Publications and Conference Presentations

Publications

D. H. Barnak, J. R. Davies, R. Betti, M. J. Bonino, E. M. Campbell, V. Yu. Glebov, D. R. Harding, J. P. Knauer, S. P. Regan, A. B. Sefkow, A. J. Harvey-Thompson, K. J. Peterson, D. B. Sinars, S. A. Slutz, M. R. Weis, P.-Y. Chang, "Laser-Driven Magnetized Liner Inertial Fusion on OMEGA," Phys. Plasmas **24**, 056310 (2017) (invited).

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A. B. Zylstra, H.-S. Park, J. S. Ross, F. Fiuza, J. A. Frenje, D. P. Higginson, C. Huntington, C. K. Li, R. D. Petrasso, B. Pollock, B. Remington, H. G. Rinderknecht, D. Ryutov, F. H. Séguin, D. Turnbull, and S. C. Wilks, "Proton Pinhole Imaging on the National Ignition Facility," Rev. Sci. Instrum. **87**, 11E704 (2016).

Conference Presentations

Y. Zhao and W. R. Donaldson, "Materials Properties Characterization and Device Simulation on a Nonuniform Al Component $A1_xGa_{1-x}N$ Metal–Semiconductor–Metal Photodetector," presented at the International Workshop on Nitride Semiconductors, Orlando, FL, 2–7 October 2016.

The following presentations were made at the Industrial Associates Fall Meeting 2016, Rochester, NY, 9–12 October 2016:

Y. Li and C. Dorrer, "Wavefront-Aberration Correction Using Binary Amplitude and Polarization Modulation."

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, "Spectral Splitting of Optical Pulses Inside a Dispersive Medium at a Temporal Boundary."

E. M. Campbell, J. Bromage, J. D. Zuegel, S. G. Demos, D. H. Froula, D. Haberberger, B. Krupke, P. A. Norreys, J. Sadler, B. Bingham, N. Fisch, and W. Leemans, "High-Peak-Power Laser Research at the Laboratory for Laser Energetics and the Pathway to a 100-Petawatt-Class Laser," presented at Nuclear Photonics 2016, Monterey, CA, 16–21 October 2016.

The following presentations were made at Frontiers in Optics, Rochester, NY, 17–21 October 2016:

S. G. Demos, B. N. Hoffman, T. J. Kessler, M. D. Feit, R. A. Negres, C. W. Carr, D. A. Cross, J. Bude, and A. M. Rubenchik, "Transient Modulation of Refractive Index Under Exposure to High-Power Laser Pulses" (invited).

T. Z. Kosc, "Steve Jacobs: The Optics Outreach Innovator."

Y. Li and C. Dorrer, "Wavefront-Aberration Correction Using Binary Amplitude and Polarization Modulation."

K. L. Marshall, "Thirty-Five Years of Liquid Crystal Research at the Laboratory for Laser Energetics: From Laser Fusion to Electronic Paper" (invited).

B. W. Plansinis, G. P. Agrawal, and W. R. Donaldson, "Removing Pulse Jitter with Temporal Waveguides."

J. M. Schoen, "History of the Center for Optics Manufacturing" (invited).

K. A. Sharma, T. A. Germer, C. Smith, J. D. Zuegel, J. B. Oliver, and T. G. Brown, "Scattered-Light Analysis of Birefringent Coatings for Distributed Polarization Rotators."

The following presentations were made at the 37th Tritium Focus Group Meeting, Rochester, NY, 25–27 October 2016:

T. Burke, M. Sharpe, and W. T. Shmayda, "Tritium in Targets Measured by an X-Ray Detection System."

C. Fagan, M. Sharpe, W. T. Shmayda, and W. U. Schröder, "The Effect of Surface Modifications on Tritium Adsorption and Absorption by Stainless Steel (316)."

M. Sharpe, C. Fagan, and W. T. Shmayda, "Influence of the Water Layers Adsorbed onto Stainless-Steel 316 on Tritium Migration."

W. T. Shmayda, "Properties of DT Ice in Cryotargets."

M. D. Wittman, N. P. Redden, D. R. Harding, W. T. Shmayda, A. Agliata, C. Rees, R. Chapman, R. F. Earley, J. Magoon, M. J. Shoup III, C. Taylor, R. Taylor, J. Ulreich, C. Abbott, T. Lewis, M. H. Romanofsky, J. Szczepanski, J. Konzel, S. Reber, D. J. Lonobile, and J. L. Reid, "Cryogenic Fill-Tube Target Facility for Evaluating DT-Filled National Ignition Facility and OMEGA-Scale Cryogenic Targets."

T. Petersen, J. Bromage, and J. D. Zuegel, "High-Average-Power, 2-μm Femtosecond Optical Parametric Oscillator Synchronously Pumped by a Thin-Disk, Mode-Locked Laser," presented at the Advanced Solid State Lasers Conference, Boston, MA, 30 October–3 November 2016.

The following presentations were made at the 58th Annual Meeting of the APS Division of Plasma Physics, San Jose, CA, 31 October–4 November 2016:

K. S. Anderson, P. W. McKenty, A. Shvydky, J. P. Knauer, T. J. B. Collins, P. B. Radha, F. Weilacher, and M. M. Marinak, "Three-Dimensional Analysis of the Effects of Low-Mode Asymmetries on OMEGA Cryogenic Implosions."

D. H. Barnak, R. Betti, M. J. Bonino, E. M. Campbell, J. R. Davies, V. Yu. Glebov, D. R. Harding, J. P. Knauer, S. P. Regan, A. B. Sefkow, A. J. Harvey-Thompson, K. J. Peterson, D. B. Sinars, S. A. Slutz, and M. R. Weis, "Magnetized Liner Inertial Fusion on OMEGA" (invited).

R. Betti, J. P. Knauer, A. V. Maximov, T. J. B. Collins, C. Stoeckl, A. Bose, J. Woo, A. R. Christopherson, A. Shvydky, W. Theobald, J. A. Delettrez, F. J. Marshall, P. B. Radha, S. P. Regan, E. M. Campbell, W. Shang, W. Seka, and S. X. Hu, "The 1-D Campaign on OMEGA: A Systematic Approach to Find the Optimum Path to Ignition."

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."

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

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

D. Cao, P. W. McKenty, J. P. Knauer, and D. R. Harding, "Investigation of Acquired Fuel Motion Caused by Ice Roughness in OMEGA Cryogenic Experiments."

A. R. Christopherson, R. Betti, W. Theobald, C. J. Forrest, E. M. Campbell, J. Howard, J. A. Delettrez, C. Stoeckl, D. H. Edgell, W. Seka, V. Yu. Glebov, A. K. Davis, A. Bose, A. V. Maximov, M. S. Wei, and J. Peebles, "Direct Measurements of Hot-Electron Preheat in Inertial Confinement Fusion Implosions."

D. Clarkson, R. Ume, R. Sheets, S. P. Regan, T. C. Sangster, S. Padalino, and J. McLean, "Bulk Etch Rate and Swell Rate of CR-39."

T. J. B. Collins, R. Betti, A. Bose, A. R. Christopherson, V. N. Goncharov, J. P. Knauer, J. A. Marozas, F. J. Marshall, A. V. Maximov, D. T. Michel, A. Mora, P. B. Radha, S. P. Regan, W. Shang, A. Shvydky, C. Stoeckl, K. M. Woo, and G. Varchas, "Multidimensional Study of High-Adiabat OMEGA Cryogenic Experiments."

K. Cook, M. Coats, M. Yuly, S. Padalino, T. C. Sangster, and S. P. Regan, "Measurement of the 6He Decay Produced by the 9Be(n,α)6He Reaction."

R. S. Craxton, M. Hohenberger, W. E. Kehoe, F. J. Marshall, D. T. Michel, P. B. Radha, and M. J. Rosenberg, "Design of Platforms for Backlighting Spherical Implosions on OMEGA and the National Ignition Facility."

A. Davies, S. Bucht, J. Katz, D. Haberberger, I. A. Begishev, S.-W. Bahk, J. Bromage, J. D. Zuegel, D. H. Froula, J. D. Sadler, R. Trines, R. Bingham, and P. A. Norreys, "Picosecond Characterization of Underdense Plasmas for Studying Nonlinear Electron Plasma Wave Dynamics."

J. R. Davies, D. H. Barnak, R. Betti, E. M. Campbell, V. Yu. Glebov, J. P. Knauer, A. B. Sefkow, K. J. Peterson, D. B. Sinars, S. A. Slutz, and M. R. Weis, "Temperature Scaling for Magnetized Linear Inertial Fusion."

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

J. A. Delettrez, R. K. Follett, J. F. Myatt, and C. Stoeckl, "Evaluation of the Fast-Electron Source Function for Two-Plasmon Decay from the Temporal Hard X-Ray Emission."

D. H. Edgell, R. K. Follett, J. Katz, J. F. Myatt, J. G. Shaw, and D. H. Froula, "Three-Dimensional Modeling of Polarization Effects on Cross-Beam Energy Transfer in OMEGA Implosions."

R. Epstein, C. Stoeckl, V. N. Goncharov, P. W. McKenty, S. P. Regan, S. X. Hu, and I. V. Igumenshchev, "Simulation and Analysis of Time-Resolved Narrowband Radiographs of Cryogenic Implosions on OMEGA."

R. K. Follett, D. H. Edgell, D. H. Froula, V. N. Goncharov, I. V. Igumenshchev, J. G. Shaw, and J. F. Myatt, "Comparing Ray-Based and Wave-Based Models of Cross-Beam Energy Transfer."

C. J. Forrest, V. Yu. Glebov, V. N. Goncharov, J. P. Knauer, P. B. Radha, S. P. Regan, M. J. Rosenberg, T. C. Sangster, W. T. Shmayda, C. Stoeckl, and M. Gatu Johnson, "Measurements of Fusion Reaction Yield Ratios in Ignition-Relevant Direct-Drive Cryogenic Deuterium–Tritium Implosions."

D. H. Froula, D. Turnbull, D. H. Edgell, R. K. Follett, J. F. Myatt, T. J. Kessler, T. C. Sangster, M. Campbell, P. Michel, J. Weaver, and S. P. Obenschain, "Focused Cross-Beam Energy Transfer Experiments on OMEGA."

M. K. Ginnane, B. Kousar, J. Slish, K. Palmisano, S. Mandanas, S. J. Padalino, T. C. Sangster, S. P. Regan, C. Mileham, and C. Stoeckl, "TNSA Heavy Ion Measurements Using the Time-Resolved Tandem Faraday Cup."

V. Yu. Glebov, D. H. Barnak, J. R. Davies, J. P. Knauer, C. Stoeckl, R. Betti, S. P. Regan, T. C. Sangster, and E. M. Campbell, "Neutron Measurements in Laser-Driven Magnetized Liner Inertial Fusion Experiments on OMEGA."

V. N. Goncharov, T. J. B. Collins, J. A. Marozas, S. P. Regan, E. M. Campbell, D. H. Froula, I. V. Igumenshchev, R. L. McCrory, J. F. Myatt, P. B. Radha, T. C. Sangster, and A. Shvydky, "High-Performance Cryogenic Designs for OMEGA and the National Ignition Facility."

M. C. Gregor, T. R. Boehly, G. W. Collins, R. Rygg, D. N. Polsin, B. J. Henderson, D. E. Fratanduono, P. M. Celliers, T. Braun, J. H. Eggert, C. A. McCoy, and D. D. Meyerhofer, "The Shock and Release Behavior of Diamond Compressed to 25 Mbar" (invited).

D. Haberberger, A. Davies, S. Bucht, J. Bromage, J. D. Zuegel, D. H. Froula, R. Trines, R. Bingham, P. A. Norreys, and J. Sadler, "Tunable Plasma-Wave Laser Amplifier."

L. Hao, R. Yan, J. Li, and C. Ren, "Development of a New Fluid Code to Study Laser-Plasma Instabilities."

H. Harrison, H. Seppala, H. Visca, P. Wakwella, K. Fletcher, S. Padalino, C. J. Forrest, S. P. Regan, and T. C. Sangster, "Characterizing Neutron Diagnostics on the nTOF Line at SUNY Geneseo."

B. Henderson, T. R. Boehly, S. X. Hu, M. C. Gregor, D. N. Polsin, R. Rygg, G. W. Collins, D. E. Fratanduono, R. Kraus, J. H. Eggert, and P. M. Celliers, "Hugoniot Measurements of Silicon Shock Compressed to 25 Mbar."

M. Hohenberger, J. A. Marozas, P. W. McKenty, M. J. Rosenberg, P. B. Radha, D. Cao, J. P. Knauer, S. P. Regan, M. W. Bowers, J.-M. Di Nicola, G. Erbert, B. J. MacGowan, L. J. Pelz, and S. T. Yang, "Experimental Investigation of Cross-Beam Energy Transfer Mitigation via Wavelength Detuning in Directly Driven Implosions at the National Ignition Facility."

S. X. Hu, D. T. Michel, A. K. Davis, R. Betti, P. B. Radha, V. N. Goncharov, E. M. Campbell, D. H. Froula, C. Stoeckl, "Understanding Laser-Imprint Effects on Plastic-Target Implosions on OMEGA with New Physics Models."

I. V. Igumenshchev, D. T. Michel, R. C. Shah, E. M. Campbell, R. Epstein, C. J. Forrest, V. Yu. Glebov, V. N. Goncharov, J. P. Knauer, F. J. Marshall, R. L. McCrory, S. P. Regan, T. C. Sangster, C. Stoeckl, A. J. Schmitt, and S. P. Obenschain, "Three-Dimensional Hydrodynamic Simulations of OMEGA Implosions" (invited).

J. P. Knauer, S. X. Hu, V. N. Goncharov, and D. Haberberger, "Density Profile of a Foil Accelerated by Laser Ablation."

J. Li, R. Yan, and C. Ren, "Density-Modulation-Induced Absolute Laser-Plasma Instabilities in Inertial Confinement Fusion."

J. A. Marozas, M. J. Rosenberg, P. B. Radha, F. J. Marshall, W. Seka, D. Cao, P. W. McKenty, T. C. Sangster, S. P. Regan, V. N. Gonvharov, E. M. Campbell, R. L. McCrory, M. Hohenberger, M. W. Bowers, J.-M. Di Nicola, G. Erbert, B. J. MacGowan, L. J. Pelz, and S. T. Yang, "Wavelength Detuning Cross-Beam Energy Transfer Mitigation for Polar and Symmetric Direct Drive."

A. V. Maximov, H. Wen, J. F. Myatt, R. W. Short, W. Seka, M. J. Rosenberg, and C. Ren, "Laser–Plasma Interaction Near the Quarter-Critical Density in Direct-Drive Inertial Confinement Fusion."

P. W. McKenty, D. Cao, T. J. B. Collins, A. Shvydky, and K. S. Anderson, "Evaluations of Long-Wavelength Perturbations in OMEGA 80-Gbar Cryogenic Implosions."

D. T. Michel, S. X. Hu, A. K. Davis, E. M. Campbell, R. S. Craxton, 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 Decompression in Direct-Drive Implosions on OMEGA."

J. F. Myatt, J. G. Shaw, R. K. Follett, D. H. Edgell, V. N. Goncharov, J. Bates, and J. Weaver, "A Wave-Based Model for Cross-Beam Energy Transfer in Direct-Drive Inertial Confinement Fusion Implosions" (invited).

P. M. Nilson, F. Ehrne, C. Mileham, D. Mastrosimone, R. K. Junquist, 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. W. Hill, L. Gao, M. Bitter, P. Efthimion, and D. D. Meyerhofer, "High-Resolving-Power, Ultrafast Streaked X-Ray Spectroscopy on OMEGA EP."

A. Pak, "Shock-Wave Acceleration of Protons on OMEGA EP."

D. N. Polsin, T. R. Boehly, J. A. Delettrez, G. W. Collins, R. Rygg, M. C. Gregor, B. Henderson, C. A. McCoy, D. E. Fratanduono, R. Smith, R. Kraus, J. H. Eggert, F. Coppari, and P. M. Celliers, "Observation of Solid–Solid Phase Transitions in Ramp-Compressed Aluminum."

P. B. Radha, M. Hohenberger, J. A. Marozas, F. J. Marshall, M. J. Rosenberg, W. Seka, E. M. Campbell, D. H. Edgell, V. N. Goncharov, R. L. McCrory, P. W. McKenty, S. P. Regan, T. C. Sangster, J. D. Moody, H. Sio, J. A. Frenje, B. Lahmann, and R. D. Petrasso, "Signatures of Cross-Beam Energy Transfer Mitigation in Proof-of-Principle National Ignition Facility Direct-Drive Experiments."

S. P. Regan, V. N. Goncharov, R. Epstein, D. Cao, I. V. Igumenshchev, S. X. Hu, K. S. Anderson, R. Betti, M. J. Bonino, E. M. Campbell, T. J. B. Collins, C. J. Forrest, V. Yu. Glebov, D. R. Harding, J. A. Marozas, F. J. Marshall, P. W. McKenty, D. T. Michel, P. B. Radha, T. C. Sangster, C. Stoeckl, M. Schoff, R. Luo, and M. Farrell, "Hydrodynamic Mixing of Ablator Material into the Compressed Fuel and Hot Spot of Direct-Drive DT Cryogenic Implosions."

M. J. Rosenberg, F. H. Séguin, J. A. Frenje, H. Sio, M. Gatu Johnson, N. Sinenian, C. K. Li, R. D. Petrasso, P. W. McKenty, I. V. Igumenshchev, J. R. Rygg, V. Yu. Glebov, C. Stoeckl, W. Seka, F. J. Marshall, J. A. Delettrez, R. Betti, V. N. Goncharov, P. B. Radha, J. P. Knauer, T. C. Sangster, N. M. Hoffman, G. Kagan, A. Zylstra, H. W. Herrmann, R. E. Olson, D. D. Meyerhofer, H. G. Rinderknecht, P. A. Amendt, R. P. J. Town, S. Le Pape, M. Hohenberger, T. Ma, A. J. Mackinnon, S. C. Wilks, C. Bellei, D. T. Casey, O. L. Landen, J. D. Lindl, H.-S. Park, J. Pino, B. A. Remington, H. F. Robey, M. D. Rosen, A. Nikroo, S. Atzeni, W. Fox, and M. J.-E. Manuel, "Demonstration of Ion Kinetic Effects in Inertial Confinement Fusion Implosions and Investigation of Magnetic Reconnection Using Laser-Produced Plasmas" (invited).

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

W. Seka, M. J. Rosenberg, J. F. Myatt, A. A. Solodov, D. H. Edgell, R. W. Short, S. P. Regan, A. V. Maximov, P. Michel, C. S. Goyon, and J. D. Moody, "Stimulated Raman Scattering in Direct-Drive Inertial Confinement Fusion."

W. Shang, R. Betti, K. M. Woo, A. Bose, A. R. Christopherson, and S. X. Hu, "Two-Dimensional Simulations of Electron Shock Ignition at the Megajoule Scale."

J. L. Shaw, N. Lemos, L. D. Amorim, N. Vafaei-Najafabadi, K. A. Marsh, F. S. Tsung, W. B. Mori, and C. Joshi, "Direct Laser Acceleration of Electrons in a Laser Wakefield Accelerator with Ionization Injection."

R. Sheets, D. Clarkson, R. Ume, S. P. Regan, T. C. Sangster, S. Padalino, and J. Mclean, "Reduced Noise UV Enhancement of Etch Rates for Nuclear Tracks in CR-39."

R. W. Short, H. Wen, A. V. Maximov, J. F. Myatt, and W. Seka, "Relative Significance of the Stimulated Raman Scattering and Two-Plasmon–Decay Instabilities at Quarter-Critical Density."

A. Shvydky, M. Hohenberger, P. B. Radha, M. J. Rosenberg, K. S. Anderson, V. N. Goncharov, J. A. Marozas, F. J. Marshall,

P. W. McKenty, S. P. Regan, T. C. Sangster, J. M. Koning, M. M. Marinak, and L. Masse, "Three-Dimensional Evaluation of Laser Imprint in National Ignition Facility Multi-FM Smoothing by Spectral Dispersion Experiment."

A. A. Solodov, M. J. Rosenberg, J. F. Myatt, W. Seka, M. Hohenberger, R. Epstein, R. W. Short, J. G. Shaw, S. P. Regan, D. Turnbull, D. H. Froula, P. B. Radha, J. W. Bates, A. J. Schmitt, P. Michel, T. Chapman, J. D. Moody, J. E. Ralph, and M. A. Barrios, "Hot-Electron Generation at Direct-Drive Ignition-Relevant Plasma Conditions at the National Ignition Facility."

C. R. Stillman, P. M. Nilson, S. T. Ivancic, C. Mileham, I. A. Begishev, D. H. Froula, and I. E. Golovkin, "Picosecond Streaked K-Shell Spectroscopy of Near-Solid-Density Aluminum Plasmas."

C. Stoeckl, R. Epstein, R. Betti, W. Bittle, J. A. Delettrez, C. J. Forrest, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, I. V. Igumenshchev, D. W. Jacobs-Perkins, R. T. Janezic, J. H. Kelly, T. Z. Kosc, R. L. McCrory, D. T. Michel, C. Mileham, P. W. McKenty, F. J. Marshall, S. F. B. Morse, S. P. Regan, P. B. Radha, B. S. Rice, T. C. Sangster, M. J. Shoup III, W. T. Shmayda, C. Sorce, W. Theobald, J. Ulreich, M. D. Wittman, D. D. Meyerhofer, J. A. Frenje, M. Gatu Johnson, and R. D. Petrasso, "Monochromatic Backlighting of Direct-Drive Cryogenic DT Implosions on OMEGA" (invited).

W. Theobald, R. Betti, A. Bose, W. Seka, C. Stoeckl, A. Casner, F. N. Beg, E. Llor Aisa, X. Ribeyre, V. Tikhonchuk, M. S. Wei, M. Vu, M. Hoppe Jr., M. E. Schoff, R. J. Florido, and R. Mancini, "The Generation of Gigabar Pressures for High-Energy-Density Plasmas."

D. Turnbull, P. A. Michel, C. Goyon, B. B. Pollock, G. E. Kemp, T. Chapman, D. Mariscal, L. Divol, J. S. Ross, S. Patankar, and J. D. Moody, "Measuring the Refractive Index of a Laser-Plasma Optical System."

R. J. Ward, G. M. Brown, D. Ho, B. F. O. F Stockler, C. G. Freeman, S. J. Padalino, and S. P. Regan, "Heavy Ion Beams from an Alphatross Source for Use in Calibration and Testing of Diagnostics."

K. M. Woo, R. Betti, R. Yan, H. Aluie, A. Bose, D. X. Zhao, and V. Gopalaswamy, "Study of Yield and Pressure Degradation in Inertial Confinement Fusion."

R. Yan, E. Borwick, R. Betti, J. Li, W. Theobald, and C. Ren, "Particle-in-Cell Simulations of Nonlinear Laser–Plasma Interactions and Hot-Electron Generation in the Shock-Ignition Regime."

The following presentations were made at the 40th IEEE EDS Activities in Western New York Conference, Rochester, NY, 4 November 2016:

Y. Akbas, A. Jukna, L. Q. Zhang, Y. Almi, A. M. Song, I. Iñiguez-de-la-Torre, J. Mateos, T. González, T. Plecenik, P. Durina, A. Plecnik, G. Wicks, and R. Sobolewski, "Ultra-High Optical Responsivity of Semiconducting Asymmetric Nano-Channel Diodes."

G. Chen, R. Shrestha, A. Koroliov, A. Jukna, A. Amori, T. Krauss, Z. Staniszewski, E. Fray, A. Łaszcz, A. Czerwinski, M. C. Richter, and R. Sobolewski, "Characterization of Carbon Nanostructures Through THz Spectroscopy."

The following presentations were made at the Rochester Academy of Science 43rd Annual Fall Session, Rochester, NY, 12 November 2016:

C. Fagan, M. Sharpe, W. T. Shmayda, and W. U. Schröder, "The Effect of Surface Modifications on Tritium Adsorption and Absorption by Stainless-Steel 316."

M. Sharpe, C. Fagan, and W. T. Shmayda, "Influence of the Water Layers Adsorbed onto Stainless-Steel 316 on Tritium Migration."

B. P. Chock, D. R. Harding, and T. B. Jones, "Dispensing Surfactant-Containing Water Droplets Using Electrowetting," presented at the 2016 AIChE Annual Meeting, San Francisco, CA, 13–18 November 2016.

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. W. Hill, L. Gao, M. Bitter, P. Efthimion, and D. D. Meyerhofer, "High-Resolving-Power, Ultrafast Streaked X-Ray Spectroscopy on OMEGA EP," presented at the National Diagnostics Workshop, Livermore, CA, 29–30 November 2016.

The following presentations were made at the 2016 International Workshop on Radiative Properties of Hot Dense Matter, Santa Barbara, CA, 5–9 December 2016:

R. Epstein, C. Stoeckl, V. N. Goncharov, P. W. McKenty, F. J. Marshall, S. P. Regan, R. Betti, W. Bittle, D. D. Harding, S. X. Hu, I. V. Igumenshchev, D. W. Jacobs-Perkins, R. T. Janezic, J. H. Kelly, T. Z. Kosc, C. Mileham, S. F. B. Morse, P. B. Radha, B. S. Rice, T. C. Sangster, M. J. Shoup III, W. T. Shmayda, C. Sorce, J. Ulreich, and M. D. Wittman, "Simulation and Analysis of Time-Resolved Narrowband Radiographs of Cryogenic Implosions on OMEGA."

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

P. M. Nilson, G. Fiksel, C. Stoeckl, P. A. Jaanimagi, C. Mileham, W. Theobald, J. R. Davies, J. F. Myatt, A. A. Solodov, D. H. Froula, R. Betti, and D. D. Meyerhofer, "Streaked X-Ray Imaging of Ultrafast Ionization Fronts Inside a Metal."

C. R. Stillman, P. M. Nilson, S. T. Ivancic, C. Mileham, I. A. Begishev, D. H. Froula, and I. E. Golovkin, "Picosecond Time-Resolved Observations of Dense Plasma Line Shifts."

D. H. Froula, "Thomson Scattering in Laser-Produced Plasmas," presented at the Cornell Laboratory of Plasma Studies Seminar, Ithaca, NY, 7 December 2016.

D. H. Froula, "Laser–Plasma Instabilities: The Pathway to Understanding and Control," presented at the NNSA Seminar, Washington, DC, 13 December 2016.

T. C. Sangster, "The National Direct-Drive Program," Fusion Power Associates, Washington, DC, 13–14 December 2016.

S. G. Demos and R. W. Wood, "Simultaneous White-Light and Protoporphyrin-IX Fluorescence Imaging for Optimized Cystoscopic Detection of Non-Muscle-Invasive Bladder Cancer," SPIE Photonics West, San Francisco, CA, 28 January–2 February 2017.

The following presentations were made at the NIF and JLF User Group Meeting, Livermore, CA, 6–8 February 2017:

L. A. Ceurvorst, N. Ratan, M. F. Kasim, J. Sadler, P. A. Norreys, H. Habara, K. A. Tanaka, S. Zhang, M. S. Wei, S. Ivancic, D. H. Froula, and W. Theobald, "Channeling Optimization of High-Intensity Laser Beams in Millimeter-Scale Plasmas."

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

D. Turnbull, P. Michel, C. Goyon, G. E. Kemp, B. B. Pollock, T. Chapman, D. Mariscal, L. Divol, J. S. Ross, S. Patankar, J. D. Moody, D. H. Froula, D. H. Edgell, R. K. Follett, J. F. Myatt, and E. M. Campbell, "Refractive Index Seen by a Probe Beam Interacting with a Laser-Plasma System."

The following presentations were made at the IAEC–NNSA Meeting on Hydrodynamic Instabilities in HED Systems, Livermore, CA, 8–10 February 2017:

R. Betti, "Deceleration Phase Hydrodynamic Instabilities, Pressure Degradation from Low to High (Mid) Modes."

R. Betti, D. Barnak, J. Davies, M. J. Bonino, V. Glebov, and M. Campbell, "Magnetized Liner Inertial Fusion."

A. Shvydky, M. Hohenberger, P. B. Radha, M. J. Rosenberg, K. S. Anderson, V. N. Goncharov, J. A. Marozas, F. J. Marshall, P. W. McKenty, S. P. Regan, T. C. Sangster, J. M. DiNicola, J. M. Koning, M. M. Marinak, and L. Masse, "Hydrodynamic Instability Growth and Imprint Experiments at the National Ignition Facility."

D. R. Harding, B. P. Chock, N. D. Viza, T. B. Jones, Z. Bei, W. Wang, and M. Moynihan, "Next-Generation Lab-on-Chip Methods for Making Plastic Targets for Inertial Confinement Fusion Experiments," presented at the NNSA Technical Seminars, Washington, DC, 14 February 2017.

J. F. Myatt, "The Laser-Plasma Simulation Environment (*LPSE*): A Flexible Tool for the ICF and HEDP Communities," presented at the NNSA Technical Seminars, Washington, DC, 28 February 2017.

The following presentations were made at the 22nd Target Fabrication Meeting, Las Vegas, NV, 12–16 March 2017:

M. J. Bonino, M. D. Wittman, D. R. Harding, N. Satoh, and M. Takagi, "Characterization of Polystyrene Shells."

B. P. Chock, D. R. Harding, and T. B. Jones, "Extending the Digital Microfluidics Process to Form Emulsions Using Low-Surface-Energy Fluids."

J. M. García Figueroa and D. R. Harding, "Effect of High Ion and Electron Densities, and Substrate Temperature on the Properties of Glow-Discharge Polymer Films."

D. R. Harding, J. Ulreich, R. Chapman, M. D. Wittman, R. Taylor, C. Taylor, M. J. Bonino, R. Q. Gram, and N. P. Redden, "Improvements to the Target and Cryogenic Equipment to Increase the Hot-Spot Pressure in Implosions on OMEGA."

N. P. Redden, W. T. Shmayda, M. D. Wittman, J. L. Reid, R. F. Earley, J. Magoon, K. Heung, S. Xiao, T. Sessions, and S. Redd, "The Laboratory for Laser Energetics' Hydrogen Isotope Separation System."

S. P. Regan, V. N. Goncharov, T. C. Sangster, E. M. Campbell, R. Betti, T. Bernat, A. Bose, T. R. Boehly, M. J. Bonino, D. Cao, R. Chapman, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, D. H. Edgell, R. Epstein, M. Farrell, C. J. Forrest, J. A. Frenje, D. H. Froula, M. Gatu Johnson, C. Gibson, V. Yu. Glebov, A. Greenwood, D. R. Harding, M. Hohenberger, S. X. Hu, H. Huang, J. Hund, I. V. Igumenshchev, D. W. Jacobs-Perkins, R. T. 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, N. Petta, P. B. Radha, M. J. Mosenberg, A. J. Schmitt, M. J. Schmitt, M. Schoff, W. Seka, W. T. Shmayda, M. J. Shoup III, A. Shvydky, A. A. Solodov, C. Stoeckl, W. Sweet, C. Taylor, R. Taylor, W. Theobald, J. Ulreich, M. D. Wittman, K. M. Woo, and J. D. Zuegel, "The National Direct-Drive Program: OMEGA to the National Ignition Facility."

N. D. Viza and D. R. Harding, "Performance of Different 'Lab-on-Chip' Geometries for Making Double Emulsions for Polystyrene Shells."

M. D. Wittman, M. J. Bonino, C. Fella, and D. R. Harding, "Effect of Tritium-Induced Damage to Plastic Targets from High-Density D-T Permeation."

D. N. Polsin, T. R. Boehly, J. A. Delettrez, G. W. Collins, J. R. Rygg, M. C. Gregor, B. J. Henderson, C. A. McCoy, D. E. Fratanduono, R. F. Smith, R. G. Kraus, J. H. Eggert, F. Coppari, A. Jenei, D. C. Swift, and P. M. Celliers, "The First Observation of the bcc Phase in Compressed Aluminum," presented at the March APS Annual Meeting, New Orleans, LA, 13–17 March 2017.

The following presentations were made at the 13th Direct Drive and Fast Ignition Workshop, Salamanca, Spain, 22–24 March 2017:

S. P. Regan, V. N. Goncharov, T. C. Sangster, E. M. Campbell, R. Betti, T. Bernat, A. Bose, T. R. Boehly, M. J. Bonino, D. Cao, R. Chapman, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, D. H. Edgell, R. Epstein, M. Farrell, C. J. Forrest, J. A. Frenje, D. H. Froula, M. Gatu Johnson, C. Gibson, V. Yu. Glebov, A. Greenwood, D. R. Harding, M. Hohenberger, S. X. Hu, H. Huang, J. Hund, I. V. Igumenshchev, D. W. Jacobs-Perkins, R. T. 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, N. Petta, P. B. Radha, M. J. Rosenberg, A. J. Schmitt, M. J. Schmitt, M. Schoff, W. Seka, W. T. Shmayda, M. J. Shoup III, A. Shvydky, A. A. Solodov, C. Stoeckl, W. Sweet, C. Taylor, R. Taylor, W. Theobald, J. Ulreich, M. D. Wittman, K. M. Woo, and J. D. Zuegel, "The National Direct-Drive Program: OMEGA to the National Ignition Facility."

M. J. Rosenberg, A. A. Solodov, W. Seka, J. F. Myatt, S. P. Regan, A. V. Maximov, R. Epstein, T. J. B. Collins, V. N. Goncharov, R. W. Short, D. P. Turnbull, D. H. Froula, P. B. Radha, R. K. Follett, P. A. Michel, M. Hohenberger, T. Chapman, J. D. Moody, L. Masse, C. Goyon, M. A. Barrios, J. W. Bates, A. J. Schmitt, "Planar Laser–Plasma Interaction Experiments at Direct-Drive Ignition-Relevant Scale Lengths at the National Ignition Facility."

L. A. Ceurvorst, N. Ratan, M. F. Kasim, J. Sadler, P. A. Norreys, H. Habara, K. A. Tanaka, S. Zhang, M. S. Wei, S. Ivancic, D. H. Froula, and W. Theobald, "Channeling Optimization of High-Intensity Laser Beams in Millimeter-Scale Plasmas," presented at the 44th IOP Plasma Physics Conference, Oxford, UK, 3–6 April 2017.

A. Shramuk, J. Serafini, and R. Sobolewski, "Superconducting Single-Photon Detectors as Smart Sensors: Photon-Energy and Photon-Number Resolution," presented at the CEIS University Technology Showcase, Rochester, NY, 13 April 2017.

Y. Yiming, R. Shrestha, G. Chen, A. Jukna, and R. Sobolewski, "Optimization Analysis for THz Time-Domain Spectroscopy of Carbon Nanotubes," presented at the Undergraduate Research Expo, Rochester, NY, 21 April 2017.

The following presentations were made at SPIE Optics and Optoelectronics 2017, Prague, Czech Republic, 24–27 April 2017:

Y. Akbas, T. Plecenik, P. Ďurina, A. Plecenik, A. Jukna, G. Wicks, and R. Sobolewski, "Ultra-High Optical Responsivity of Semiconducting Asymmetric Nano-Channel Diodes for Photon Detection."

J. Kitaygorsky, W. Słysz, R. Shouten, S. Dorenbos, E. Reiger, V. Zwiller, and R. Sobolewski, "Amplitude Distributions of Dark Counts and Photon Counts in NbN Super Conducting Single-Photon Detectors Integrated with the HEMT Readout."

W. Lang, B. Aichner, G. Zechner, F. Jausner, A. Klimov, R. Puźniak, W. Słysz, M. Guziewicz, R. Kruszka, M. Węgrzecki, and R. Sobolewski, "Superconducting Order Parameter Fluctuations in NbN/NiCu and NbTiN/NiCu Bilayer Nanostripes for Photon Detection."

J. Serafini, S. Trivedi, D. Kochanowska, M. Witkowska-Baran, A. Mycielski, J. P. Knauer, and R. Sobolewski, "(Cd,Mg)Te and (Cd,Mn)Te Single Crystals for Time-Resolved Detection of X-Ray Photons."

J. D. Zuegel, "100-PW-Class Optical Parametric Chirped-Pulse Amplification: Prospects and Challenges."

The following presentations were made at the Ninth Omega Laser Facility Users Group Workshop, Rochester, NY, 26–28 April 2017:

C. Dorrer, A. Kalb, W. Bittle, J. Bromage, R. Cuffney, E. Hill, and L. Waxer, "The Ultrafast Temporal Diagnostic Upgrade Will Provide Improved On-Target Short-Pulse Shape Predictions on OMEGA EP."

J. Katz, M. Bedzyk, D. H. Edgell, C. Rogoff, M. Sickles, J. Szczepanski, D. Turnbull, D. Wiener, and D. H. Froula, "Characterization of Ultrafast Gated Optical Imagers for the OMEGA Beamlets Diagnostic."

S. F. B. Morse, "Omega Laser Facility OLUG 2017 Update: Progress on Recommendations and Items of General Interest."

S. L. Ramesh and K. L. Marshall, "Characterization of the Electrical Properties of Contaminated Dielectric Oils for Pulsed-Power Research."

A. T. Sorce, J. D. Kendrick, R. Boni, M. C. Gregor, D. N. Polsin, B. Saltzman, B. Henderson, J. Zou, M. Couch, C. M. Rogoff, and T. R. Boehly, "Recent Work to Improve the Omega Laser Facility's VISAR and Streaked Optical Pyrometer Diagnostics."

L. H. Xiao, R. S. Craxton, D. Barnak, and J. Davies, "Simulations of Laser-Driven Magnetized Liner Inertial Fusion."

W. Theobald, "Test Results and Progress of SLOS-TRXI on OMEGA," presented at the CEA-NNSA Joint Diagnostic Meeting, Salives, France, 3–4 May 2017.

The following presentations were made at CLEO 2017, San Jose, CA, 14–19 May 2017:

S.-W. Bahk, C. Dorrer, and J. Bromage, "Two-Dimensional Characterization of Spatiotemporal Coupling of Ultrashort Pulses Based on Chromatic Diversity."

C. Dorrer and J. Hassett, "High-Accuracy, Model-Based Laser Near-Field Beam Shaping."

C. Dorrer, A. Kalb, G. Gibney, A. Sharma, and S.-W. Bahk, "An Apodized-Imaged Hartmann Mask for Quantitative Wavefront Measurements in Laser Systems."

P. B. Radha, "Importance of Validated Equation-of State Models for Direct-Drive Inertial Confinement Fusion Designs," presented at the EOS Workshop, Rochester, NY, 31 May–2 June 2017.

The following presentations were made at the Sixth International Conference on High Energy Density Physics, Shirahama, Japan, 5–9 June 2017:

A. B. Sefkow, "Adventures in ICF and HEDP with Magnetic Fields."

A. B. Sefkow, J. M. Koning, M. R. Gomez, S. B. Hansen, K. Cochrane, C. Thoma, D. R. Welch, and M. M. Marinak, "Unprecedented Stability in Z-Pinch Implosions Due to Magnetic Fields and Plasma Physics."

The following presentations were made at the 47th Annual Anomalous Absorption Conference, Florence, OR, 11–16 June 2017:

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

A. Davies, S. Bucht, J. Katz, D. Haberberger, J. Shaw, D. Turnbull, I. A. Begishev, S.-W. Bahk, J. Bromage, J. D. Zuegel, D. H. Froula, J. Sadler, P. A. Norreys, R. Trines, and R. Bingham, "Picosecond Thermal Dynamics in an Underdense Plasma Measured with Thomson Scattering."

Y. H. Ding and S. X. Hu, "A First-Principles Equation-of-State Table of Beryllium for High-Energy-Density Plasma Simulations."

D. H. Edgell, R. K. Follett, I. V. Igumenshchev, J. F. Myatt, J. G. Shaw, and D. H. Froula, "Three-Dimensional Modeling of Cross-Beam Energy Transfer and Its Mitigation in OMEGA Implosions."

R. K. Follett, D. H. Edgell, D. H. Froula, V. N. Goncharov, I. V. Igumenshchev, J. G. Shaw, and J. F. Myatt, "Comparisons Between Ray- and Wave-Based Calculations of Cross-Beam Energy Transfer."

E. C. Hansen, D. H. Barnak, J. R. Davies, R. Betti, A. B. Sefkow, J. Peebles, V. Yu. Glebov, J. P. Knauer, E. M. Campbell, S. P. Regan, A. Harvery-Thompson, K. J. Peterson, D. B. Sinars, S. A. Slutz, A. Birkel, and C. K. Li, "Experiments and Simulations of Laser-Driven Magnetized Liner Inertial Fusion."

M. J. Rosenberg, A. A. Solodov, W. Seka, J. F. Myatt, P. Michel, S. P. Regan, M. Hohenberger, R. Epstein, A. V. Maximov, T. J. B. Collins, V. N. Goncharov, R. W. Short, D. Turnbull, R. K. Follett, D. H. Froula, P. B. Radha, T. Chapman, J. D. Moody, L. Masse, C. S. Goyon, J. W. Bates, and A. J. Schmitt, "Planar Laser–Plasma Interaction Experiments at Direct-Drive Ignition-Relevant Scale Lengths at the National Ignition Facility."

A. B. Sefkow, "Adventures in ICF and HEDP with Magnetic Fields."

A. B. Sefkow, J. M. Koning, M. R. Gomez, S. B. Hansen, K. Cochrane, C. Thoma, D. R. Welch, and M. M. Marinak,

"Unprecedented Stability in Z-Pinch Implosions Due to Magnetic Fields and Plasma Physics."

W. Seka, J. F. Myatt, P. Michel, M. J. Rosenberg, A. A. Solodov, T. Chapman, S. P. Regan, R. W. Short, D. T. Michel, and R. K. Follett, "Observation of Stimulated Raman Scattering and Two-Plasmon–Decay Instabilities on OMEGA and the National Ignition Facility."

R. W. Short, A. V. Maximov, and W. Seka, "Absolute Stimulated Raman Sidescattering in Direct-Drive Irradiation Geometries."

A.A. Solodov, M. J. Rosenberg, J. F. Myatt, W. Seka, R. Epstein, R. W. Short, S. P. Regan, D. H. Froula, P. B. Radha, V. N. Goncharov, J. W. Bates, A. J. Schmitt, P. Michel, M. Hohenberger, T. Chapman, and J. D. Moody, "Hot-Electron Generation at the Direct-Drive Ignition-Relevant Plasma Conditions at the National Ignition Facility."

D. Turnbull, D. H. Froula, T.J. Kessler, D. Haberberger, J. L. Shaw, A. Davies, S. Bucht, P. Michel, C. Goyon, G. E. Kemp, B. B. Pollock, T. Chapman, D. Mariscal, L. Divol, J. S. Ross, S. Patankar, J. D. Moody, E. Tubman, and N. Woolsey, "Plasma-Based Photonic Devices: Wave Plates, Polarizers, and Amplifiers."

The following presentations were made at the 16th International Superconductive Electronics Conference, Sorrento, Italy, 12–16 June 2017:

J. Kitaygorsky, R. Shouten, S. Dorenbos, E. Reiger, V. Zwiller, W. Słysz, and R. Sobolewski, "Photon-Energy and Photon-Number Resolution Capabilities of NbN Superconducting Single-Photon Detectors."

W. Lang, B. Aichner, G. Zechner, F. Jausner, R. Puzniak, A. Klimov, W. Słysz, M. Guziewicz, R. Kruszka, M. Wegrzecki, and R. Sobolewski, "Superconducting Fluctuations and Magnetic Properties of NbN/NiCu and NbTiN/NiCu Bilayer Nanostructures for Photon Detection."

C. R. Stillman, P. M. Nilson, S. T. Ivancic, I. E. Golovkin, C. Mileham, I. A. Begishev, and D. H. Froula, "Picosecond Time-Resolved Observations of Dense Plasma Shifts," presented at the Stewardship Science Graduate Fellowship Program Review, Albuquerque, NM, 18–23 June 2017.

S.-W. Bahk, C. Dorrer, and J. Bromage, "Two-Dimensional Single-Shot Characterization of Spatiotemporal Coupling of Ultrashort Pulses Using Chromatic Diversity," presented at OSA Imaging and Applied Optics Congress, San Francisco, CA, 26–29 June 2017.

J. F. Myatt, R. K. Follett, J. G. Shaw, A. A. Solodov, I. V. Igumenshchev, V. N. Goncharov, D. H. Edgell, D. H. Froula, T. J. Kessler, W. Seka, R. Betti, T. R. Boehly, M. J. Bonino, E. M. Campbell, T. J. B. Collins, R. S. Craxton, A. K. Davis, J. A. Delettrez, R. Epstein, C. J. Forrest, V. Yu. Glebov, D. R. Harding, S. X. Hu, R. T. Janezic, J. H. Kelly, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. T. Michel, P. B. Radha, M. Rosenberg, W. T. Shmayda, A. Shvydky, S. Skupsky, C. Stoeckl, W. Theobald, F. Weilacher, B. Yaakobi, P. Michel, T. Chapman, L. Masse, C. S. Goyon, J. E. Ralph, J. D. Moody, M. A. Barrios, O. A. Hurricane, M. Hohenberger, M. M. Marinak, R. Nora, M. Tabak, J. Bates, J. Weaver, M. Karasik, A. J. Schmitt, S. P. Obenschain, J. Hund, N Petta, M. Farrell, M Schoff, A. Greenwood, M. Schmitt, and R. Shah, "The Scaling of Laser–Plasma Instabilities in Direct-Drive Inertial Confinement Fusion from OMEGA to the National Ignition Facility," presented at the 44th EPS Conference on Plasma Physics, Belfast, Northern Ireland, 26–30 June 2017.

E. M. Schiesser, S.- W. Bahk, and J. P. Rolland, "Three Unobscured Reflective Relays for High-Power, Broadband Laser Beam Transport," presented at the International Optical Design Conference, Denver, CO, 9–13 July 2017.

The following presentations were made at the 20th Conference on Shock Compression of Condensed Matter, St. Louis, MO, 9–14 July 2017:

B. Henderson, D. N. Polsin, T. R. Boehly, M. C. Gregor, S. X. Hu, G. W. Collins, J. R. Rygg, D. E. Fratanduono, and P. M.

Celliers, "Hugoniot Measurements of Silicon Shock Compressed to 25 Mbar."

D. N. Polsin, T. R. Boehly, J. A. Delettrez, G. W. Collins, J. R. Rygg, M. C. Gregor, B. Henderson, C. A. McCoy, D. E. Fratanduono, R. F. Smith, R. G. Kraus, J. H. Eggert, F. Coppari, A. Jenei, D. C. Swift, and P. M. Celliers, "The First Observation of the bcc Phase in Aluminum Compressed to 559 GPa."

D. N. Polsin, T. R. Boehly, J. A. Delettrez, G. W. Collins, J. R. Rygg, M. C. Gregor, C. A. McCoy, B. J. Henderson, D. E. Fratandouno, R. Smith, R. Kraus, J. H. Eggert, F. Coppari, A. Jenei, D. C. Swift, and P. M. Celliers, "X-Ray Diffraction Experiments on Ramp-Compressed Aluminum at the National Ignition Facility and on OMEGA."

The following presentations were made at the 20th International Conference on Electron Dynamics in Semiconductors, Optoelectronics, and Nanostructures, Buffalo, NY, 17–21 July 2017:

Y. Akbas, G. R. Savich, A. Jukna, T. Plecenik, P. Ďurina, A. Plecenik, G. W. Wicks, and R. Sobolewski, "Low-Temperature Performance of Semiconducting Asymmetric Nano-Channel Diodes."

G. Chen, R. Shrestha, A. Amori, Z. Staniszewski, A. Jukna, A. Koroliov, C. Richter, M. El Fray, T. Krauss, and R. Sobolewski, "Terahertz Time-Domain Spectroscopy Characterization of Carbon Nanostructures Embedded in Polymer."

J. Serafini, S. B. Trivedi, D. Kochanowska, M. Witkowska-Baran, A. Mycielski, M. Guziewicz, R. Kruszka, W. Słysz, and R. Sobolewski, "Characterization of (Cd,Mg)Te and (Cd,Mn)Te Single Crystals in the THz Frequency Range Using Integrated Photoconductive and Electro-Optics Effects."

N. D. Viza, M. H. Romanofsky, and D. R. Harding, "Droplet-Based Microfluidic Approach for Producing Inertial Confinement Fusion Polymer Shells," presented at the 2nd Microfluidics Congress, Philadelphia, PA, 25–26 July 2016.

The following presentations were made at High Energy Density Science Summer School, La Jolla, CA, 30 July–11 August 2017:

D. A. Chin, P. M. Nilson, G. W. Collins, and J. R. Rygg, "Interpreting EXAFS Spectra: Toward Ramp-Compression Studies of Iron Oxide."

G. W. Collins, "Physics of Matter at Extreme Pressure."

Y. H. Ding, "A First-Principles Equation-of-State Table of Beryllium for High-Energy-Density Plasma Simulations."

V. Gopalaswamy, H. Zhang, R. Betti, R. Yan, and H. Aluie, "Finite-Amplitude Modes in the Ablative Rayleigh–Taylor Instability."

A. Hansen, "OMEGA Supersonic Gas-Jet Target System Characterization."

A. Kar, P. B. Radha, T. R. Boehly, D. H. Edgell, S. X. Hu, A. Shvydky, V. N. Goncharov, and S. P. Regan, "X-Ray Radiography of Laser-Driven Shocks for Inertial Confinement Fusion."

O. Mannion, and G. Grim, "Simulating Neutron Time of Flight Data."

A. L. Milder, and D. H. Froula, "Measuring Non-Maxwellian Distribution Functions Using Expanded Thomson Scattering."

S. Miller, J. Knauer, P. B. Radha, and V. N. Goncharov, "Studying Deceleration-Phase Rayleigh–Taylor Growth by Varying D:T Ratios in Gas-Filled Plastic Implosions."

M. Stoeckl and A. Kozlov, "Dependence of Readout Fade Rate on X-Ray Energy for $BaFBr_{0.85}I_{0.15}$:Eu Image Plates."

M. Zaghoo, R. J. Husband, and I. F. Silvera, "Striking Isotope Effect in Hydrogen Dissociation Under Pressure."

The following presentations were made at Liquid Crystals XXI, San Diego, CA, 6–10 August 2017:

K. L. Marshall, U. Kurumbail, A. Hosein, and M. Hanchett, "Computational Chemistry Modeling and Design of Photoswitchable Alignment Materials for Optically Addressable

Liquid Crystal Devices. II. Transition-State Modeling in Azobenzene and Spiropyran Oligomers."

K. L. Marshall, D. Saulnier, T. Z. Kosc, O. Didovets, and S. H. Chen, "Optically Robust Photoalignment Materials for Liquid Crystal Device Applications in the Near-UV Region."

J. Kendrick, R. Boni, and C. Sorce, "An Optically Passive Method that Rate Doubles 2-GHz Timing Fiducials," presented at SPIE Optical Engineering and Applications, San Diego, CA, 6–10 August 2017.

S. Bucht, D. Haberberger, J. Bromage, and D. H. Froula, "Transforming the Idler to Seed Raman Amplification," presented at the OSA Foundation Siegman International School on Lasers, Leon, Mexico, 6–11 August 2017.

J. L. Shaw, N. Lemos, L. D. Amorim, N. Vafaei-Najafabadi, K. A. Marsh, F. S. Tsung, W. B. Mori, C. Joshi, and D. H. Froula, "Direct Laser Acceleration of Electrons in a Laser Wakefield Accelerator with Ionization Injection," presented at the Laser Plasma Accelerator Workshop, Jeju Island, South Korea, 27 August–1 September, 2017.

The following presentations were made at the 2nd Asia-Pacific Symposium on Tritium Science, Livermore Valley, CA, 5–8 September 2017:

W. T. Shmayda, M. Sharpe, C. Fagan, and W. U. Schröder, "Adsorbed Water Influence on Tritium Migration into and out of 316 Stainless Steel."

W. T. Shmayda, M Sharpe, C. Fagan, and M. D. Wittman, "Tritium Operations at the University of Rochester's Laboratory for Laser Energetics."

The following presentations were made at the 10th International Conference on Inertial Fusion Sciences and Applications, Saint Malo, France, 11–15 September 2017:

R. Betti, J. P. Knauer, V. Gopalaswamy, D. Patel, K.-M. Woo, W. Shang, A. Bose, K. S. Anderson, T. J. B. Collins, V. Yu. Glebov, A. V. Maximov, C. Stoeckl, F. J. Marshall, E. M. Campbell, and S. P. Regan, "The One-Dimensional Cryogenic Implosion Campaign on the OMEGA Laser System."

D. H. Froula, D Turnbull, J. Bromage, E. M. Campbell, T. Chapman, A. Consentino, L. Divol, C. Dorrer, D. H. Edgell, R. K. Follett, A. Hansen, E. M. Hill, J. Katz, T. J. Kessler, B. E. Kruschwitz, J. Kwiatkowski, P. Michel, J. F. Myatt, J. C. Puth, T. C. Sangster, A. B. Sefkow, J. G. Shaw, M. J. Shoup III, and D. J. Strozzi, "Cross-Beam Energy Transfer Platform on OMEGA."

V. N. Goncharov, S. P. Regan, E. M. Campbell, T. C. Sangster, R. Betti, T. R. Boehly, M. J. Bonino, D. Cao, A. K. Davis, 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, F. J. Marshall, R. L. McCrory, D. T. Michel, J. F. Myatt, P. B. Radha, W. Seka, A. Shvydky, C. Stoeckl, and M. Gatu Johnson, "Understanding the Performance Limitations of Direct-Drive Implosions on OMEGA."

S. X. Hu, L. A. Collins, T. R. Boehly, G. W. Collins, P. B. Radha, E. M. Campbell, J. D. Kress, and V. N. Goncharov, "A Review of High-Energy-Density-Physics Studies for Inertial Confinement Fusion Applications."

P. B. Radha, J. A. Marozas, M. J. Rosenberg, D. Turnbull, T. R. Boehly, E. M. Campbell, T. J. B. Collins, D. H. Edgell, V. N. Goncharov, R. L. McCrory, D. T. Michel, S. P. Regan, T. C. Sangster, W. Seka, A. A. Solodov, A. Shvydky, B. J. MacGowan, J. DiNicola, M. Hohenberger, J. M. Moody, and M. Karasik, "Direct-Drive Experiments at the National Ignition Facility."

S. P. Regan, V. N. Goncharov, T. C. Sangster, E. M. Campbell, K. S. Anderson, R. Betti, T. R. Boehly, R. Boni, M. J. Bonino, 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, 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. Kruschwitz, 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, M. J. Rosenberg, W. Seka, R. Shah, W. T. Shmayda, R. W. Short, A. Shvydky, M. J. Shoup III, S. Skupsky, A. A. Solodov, C. Sorce, S. Stagnitto, C. Stoeckl, W. Theobald, D. Turnbull, J. Ulreich, M. D. Wittman, V. Gopalaswamy, J. D. Zuegel, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, H. Sio, B. Lahmann, P. Bell, S. Bhandarkar, D. K. Bradley, D. A. Callahan, A. Carpenter, D. T. Casey, J. Celeste, M. Dayton, S. N. Dixit, C. S. Goyon, M. Hohenberger, 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, R. J. Wallace, P. Wegner, M. Farrell, P. Fitzsimmons, C. Gibson, A. Greenwood, L. Carlson, T. Hilsabeck, H. Huang, J. D. Kilkenny, R. W. Luo, N. Rice, M. Schoff, W. Sweet, A. Tambazidis, T. Bernat, N. Petta, J. Hund, S. P. Obenschain, J. W. Bates, M. Karasik, A. J. Schmitt, J. Weaver, M. J. Schmitt, S. Hsu, G. Rochau, L. Claus, Q. Looker, J. Porter, G. Robertson, M. Sanchez, J. Hares, and T. Dymoke-Bradshaw, "The National Direct-Drive Inertial Confinement Fusion Program."

T. C. Sangster, J. D. Kilkenny, G. A. Rochau, and S. H. Batha, "The National Diagnostics Strategy in the US."

The following presentations were made at the 49th Annual Symposium on Optical Materials for High Power Lasers, Boulder, CO, 24–27 September 2017:

S. M. Gracewski, S. Boylan, J. C. Lambropoulos, J. B. Oliver, T. J. Kessler, and S. G. Demos, "Simulation of Internal Stress Waves Leading to Laser-Induced Damage in Multilayer Dielectric Gratings."

K. R. P. Kafka, S. Papernov, M. A. DeMarco, C. Hall, K. L. Marshall, B. Hoffman, and S. G. Demos, "Damage Performance Under 351-nm, Nanosecond Pulses of Magnetorheological Finishing-Polished Fused-Silica Samples Using Different Polishing Compounds and Postprocessing Methods."

T. Z. Kosc, K. L. Marshall, A. A. Kozlov, S. Papernov, and S. G. Demos, "Damage Resistance of Nematic Liquid Crystal Materials for Femtosecond to Nanosecond Pulse Lengths at 1053 nm."

A. A. Kozlov, S. Papernov, S. G. Demos, J. B. Oliver, A. L. Rigatti, B. Hoffman, and J. C. Lambropoulos, "Picosecond Pulse-Damage Mechanism of Hafnia-Silica High Reflectors Investigated by High-Resolution Microscopy."

S. Papernov, M. D. Brunsman, J. B. Oliver, B. Hoffman, A. A. Kozlov, S. G. Demos, A. Shvydky, F. Cavalcante, L. Yang, C. S. Menoni, B. Roshanzadeh, S. T. P. Boyd, L. A. Emmert, and W. Rudolph, "Characterization of Hafnium Oxide Thin Films with Varying Oxygen Content."

J. L. Shaw, N. Lemos, L. D. Amorim, N. Vafaei-Najafabadi, K. A. Marsh, F. S. Tsung, W. B. Mori, C. Joshi, and D. H. Froula, "Direct Laser Acceleration of Electrons in a Laser Wakefield Accelerator with Ionization Injection," presented at the 3rd European Advanced Accelerator Concepts Workshop, Biodola, Italy, 24–30 September 2017.

The following presentations were made at the 11th International Laser Operations Workshop, Rochester, NY, 26–28 September 2017:

M. Barczys, D. Canning, A. Consentino, C. Dorrer, M. J. Guardalben, E. M. Hill, S. Householder, B. E. Kruschwitz, J. Kwiatkowski, J. O'Sullivan, and L. J. Waxer, "Activation Strategy for a Tunable UV Beamline on OMEGA and OMEGA EP."

E. M. Hill, C. Dorrer, G. Balonek, R. Cuffney, J. H. Kelly, T. Z. Kosc, and M. Spilatro, "Advances in Pulse-Shaping Technology on OMEGA and OMEGA EP."

B. E. Kruschwitz, M. Barczys, A. Consentino, C. Dorrer, M. J. Guardalben, E. M. Hill, J. Kwiatkowski, D. Nelson, J. C. Puth, D. Turnbull, and L. J. Waxer, "Development of a Tunable UV Capability for Cross-Beam Energy Transfer Mitigation Studies in the OMEGA Target Chamber."

J. Kwiatkowski, M. Barczys, D. Canning, B. Ehrich, A. Kalb, B. E. Kruschwitz, N. Mahmutovic, and S. Stagnitto, "*In-Situ* Transmission Measurements of Optical Components Using a Ratiometer Technique."

G. Pien, W. J. Armstrong, and M. Krieger, "Use of CAD Data for Real-Time Target-Position Guidance and Geometry Validation."

J. Puth, S. F. B. Morse, M. Barczys, D. Canning, J. Kelly, B. E. Kruschwitz, S. Sampat, and S. Stagnitto, "The Omega Laser Facility: Status and Performance."

S. Sampat, J. H. Kelly, T. Z. Kosc, A. L. Rigatti, J. Kwiatkowski, W. R. Donaldson, M. H. Romanofsky, L. J. Waxer, R. Dean, and R. Moshier, "100-Gbar Power-Balance Activities on OMEGA."

L. J. Waxer, C. Dorrer, E. M. Hill, A. Kalb, and W. A. Bittle, "Development and Implementation of a Single-Shot Diagnostic for Characterizing 0.5- to 250-ps Pulses on OMEGA EP."

L. J. Waxer, M. Heimbueger, J. H. Kelly, S. F. B. Morse, D. Nelson, D. Weiner, and G. Weselak, "On-Shot Focal-Spot Characterization in the OMEGA Target Chamber."

L. E. Bukowski, "Shaping of Transverse Beam Profiles Through Optical Gain Media," presented at IONS Rochester 2017, Rochester, NY, 29 September–1 October 2017.