. J. Wallace, "Hydrodynamic Instability Growth in Polar-Direct-Drive Implosions at the National Ignition Facility."

S. X. Hu, L. A. Collins, J. D. Kress, V. N. Goncharov, T. R. Boehly, R. L. McCrory, and S. Skupsky, "First-Principles Investigations on Thermal Conductivity and Average Ionization of CH Ablators Under Extreme Conditions."

I. V. Igumenshchev, V. N. Goncharov, F. J. Marshall, K. Silverstein, J. P. Knauer, D. H. Froula, and S. P. Regan, "Numerical Study of Large-Scale, Laser-Induced Nonuniformities in Cryogenic OMEGA Implosions."

S. Ivancic, P. M. Nilson, C. R. Stillman, C. Mileham, and D. H. Froula, "Design of an Extreme Ultraviolet Spectrometer Suite for Isochoric-Heated Warm-Dense-Matter Studies."

J. P. Knauer, M. Gatu Johnson, R. M. Bionta, E. J. Bond, D. K. Bradley, J. A. Caggiano, D. A. Callahan, D. T. Casey, C. J. Cerjan, T. Doeppner, M. J. Eckart, M. J. Edwards, J. A. Frenje, V. Yu. Glebov, G. P. Grim, E. P. Hartouni, R. Hatarik, D. E. Hinkel, O. A. Hurricane, W. W. Hsing, J. D. Kilkenny, A. Kritcher, O. L. Landen, S. Le Pape, T. Ma, A. J. Mackinnon, D. H. Munro, H.-S. Park, P. K. Patel, R. D. Petrasso, J. E. Ralph, B. A. Remington, T. C. Sangster, D. B. Sayre, B. K. Spears, and C. B. Yeamans, "Neutron Yield and Ion Temperature from DD and DT Fusion in National Ignition Facility High-Foot Implosions."

P. Lawson-Keister, J. Padawar-Curry, H. Visca, K. Fletcher, S. J. Padalino, T. C. Sangster, and S. P. Regan, "Characterizing ICF Neutron Scintillation Diagnostics on the nTOF Line at SUNY Geneseo."

J. Li, S. X. Hu, and C. Ren, "Effects of Laser–Plasma Instabilities on Hydro Evolution in Direct-Drive Inertial Confinement Fusion."

J. A. Marozas, T. J. B. Collins, P. W. McKenty, and J. D. Zuegel, "Improved Wavelength Detuning Cross-Beam Energy Transfer Mitigation Strategy for Polar Direct Drive at the National Ignition Facility."

F. J. Marshall, V. N. Goncharov, V. Yu. Glebov, S. P. Regan, T. C. Sangster, and C. Stoeckl, "Framed X-Ray Imaging of Cryogenic Target Implosion Cores on OMEGA."

A. V. Maximov, J. F. Myatt, R. W. Short, I. V. Igumenshchev, and W. Seka, "Beam Energy Exchange Driven by Incoherent Laser Beams with Frequency Detuning."

C. A. McCoy, M. C. Gregor, D. N. Polsin, T. R. Boehly, D. E. Fratanduono, P. M. Celliers, G. W. Collins, and D. D. Meyerhofer, "Measurements of Sound Velocity and Grüneisen Parameter in CH and MgO Shocked to TPa Pressures."

P. W. McKenty, J. A. Marozas, F. J. Marshall, J. Weaver, S. P. Obenschain, and A. J. Schmitt, "Evaluation of Wavelength Detuning to Mitigate Cross-Beam Energy Transfer Using the Nike Laser."

D. T. Michel, T. C. Sangster, V. N. Goncharov, A. K. Davis, I. V. Igumenshchev, R. Epstein, V. Yu. Glebov, S. X. Hu, D. D. Meyerhofer, S. P. Regan, W. Seka, A. Shvydky, C. Stoeckl, and D. H. Froula, "Measurements of the Conduction-Zone Length and Mass Ablation Rate in Cryogenic Direct-Drive Implosions on OMEGA to Restrict Thermal-Transport Models."

J. F. Myatt, J. G. Shaw, V. N. Goncharov, J. Zhang, A. V. Maximov, R. W. Short, R. K. Follett, W. Seka, D. H. Edgell, D. H. Froula, D. F. DuBois, D. A. Russell, and H. X. Vu, "A Numerical Model for Two-Plasmon–Decay Hot-Electron Production and Mitigation in Direct-Drive Implosions."

P. M. Nilson, G. Fiksel, C. Stoeckl, P. A. Jannimagi, C. Mileham, W. Theobald, J. R. Davies, J. F. Myatt, A. A. Solodov, D. H. Froula, R. Betti, and D. D. Meyerhofer, "Supersonic Propagation of a K-Shell Ionization Front in Metal Targets."

S. J. Padalino, A. Simone, E. Turner, M. K. Ginnane, M. Glisic, B. Kousar, A. Smith, T. C. Sangster, and S. P. Regan, "Time-Resolved Tandem Faraday Cup Development for High-Energy TNSA Particles."

D. N. Polsin, T. R. Boehly, S. Ivancic, M. C. Gregor, C. A. McCoy, K. S. Anderson, D. E. Fratanduono, P. M. Celliers, and D. D. Meyerhofer, "Probing the Release of Shocked Material."

P. B. Radha, M. Hohenberger, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, D. H. Froula, V. N. Goncharov, S. X. Hu, J. P. Knauer, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, S. P. Regan, M. J. Rosenberg, T. C. Sangster, W. Seka, A. Shvydky, S. Skupsky, J. A. Frenje, R. D. Petrasso, H. Sio, A. B. Zylstra, S. N. Dixit, S. Le Pape, J. W. Bates, M. Karasik, and S. P. Obenschein, "Direct Drive: Simulations and Experiments at the National Ignition Facility" (invited).

S. P. Regan, V. N. Goncharov, T. C. Sangster, R. Betti, T. R. Boehly, M. J. Bonino, E. M. Campbell, D. Cao, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, M. Hohenberger, S. X. Hu, I. V. Igumenshchev, R. T. Janezic, J. H. Kelly, T. J. Kessler, J. P. Knauer, T. Z. Kosc, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. T. Michel, J. F. Myatt, P. B. Radha, M. J. Rosenberg, W. Seka, W. T. Shmayda, A. Shvydky, S. Skupsky, A. A. Solodov, C. Stoeckl, W. Theobald, M. D. Wittman, B. Yaakobi, J. D. Zuegel, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, S. P. Obenschain, M. Karasik, A. J. Schmitt, D. D. Meyerhofer, and M. J. Schmitt, "Energy Coupling and Hot-Spot Pressure in Direct-Drive Layered DT Implosions on OMEGA" (invited).

M. J. Rosenberg, A. A. Solodov, W. Seka, R. Epstein, J. F. Myatt, S. P. Regan, M. Hohenberger, T. J. B. Collins, D. P. Turnbull, P. Michel, J. D. Moody, J. E. Ralph, and M. A. Barrios, "Planar Two-Plasmon–Decay Experiments at Polar-Direct-Drive Ignition-Relevant Scale Lengths at the National Ignition Facility."

W. Seka, S. P. Regan, P. B. Radha, M. J. Rosenberg, M. Hohenberger, V. N. Goncharov, J. F. Myatt, J. E. Ralph, J. D. Moody, and D. P. Turnbull, "Stimulated Raman Scattering as Coronal T_e Diagnostic for Direct-Drive Experiments on the Current National Ignition Facility."

R. W. Short, A. V. Maximov, J. F. Myatt, W. Seka, and J. Zhang, "Absolute Two-Plasmon Decay and Stimulated Raman Scattering in Direct-Drive Irradiation Geometries."

A. Shvydky, M. Hohenberger, P. B. Radha, M. J. Rosenberg, R. S. Craxton, V. N. Goncharov, J. A. Marozas, F. J. Marshall, P. W. McKenty, S. P. Regan, and T. C. Sangster, "Numerical Simulations of Hydrodynamic Instability Growth and Imprint Experiments at the National Ignition Facility."

A. A. Solodov, M. J. Rosenberg, J. F. Myatt, R. Epstein, S. P. Regan, W. Seka, J. G. Shaw, M. Hohenberger, J. W. Bates, J. E. Moody, J. E. Ralph, D. P. Turnbull, and M. A. Barrios, "Modeling of Two-Plasmon–Decay Experiments at Direct-Drive Ignition-Relevant Plasma Conditions at the National Ignition Facility."

C. R. Stillman, P. M. Nilson, S. Ivancic, C. Mileham, D. D. Meyerhofer, D. H. Froula, M. E. Martin, and R. A. London, "X-Ray Spectroscopy of Rapidly Heated Buried-Aluminum Layers."

C. Stoeckl, C. J. Forrest, V. Yu. Glebov, T. C. Sangster, W. U. Schröder, and E. Henry, "Spectroscopy of Neutrons Generated Through Nuclear Reactions in Short-Pulse Laser Experiments."

A. Tantillo, M. C. Watson, E. Pogozelski, T. C. Sangster, and S. P. Regan, "Target Chamber Manipulator."

W. Theobald, R. Betti, W. Seka, A. Bose, D. T. Michel, C. Stoeckl, R. Yan, R. Nora, A. Casner, M. Lafon, X. Ribeyre, E. Llor-Aisa, A. Vallet, J. Peebles, F. N. Beg, and M. S. Wei, "Hot-Electron Generation in Various Ablator Materials at Shock-Ignition–Relevant Laser Intensities."

H. Wen, A. V. Maximov, R. Yan, C. Ren, J. Li, and J. F. Myatt, "Three-Dimensional Modeling of Laser–Plasma Interactions Near the Quarter-Critical Density in Plasmas."

M. P. Wiesner, R. Ume, J. G. McLean, T. C. Sangster, and S. P. Regan, "Enhancement of Particle Track Etch Rate in CR-39 by UV Exposure."

K. M. Woo, R. Betti, A. Bose, R. Epstein, J. A. Delettrez, K. S. Anderson, R. Yan, P.-Y. Chang, D. Jonathan, and M. Charissis, "Three-Dimensional Simulations of the Deceleration Phase of Inertial Fusion Implosions Using *DEC3D*."

R. Yan, R. Betti, J. Sanz, B. Liu, and A. Frank, "Three-Dimensional Single-Mode Nonlinear Ablative Rayleigh–Taylor Instability."

J. Zhang, J. F. Myatt, R. W. Short, A. V. Maximov, H. X. Vu, D. F. DuBois, and D. A. Russell, "Self-Consistent Calculation of Half-Harmonic Emission Generated by the Two-Plasmon–Decay Instability."

D. R. Harding, B. Chock, W. Wang, Z. Bei, and T. B. Jones, "Electric-Field–Assisted Motion of Low-Surface–Energy Fluid Droplets on Dielectric Surfaces," 2015 MRS Fall Meeting, Boston, MA, 29 November–4 December 2015.

E. M. Campbell, D. Haberberger, A. Davies, S.-W. Bahk, J. Bromage, J. D. Zuegel, D. H. Froula, J. Sadler, and P. A. Norreys, "Ultrahigh Brightness Laser Development at the Laboratory for Laser Energetics," George Washington University, Washington, DC, 14 December 2015.

R. L. McCrory, "Perspectives on Inertial Fusion Energy," Fusion Power Associates, Washington, DC, 16–17 December 2015.

M. J. Rosenberg, A. A. Solodov, W. Seka, R. Epstein, J. F. Myatt, S. P. Regan, M. Hohenberger, T. J. B. Collins, P. Michel, D. P. Turnbull, J. D. Moody, J. E. Ralph, M. A. Barrios, and J. W. Bates, "Planar Laser–Plasma Interaction Experiments at Direct-Drive Ignition-Relevant Scale Lengths at the National Ignition Facility," NIF User Group Meeting, Livermore, CA, 1–3 February 2016.

J. D. Zuegel, A. Agliata, S.-W. Bahk, I. A. Begishev, W. A. Bittle, T. Buczek, J. Bunkenburg, D. Canning, A. Consentino, D. Coppenbarger, R. Cuffney, C. Dorrer, J. Fini, D. H. Froula, G. Gates, M. J. Guardalben, D. Haberberger, S. Hadrich, C. Hall, H. Huang, R. K. Jungquist, C. Kellogg, T. J. Kessler, G. Kick, E. Kowaluk, B. E. Kruschwitz, T. Lewis, J. Magoon, J. Marciante, D. D. Meyerhofer, C. Mileham, M. Millecchia, S. F. B. Morse, P. M. Nilson, A. Okishev, J. B. Oliver, R. G. Peck, C. Rees, B. S. Rice, E. Riedle, A. L. Rigatti, C. Robillard, R. G. Roides, M. H. Romanofsky, J. Rothhardt, M. J. Shoup III, C. Smith, C. Stoeckl, R. Taylor, L. J. Waxer, and D. Weiner, "Technology Development and Prospects for 100-PW-Class Optical Parametric Chirped-Pulse Amplification Pumped by OMEGA EP," the 2nd International Symposium on High Power Laser Science and Engineering, Suzhou, China, 15–18 March 2016.

The following presentations were made at Industrial Associates, Rochester, NY, 21–22 March 2016:

L. E. McIntire, M. Divoky, W. H. Knox, S.-W. Bahk, and J. D. Zuegel, "High-Contrast, Closed-Loop Control of Continuous-Wave Laser Beam Profiles."

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, "Controlling the Optical Pulse Spectrum with an Electro-Optic Phase Modulator."

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, "Temporal Waveguiding Caused by Time Reflection and Refraction."

R. Betti, A. R. Christopherson, A. Bose, K. M. Woo, J. Howard, K. S. Anderson, E. M. Campbell, J. A. Delettrez, V. N. Goncharov, F. J. Marshall, R. L. McCrory, S. P. Regan, T. C. Sangster, C. Stoeckl, W. Theobald, M. J. Edwards, R. Nora, B. K. Spears, and J. Sanz, "The Most Unsolved Problem in Plasma Physics: Demonstrating a Burning Plasma in the Laboratory," Solved and Unsolved Problems in Plasma Physics, Princeton, NJ, 28–30 March 2016 (invited).

M. J. Rosenberg, V. Yu. Glebov, C. Stoeckl, W. Seka, F. J. Marshall, J. A. Delettrez, P. W. McKenty, M. Hohenberger, R. Betti, V. N. Goncharov, P. B. Radha, J. P. Knauer, T. C. Sangster, H. G. Rinderknecht, F. H. Séguin, A. B. Zylstra, J. A. Frenje, H. Sio, M. Gatu Johnson, C. K. Li, R. D. Petrasso, N. M. Hoffman, G. Kagan, H. W. Herrmann, R. E. Olson, P. A. Amendt, S. Le Pape, T. Ma, A. J. Mackinnon, J. R. Rygg, S. C. Wilks, L. Berzak Hopkins, D. T. Casey, O. L. Landen, J. D. Lindl, J. Pino, H. F. Robey, S. Atzeni, O. Larroche, and A. Nikroo, "Ion Kinetic Effects in Exploding-Pusher Implosions on OMEGA and the National Ignition Facility," ICF Kinetic Physics Workshop, Livermore, CA, 5–7 April 2016.

The following presentations were made at the 11th International Conference on Tritium Science and Technology, Charleston, SC, 17–22 April 2016:

C. Fagan, M. Sharpe, W. T. Shmayda, and W. U. Schröder, "The Impact of Hydrophobicity of Stainless-Steel Surfaces on Tritium Inventories."

M. Sharpe, C. Fagan, W. T. Shmayda, and W. U. Schröder, "Influence of Surface Modifications on the Adsorption and Absorption of Tritium into 316 Stainless Steel."

W. T. Shmayda, M. D. Wittman, J. L. Reid, and R. F. Earley, "Tritium Activities at the University of Rochester's Laboratory for Laser Energetics."

M. D. Wittman, W. T. Shmayda, J. L. Reid, N. Redden, R. F. Earley, J. Magoon, K. Heung, S. Xiao, T. Sessions, and S. Redd, "Isotope Separation System at the University of Rochester's Laboratory for Laser Energetics."

The following presentations were made at the 12th Direct Drive and Fast Ignition Workshop, Talence, France, 25–27 April 2016:

R. Betti, A. Bose, K. M. Woo, E. M. Campbell, A. R. Christopherson, R. L. McCrory, and R. Nora, "Fusion-Yield Extrapolation to Higher Laser Energies for Direct-Drive Inertial Fusion Including the Effect of Alpha Heating."

V. N. Goncharov, S. P. Regan, T. C. Sangster, R. Betti, T. R. Boehly, M. J. Bonino, E. M. Campbell, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, S. X. Hu, I. V. Igumenshchev, R. T. Janezic, J. H. Kelly, T. J. Kessler, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. T. Michel, J. F. Myatt, P. B. Radha, W. Seka, W. T. Shmayda, A. Shvydky, S. Skupsky, C. Stoeckl, W. Theobald, F. Weilacher, B. Yaakobi, D. D. Meyerhofer, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, S. P. Obenschain, and M. Karasik, "Status of Direct-Drive Research in the U.S."

I. V. Igumenshchev, V. N. Goncharov, F. J. Marshall, J. P. Knauer, E. M. Campbell, C. J. Forrest, D. H. Froula, V. Yu. Glebov, R. L. McCrory, T. C. Sangster, S. Skupsky, and C. Stoeckl, "Three-Dimensional Modeling of Direct-Drive Cryogenic Implosions on OMEGA."

P. B. Radha, "Direct Drive at the National Ignition Facility."

S. P. Regan, V. N. Goncharov, T. C. Sangster, R. Betti, T. R. Boehly, M. J. Bonino, E. M. Campbell, D. Cao, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, M. Hohenberger, S. X. Hu, I. V. Igumenshchev, R. T. Janezic, J. H. Kelly, T. J. Kessler, J. P. Knauer, T. Z. Kosc, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. T. Michel, J. F. Myatt, P. B. Radha, M. J. Rosenberg, W. Seka, W. T. Shmayda, A. Shvydky, S. Skupsky, A. A. Solodov, C. Stoeckl, W. Theobald, M. D. Wittman, B. Yaakobi, J. D. Zuegel, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, S. P. Obenschain, M. Karasik, A. J. Schmitt, D. D. Meyerhofer, and M. J. Schmitt, "Demonstraton of 50-Gbar Hot-Spot Pressure and Reduction of Cross-Beam Energy Transfer for Direct-Drive, Layered Deuterium–Tritium Implosions on OMEGA."

W. Theobald, R. Betti, W. Seka, A. Bose, K. S. Anderson, M. Hohenberger, F. J. Marshall, D. T. Michel, A. Shvydky, A. A. Solodov, C. Stoeckl, D. H. Edgell, B. Yaakobi, R. Nora, A. Casner, M. Lafon, C. Reverdin, X. Ribeyre, E. Llor-aisa, A. Vallet, J. Peebles, F. N. Beg, and M. S. Wei, "Gigabar Shocks for Direct-Drive Shock-Ignition Fusion."

The following presentations were made at the Omega Laser Facility Users Group Workshop, Rochester, NY, 27–29 April 2016:

W. J. Armstrong, J. C. Puth, and R. Rombaut, "Target Diagnostic Timing Manager."

J. R. Davies, D. H. Barnak, R. Betti, E. M. Campbell, P.-Y. Chang, G. Fiksel, J. P. Knauer, S. P. Regan, A. Harvey-Thompson, K. J. Peterson, A. B. Sefkow, D. B. Sinars, and S. A. Slutz, "An Overview of Laser-Driven Magnetized Liner Inertial Fusion on OMEGA."

M. J. Guardalben, M. Spilatro, L. J. Waxer, and M. Barczys, "OMEGA EP UV Prediction Model for Enhanced Operational Performance."

E. M. Hill, G. Balonek, R. Cuffney, J. H. Kelly, and T. Z. Kosc, "OMEGA SSD Arbitrary Waveform Generation Installation and Activation."

E. M. Hill and J. C. Puth, "Omega Laser Facility and Diagnostic Timing Management."

S. Ivancic, D. Haberberger, P. Angland, M. Barczys, M. Bedzyk, R. Boni, R. Brown, R. S. Craxton, A. Davies, F. Ehrne, R. K. Jungquist, J. C. Puth, R. G. Roides, W. Seka, M. J. Shoup III, C. Stoeckl, W. Theobald, D. Weiner, and D. H. Froula, "Optical Diagnostic Suite (Schlieren, Interferometry, and Angular Filter Refractometry) on OMEGA EP Using a 10-ps, 263-nm Probe Beam."

R. Jungquist, "Short-Pulse Stray Light Management."

R. W. Kidder, A. Zeller, M. Charissis, P. Stoeckl, J. J. Rung, and R. Holderried, "The Principal Investigator Portal Provides a Gateway to Shot Information for External Users."

R. W. Kidder, A. Zeller, T. Meyer, P. Stoeckl, R. Pasols, and R. Holderried, "External User Access Through the LLE Principal Investigator Portal."

J. Kwiatkowski, M. Barczys, M. Bedzyk, A. Kalb, B. E. Kruschwitz, C. McMahon, T. Nguyen, A. L. Rigatti, and M. Sacchitella, "OMEGA EP Short-Pulse Ratiometer."

J. Kwiatkowski, E. M. Hill, B. Ehrich, M. Heimbueger, F. J. Marshall, and B. E. Kruschwitz, "OMEGA EP Pointing, Focusing, and Timing."

J. Kwiatkowski, S. J. Stagnitto, S. F. B. Morse, M. Labuzeta, and V. Guiliano, "Characterizing Debris-Shield Transmission Degradation and Estimating On-Target Energy."

D. Mastrosimone, A. Agliata, T. Buczek, D. J. Lonobile, M. J. Shoup III, and C. Sorce, "Enhanced Gas-Filled Capabilities for Ten-Inch-Manipulator–Based Target Positioners."

D. Mastrosimone, G. Fiksel, J. Magoon, A. Agliata, P.-Y. Chang, and D. H. Barnak, "Fielding MIFEDS on OMEGA."

S. F. B. Morse, "Omega Facility OLUG 2016 Update: Progress on Recommendations and Items of General Interest."

P. M. Nilson, F. Ehrne, C. Mileham, D. Mastrosimone, R. K. Jungquist, C. Taylor, R. Boni, J. Hassett, D. J. Lonobile, R. W. Kidder, M. J. Shoup III, A. A. Solodov, C. Stoeckl, and D. H. Froula, "High-Resolving Power, Ultrafast Streaked X-Ray Spectroscopy on OMEGA EP."

T. C. Sangster, K. S. Anderson, R. Betti, T. R. Boehly, B. Boni, M. J. Bonino, E. M. Campbell, D. Canning, D. Cao, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, W. R. Donaldson, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, M. Hohenberger, S. X. Hu, H. Huang, I. V. Igumenshchev, R. T. Janezic, D. W. Jacobs-Perkins, J. Katz, R. L. Keck, J. H. Kelly, T. J. Kessler, B. E. Krushwitz, J. P. Knauer, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, A. V. Maximov, R. L. McCrory, P. W. McKenty, D. T. Michel, S. F. B. Morse, J. F. Myatt, P. M. Nilson, J. C. Puth, P. B. Radha, B. S. Rice, M. J. Rosenberg, W. Seka, W. T. Shmayda, R. W. Short, A. Shvydky, M. J. Shoup III, S. Skupsky, A. A. Solodov, C. Sorce, S. Stagnito, C. Stoeckl, W. Theobald, J. Ulreich, M. D. Wittman, B. Yaakobi, J. D. Zuegel, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, H. Sio, B. Lahmann, M. A. Barrios, P. Bell, D. K. Bradley, D. A. Callahan, A. Carpenter, D. T. Casey, J. Celeste, M. Dayton, S. N. Dixit, C. Goyon, O. A. Hurricane, S. Le Pape, L. Masse, P. Michel, J. D. Moody, S. R. Nagel, A. Nikroo, R. Nora, L. Pickworth, J. E. Ralph, H. G. Rinderknecht, R. P. J. Town, D. P. Turnbull, R. J. Wallace, P. J. Wegner, M. Farrell, A. Greenwood, T. Hilsabeck, J. D. Kilkenny, N. Rice, M. Schoff, N. Petta, J. Hund, S. P. Obenschain, J. W. Bates, M. Karasik, A. J. Schmitt, J. Weaver, M. J. Schmitt, G. Rochau, J. Porter, M. Sanchez, L. Claus, G. Robertson, O. Looker, J. Hares, and T. Dymoke-Bradshaw, "Direct Drive 2020."

I. Seth and J. P. Knauer, "Analysis of Chemical Vapor Deposition Diamonds for Neutron Detection on OMEGA."

S. Stagnitto, M. Labuzeta, and C. Sorce, "Qualifying as an External Instrument Specialist/Technician at LLE."

X. K. Zhou and S. X. Hu, "Radiation Reaction of Electrons at Laser Intensities up to 10^{25} W/cm^2."

N. D. Viza, M. Wang, M. H. Romanofsky, and D. R. Harding, "Using Lab-on-Chip Technology to Mass Produce Inertial Fusion Energy Targets," Exploring Alternative Energy: CO_2 as a Resource, Rochester, NY, 29 April 2016.

The following presentations were made at the 46th Annual Anomalous Absorption Conference, Old Saybrook, CT, 1–6 May 2016:

D. H. Barnak, R. Betti, E. M. Campbell, P.-Y. Chang, J. R. Davies, G. Fiksel, J. P. Knauer, S. P. Regan, A. Harvey-Thompson, K. J. Peterson, A. B. Sefkow, D. B. Sinars, and S. A. Slutz, "Scaling Laser-Driven Magnetized Liner Inertial Fusion to the National Ignition Facility."

E. Borwick, S. X. Hu, J. Li, R. Yan, and C. Ren, "Full-Pulse Particle-in-Cell Simulations of Hot-Electron Generation in OMEGA Experiments."

S. Bucht, D. Haberberger, J. Bromage, and D. H. Froula, "Transforming the Idler for Use in Laser–Plasma Interaction Experiments."

E. M. Campbell, "The National Ignition Facility: An Unexpected Journey, Lessons to be Learned to Secure Projects of Scale, and Persepctives on the Future of Inertial Confinement Fusion Research."

A. Davies, J. Katz, S. Bucht, D. Haberberger, J. Bromage, J. D. Zuegel, D. H. Froula, J. Sadler, P. A. Norreys, R. Bingham, R. Trines, and L. O. Silva, "Thomson Scattering from Nonlinear Electron Plasma Waves."

J. R. Davies, D. H. Barnak, R. Betti, P.-Y. Chang, K. J. Peterson, A. B. Sefkow, D. B. Sinars, and S. A. Slutz, "An Overview of Laser-Driven Magnetized Linear Inertial Fusion on OMEGA."

A. K. Davis, D. T. Michel, S. X. Hu, R. Epstein, J. P. Knauer, and D. H. Froula, "Conduction-Zone Measurements Using X-Ray Self-Emission Images."

D. H. Edgell, R. K. Follett, J. Katz, J. F. Myatt, W. Seka, and D. H. Froula, "Polarization Dependence of Cross-Beam Energy Transfer in Unabsorbed Light Beamlets."

D. H. Froula, R. K. Follett, R. J. Henchen, V. N. Goncharov, A. A. Solodov, J. A. Delettrez, D. H. Edgell, B. Yaakobi, C. Stoeckl, and J. F. Myatt, "The Effect of Cross-Beam Energy Transfer on Two-Plasmon Decay in Direct-Drive Implosions."

D. Haberberger, D. H. Froula, A. Pak, A. Link, P. K. Patel, F. Fiuza, S. Ya. Tochitsky, and C. Joshi, "Shock-Wave Acceleration of Ions on OMEGA EP."

R. J. Henchen, S. X. Hu, W. Rozmus, J. Katz, and D. H. Froula, "Heat-Flux Measurements from Collective Thomson-Scattering Spectra."

J. Li, R. Yan, and C. Ren, "Density Modulation–Induced Absolute Laser–Plasma Instabilities: Simulations and Theory."

D. T. Michel, S. X. Hu, A. K. Davis, V. Yu. Glebov, V. N. Goncharov, I. V. Igumenshchev, P. B. Radha, C. Stoeckl, and D. H. Froula, "Measurements of the Effect of Adiabat on the Shell Thickness of Direct-Drive Implosions on OMEGA."

J. F. Myatt, J. G. Shaw, R. K. Follett, D. H. Edgell, V. N. Goncharov, A. V. Maximov, R. W. Short, W. Seka, and D. H. Froula, "A Wave-Based Model for Cross-Beam Energy Transfer in Inhomogeneous Plasmas."

C. Ren, J. Li, W.-D. Liu, and R. Yan, "Simulation of Stimulated Brillouin Scattering and Stimulated Raman Scattering in Shock Ignition."

M. J. Rosenberg, A. A. Solodov, W. Seka, R. Epstein, J. F. Myatt, S. P. Regan, M. Hohenberger, T. J. B. Collins, P. A. Michel, D. P. Turnbull, C. Goyon, J. D. Moody, J. E. Ralph, M. A. Barrios, and J. W. Bates, "Planar Laser–Plasma Interaction Experiments at Direct-Drive Ignition-Relevant Scale Lengths at the National Ignition Facility."

W. Seka, J. F. Myatt, V. N. Goncharov, R. Betti, S. P. Regan, A. V. Maximov, J. A. Delettrez, R. E. Bahr, A. A. Solodov, M. J. Rosenberg, A. Bose, and R. W. Short, "The Influence of Smoothing by Spectral Dispersion on Cross-Beam Energy Transfer."

R. W. Short, W. Seka, and J. F. Myatt, "Kinetic Analysis of Convective Stimulated Raman Scattering and Its Potential as a Temperature Diagnostic."

A. A. Solodov, M. J. Rosenberg, J. F. Myatt, R. Epstein, S. P. Regan, W. Seka, J. G. Shaw, M. Hohenberger, J. W. Bates, P. A. Michel, J. D. Moody, J. E. Ralph, D. P. Turnbull, and M. A. Barrios, "Modeling of Laser–Plasma Interaction Experiments at Direct-Drive Ignition-Relevant Plasma Conditions at the National Ignition Facility."

I. Seth and J. P. Knauer, "Analysis of Chemical-Vapor–Deposition Diamonds for Neutron Detection on OMEGA," Intel International Science and Engineering Fair, Phoenix, AZ, 8–13 May 2016.

G. Chen, A. Koroliov, R. Sherstha, and R. Sobolewski, "Terahertz Spectroscopy of Graphene-Polymer Nanocomposites," Frontiers in Materials Science for the 21st Century, Rochester, NY, 16 May 2016.

The following presentations were made at the 21st Topical Conference on High-Temperature Plasma Diagnostics, Madison, WI, 5–9 June 2016:

P. X. Belancourt, W. Theobald, P. A. Keiter, T. J. B. Collins, M. J. Bonino, P. Kozlowski, S. P. Regan, and R. P. Drake, "Demonstration of Imaging X-Ray Thomson Scattering on OMEGA EP."

A. K. Davis, D. T. Michel, R. S. Craxton, R. Epstein, M. Hohenberger, T. Mo, and D. H. Froula, "X-Ray Self-Emission Imaging Used to Diagnose 3-D Nonuniformities in Direct-Drive ICF Implosions."

R. K. Follett, J. A. Delettrez, R. J. Henchen, J. Katz, D. H. Edgell, J. F. Myatt, and D. H. Froula, "Plasma Characterization Using Ultraviolet Thomson Scattering from Ion-Acoustic and Electron Plasma Waves" (invited).

C. J. Forrest, V. Yu. Glebov, V. N. Goncharov, J. P. Knauer, P. B. Radha, S. P. Regan, M. H. Romanofsky, T. C. Sangster, M. J. Shoup III, and C. Stoeckl, "High-Dynamic-Range Neutron Time-of-Flight Detector Used to Infer the $D(t,n)^4He$ and $D(d,n)^3He$ Reaction Yield and Ion Temperature on OMEGA."

V. Yu. Glebov, R. Flight, C. J. Forrest, J. P. Knauer, S. P. Regan, M. H. Romanofsky, T. C. Sangster, and C. Stoeckl, "A New Microchannel-Plate Neutron Time-of-Flight Detector."

S. T. Ivancic, D. Nelson, P. M. Nilson, C. R. Stillman, C. Mileham, I. A. Begishev, and D. H. Froula, "Design of an Extreme Ultraviolet Spectrometer Suite for Characterization of Rapidly Heated Solid Matter."

J. Katz, R. Boni, A. Maltsev, C. Muir, M. H. Romanofsky, and D. H. Froula, "A Pulse-Front-Tilt–Compensated Streaked Optical Spectrometer with High Throughput and Picosecond Time Resolution."

J. P. Knauer, C. J. Forrest, V. Yu. Glebov, T. C. Sangster, and C. Stoeckl, "Three-Axis Neutron Time-of-Flight Measurement."

P. M. Nilson, F. Ehrne, C. Mileham, D. Mastrosimone, R. K. Jungquist, C. Taylor, C. R. Stillman, S. T. Ivancic, R. Boni, J. Hassett, D. J. Lonobile, R. W. Kidder, M. J. Shoup III, A. A. Solodov, C. Stoeckl, D. H. Froula, K. W. Hill, L. Gao, M. Bitter, P. Efthimion, and D. D. Meyerhofer, "High-Resolving-Power, Ultrafast Streaked X-Ray Spectroscopy on OMEGA EP" (invited).

C. Sorce, C. Stoeckl, J. Katz, R. Boni, F. Ehrne, C. J. Forrest, V. Yu. Glebov, D. J. Lonobile, S. P. Regan, M. J. Shoup III, A. Sorce, T. C. Sangster, D. Weiner, and J. Magoon, "A Neutron Temporal Diagnostic for High-Yield DT Cryogenic Implosions on OMEGA."

C. R. Stillman, P. M. Nilson, S. Ivancic, C. Mileham, I. A. Begishev, R. K. Junquist, and D. H. Froula, "A Streaked X-Ray Spectroscopy Platform for Rapidly Heated, Near-Solid Density Plasmas."

C. Stoeckl, W. Theobald, S. P. Regan, and M. H. Romanofsky, "Calibration of a Time-Resolved Hard X-Ray Detector Using Radioactive Sources."

W. Theobald, C. Sorce, M. Bedzyk, F. J. Marshall, C. Stoeckl, S. P. Regan, T. Hilsabeck, J. D. Kilkenny, D. Morris, M. Chung, J. Hares, T. Dymoke-Bradshaw, P. Bell, J. Celeste, A. Carpenter, M. Dayton, D. K. Bradley, M. C. Jackson, L. Pickworth, S. Nagel, G. Rochau, J. Porter, M. Sanchez, L. Claus, G. Robertson, and Q. Looker, "Conceptual Design of a Single-Line-of-Sight Time-Resolved X-Ray Imager on OMEGA."

The following presentations were made at CLEO 2016, San Jose, CA, 5–10 June 2016:

I. A. Begishev, J. Bromage, P. S. Datte, S. T. Yang, and J. D. Zuegel, "Record Fifth-Harmonic–Generation Efficiency Producing 211-nm Pulses Using Cesium Lithium Borate."

S. G. Demos, R. Levenson, F. Fereidouni, and Z. Harmany, "Slide-Free (But Not Necessarily Stain-Free) Microscopy via Ultraviolet Excitation."

C. Dorrer, W. A. Bittle, R. Cuffney, E. M. Hill, T. Z. Kosc, J. H. Kelly, and J. D. Zuegel, "High-Contrast, Time-Multiplexed Pulse-Shaping Systems."

C. Dorrer, Y. Li, and P. Fiala, "Focal-Spot Optimization by Polarization Modulation."

C. Dorrer, L. J. Waxer, A. Kalb, E. M. Hill, and J. Bromage, "Single-Shot, High-Resolution Fiber-Based Phase-Diversity Photodetection of Optical Pulses."

R. Betti, A. R. Christopherson, A. Bose, K. M. Woo, J. Howard, K. S. Anderson, E. M. Campbell, J. A. Delettrez, V. N. Goncharov, F. J. Marshall, R. L. McCrory, S. P. Regan, T. C. Sangster, C. Stoeckl, W. Theobald, M. J. Edwards, R. Nora, B. K. Spears, and J. Sanz, "Status and Prospects for Burning Plasmas via Laser Fusion," 43rd IEEE International Conference on Plasma Science, Banff, Alberta, Canada, 19–23 June 2016 (invited).

The following presentations were made at the 15th Meeting of the Tritium Users Group, Southampton, UK, 21–22 June 2016:

W. T. Shmayda, "Tritium Interaction with Stainless Steel."

W. T. Shmayda, M. D. Wittman, J. L. Reid, and R. F. Earley, "Tritium Activities at the University of Rochester's Laboratory for Laser Energetics."

C. R. Stillman, P. M. Nilson, S. T. Ivancic, C. Mileham, I. A. Begishev, R. K. Junquist, and D. H. Froula, "A Streaked X-Ray Spectroscopy Platform for Rapidly Heated, Near-Solid Density Plasmas," 2016 DOE NNSA Stewardship Science Graduate Fellowship Program, Las Vegas, NV, 27–30 June 2016.

C. J. Forrest, V. Yu. Glebov, J. P. Knauer, P. B. Radha, S. P. Regan, T. C. Sangster, C. Stoeckl, W. U. Schroeder, J. A. Frenje, M. Gatu Johnson, M. W. Paris, G. Hale, and A. B. Zylstra, "Neutron-Induced Break-up Reaction Using Deuterium Fusion Neutrons at the Omega Laser Facility," 2016 R-Matrix Workshop on Methods and Applications, Santa Fe, NM, 27 June–1 July 2016.

The following presentations were made at the CEA-NNSA Workshop, Rochester, NY, 29–30 June 2016:

I. A. Begishev, J. Bromage, J. D. Zuegel, P. S. Datte, and S. T. Yang, "Record Fifth-Harmonic–Generation Efficiency Producing 211-nm Pulses Using Cesium Lithium Borate."

V. Yu. Glebov, R. Flight, C. J. Forrest, J. P. Knauer, S. P. Regan, M. H. Romanofsky, T. C. Sangster, and C. Stoeckl, "A New Microchannel-Plate Neutron Time-of-Flight Detector."

P. M. Nilson, F. Ehrne, C. Mileham, D. Mastrosimone, R. K. Jungquist, C. Taylor, R. Boni, J. Hassett, C. R. Stillman, S. T. Ivancic, D. J. Lonobile, R. W. Kidder, M. J. Shoup III, A. A. Solodov, C. Stoeckl, D. H. Froula, K. M. Hill, L. Gao, M. Bitter, P. Efthimion, and D. D. Meyerhofer, "High-Resolving-Power, Ultrafast Streaked X-Ray Spectroscopy on OMEGA EP."

W. Theobald, C. Sorce, M. Bedzyk, F. J. Marshall, C. Stoeckl, S. P. Regan, T. Hilsabeck, J. D. Kilkenny, D. Morris, M. Chung, J. Hares, A. Dymoke-Bradshaw, P. Bell, J. Celeste, A. Carpenter, M. Dayton, D. K. Bradley, M. C. Jackson, L. Pickworth, S. Nagel, G. Rochau, J. Porter, M. Sanchez, L. Claus, G. Robertson, and Q. Looker, "Conceptual Design of a Single-Line-of-Sight Resolved X-Ray Imager on OMEGA."

V. N. Goncharov, S. P. Regan, E. M. Campbell, T. C. Sangster, P. B. Radha, J. F. Myatt, D. H. Froula, R. Betti, T. R. Boehly, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, V. Yu. Glebov, D. R. Harding, S. X. Hu, I. V. Igumenshchev, F. J. Marshall, R. L. McCrory, D. T. Michel, W. Seka, A. Shvydky, C. Stoeckl, W. Theobald, and M. Gatu-Johnson, "National Direct-Drive Program on OMEGA and the National Ignition Facility," 43rd European Physical Society Conference on Plasma Physics, Leuven, Belgium, 4–8 July 2016 (invited).

D. Polsin, T. R. Boehly, J. A. Delettrez, M. C. Gregor, C. A. McCoy, B. Henderson, D. E. Fratanduono, R. Smith, R. Kraus, J. H. Eggert, R. Collins, F. Coppari, and P. M. Celliers, "Observation of Solid-Solid Phase Transitions in Pump-Compressed Aluminum," High-Pressure Research, Holderness, NH, 17–22 July 2016.

J. B. Oliver, C. Smith, B. Taylor, J. Spaulding, S. MacNally, and T. Shea, "Characterization of Glancing-Angle–Deposited Magnesium Oxide Films," Novel Optical Materials and Applications, Vancouver, British Columbia, Canada, 18–20 July 2016.

D. H. Froula, P. M. Nilson, S. T. Ivancic, C. R. Stillman, C. Mileham, I. A. Begishev, A. A. Solodov, R. K. Jungquist, R. Boni, D. Hassett, C. Stoeckl, W. Theobald, F. Ehrne, D. Mastrosimone, D. Nelson, C. Taylor, D. J. Lonobile, R. W. Kidder, M. J. Shoup III, K. W. Hill, L. Gao, M. Bitter, and P. C. Efthimion, "Understanding the Material Response to Powerful Energy Fluxes Driven by Picosecond Lasers at the Laboratory for Laser Energetics," JOWOG37, Aldermaston, UK, 18–22 July 2016.

J. D. Zuegel, J. Bromage, E. M. Campbell, W. Krupke, T. Y. Fan, D. H. Martz, P. Reeves-Hall, and W. Leemans, "High-Average-Power, Ultra-Intense Laser Technology for Laser-Plasma Acceleration," 17th Advanced Accelerator Concepts Workshop, National Harbor, MD, 31 July–5 August 2016.

W. T. Shmayda, J. Ulreich, R. Earley, and M. D. Wittman, "Filling Inertial Confinement Fusion Targets with DT Using Palladium Tritide," The 22nd Topical Meeting on the Technology of Fusion Energy (TOFE 2016), Philadelphia, PA, 22–25 August 2016.

W. R. Donaldson, J. Katz, T. Z. Kosc, J. H. Kelly, E. M. Hill, and R. E. Bahr, "Enhancements to the Timing of the OMEGA Laser System to Improve Illumination Uniformity," 2016 Optical Engineering and Applications, San Diego, CA, 28 August–1 September 2016.

E. M. Campbell, "Symmetric Illumination and Direct Drive at the National Ignition Facility," Symmetric Direct-Drive Study, Livermore, CA, 7–8 September 2016.

The following presentations were made at the 7th International Conference on Ultrahigh Intensity Lasers, Montebello, Quebec, Canada, 11–16 September 2016:

S.-W. Bahk, J. B. Oliver, R. K. Jungquist, J. Bromage, E. M. Schiesser, and J. P. Rolland "Beam-Transport Systems for Ultra-Broadband Lasers."

I. A. Begishev, S.-W. Bahk, R. Cuffney, C. Dorrer, D. Haberberger, D. H. Froula, C. Mileham, P. M. Nilson, C. Stoeckl, J. D. Zuegel, and J. Bromage, "Extensions to the Multi-Terawatt Laser for Laser Development and Plasma Physics Studies."

S. Bucht, D. Haberberger, J. Bromage, and D. H. Froula, "Transforming the Idler-to-Seed Raman Amplification."

C. Dorrer, L. J. Waxer, A. Kalb, E. M. Hill, and J. Bromage, "Temporal Characterization of Optical Pulses by Spectral Phase Diversity."

D. Haberberger, A. Davies, S. Bucht, J. Bromage, J. D. Zuegel, D. H. Froula, R. Trines, R. Bingham, and P. A. Norreys, "Plans for a Tunable Raman Amplifier at The Laboratory for Laser Energetics."

R. Betti, "Status and Prospects for Demonstrating Ignition via Laser Fusion," The 3rd International Conference on High Energy Density Physics (ICHEDP-3), Shenzhen, China, 23–26 September 2016.

The following presentations were made at the XLVIII Annual Symposium on Optical Materials for High-Power Lasers, Boulder, CO, 25–28 September 2016:

S. G. Demos, C. W. Carr, and D. A. Cross, "Electrostatic Effects Following Irradiation of Fused Silica Surfaces with Nanosecond Laser Pulses."

A. A. Kozlov, S. Papernov, J. B. Oliver, A. L. Rigatti, B. Taylor, B. Charles, and C. Smith, "Study of the Picosecond Laser Damage in HfO_2/SiO_2-Based Thin-Film Coatings in Vacuum."