Publications and Conference Presentations

Publications

B. Beeman, A. G. MacPhee, J. R. Kimbrough, G. A. Lacaille, M. A. Barrios, J. Emig, J. R. Hunter, E. K. Miller, and W. R. Donaldson, "Mach-Zehnder Modulator Performance Using the Comet Laser Facility and Implications for Use on NIF," in *Target Diagnostics Physics and Engineering for Inertial Confinement Fusion*, edited by P. Bell and G. P. Grim (SPIE, Bellingham, WA, 2012), Vol. 8505, Paper 850507.

D. T. Casey, J. A. Frenje, F. H. Séguin, C. K. Li, M. J. Rosenberg, H. Rinderknecht, M. J.-E. Manuel, M. Gatu Johnson, J. C. Schaeffer, R. Frankel, N. Sinenian, R. A. Childs, R. D. Petrasso, V. Yu. Glebov, T. C. Sangster, M. Burke, and S. Roberts, "The Coincidence Counting Technique for Orders of Magnitude Background Reduction in Data Obtained with the Magnetic Recoil Spectrometer at OMEGA and the NIF," Rev. Sci. Instrum. **82**, 073502 (2011).

D. E. Fratanduono, T. R. Boehly, P. M. Celliers, M. A. Barrios, J. H. Eggert, R. F. Smith, D. G. Hicks, G. W. Collins, and D. D. Meyerhofer, "The Direct Measurement of Ablation Pressure Driven by 351-nm Laser Radiation," J. Appl. Phys. **110**, 073110 (2011).

D. H. Froula, D. T. Michel, I. V. Igumenshchev, S. X. Hu, B. Yaakobi, J. F. Myatt, D. H. Edgell, R. Follett, V. Yu. Glebov, V. N. Goncharov, T. J. Kessler, A. V. Maximov, P. B. Radha, T. C. Sangster, W. Seka, R. W. Short, A. A. Solodov, C. Sorce, and C. Stoeckl, "Laser–Plasma Interactions in Direct-Drive Ignition Plasmas," Plasma Phys. Control. Fusion **54**, 124016 (2012).

S. Hamel, L. X. Benedict, P. M. Celliers, M. A. Barrios, T. R. Boehly, G. W. Collins, T. Döppner, J. H. Eggert, D. R. Farley, D. G. Hicks, J. L. Kline, A. Lazicki, S. LePape, A. J. Mackinnon, J. D. Moody, H. F. Robey, E. Schwegler, and P. A. Sterne, "Equation of State of $CH_{1.36}$: First-Principles Molecular Dynamics Simulations and Shock-and-Release Wave Speed Measurements," Phys. Rev. B **86**, 094113 (2012).

N. L. Kugland, D. D. Ryutov, P-Y. Chang, R. P. Drake, G. Fiksel, D. H. Froula, S. H. Glenzer, G. Gregori, M. Grosskopf, M. Koenig, Y. Kuramitsu, C. Kuranz, M. C. Levy, E. Liang, J. Meinecke, F. Miniati, T. Morita, A. Pelka, C. Plechaty, R. Presura, A. Ravasio, B. A. Remington, B. Reville, J. S. Ross, Y. Sakawa, A. Spitkovsky, H. Takabe, and H.-S. Park, "Self-Organized Electromagnetic Field Structures in Laser-Produced Counter-Streaming Plasmas," Nat. Phys. **8**, 809 (2012).

O. Landoas, V. Yu. Glebov, B. Rossé, M. Briat, L. Disdier, T. C. Sangster, T. Duffy, J. G. Marmouget, C. Varignon, X. Ledoux, T. Caillaud, I. Thfoin, and J.-L. Bourgade, "Absolute Calibration Method for Laser Megajoule Neutron Yield Measurement by Activation Diagnostics," Rev. Sci. Instrum. **82**, 073501 (2011).

P. Loubeyre, S. Brygoo, J. Eggert, P. M. Celliers, D. K. Spaulding, J. R. Rygg, T. R. Boehly, G. W. Collins, and R. Jeanloz, "Extended Data Set for the Equation of State of Warm Dense Hydrogen Isotopes," Phys. Rev. B **86**, 144115 (2012).

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D. T. Michel, A. V. Maximov, R. W. Short, S. X. Hu, J. F. Myatt, W. Seka, A. A. Solodov, B. Yaakobi, and D. H. Froula, "Experimental Validation of the Two-Plasmon-Decay Common-Wave Process," Phys. Rev. Lett. **109**, 155007 (2012).

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S. Papernov, E. Shin, T. Murray, A. W. Schmid, and J. B. Oliver, "355-nm Absorption in HfO_2 and SiO_2 Monolayers with Embedded Hf Nanoclusters Studied Using Photothermal Heterodyne Imaging," in *Laser-Induced Damage in Optical Materials: 2012*, edited by G. J. Exarhos, V. E. Gruzdev, J. A. Menapace, D. Ristau, and M. J. Soileau (SPIE, Bellingham, WA, 2012), Vol. 8530, Paper 85301H.

S. P. Regan, K. Falk, G. Gregori, P. B. Radha, S. X. Hu, T. R. Boehly, B. J. B. Crowley, S. H. Glenzer, O. L. Landen, D. O. Gericke, T. Döppner, D. D. Meyerhofer, C. D. Murphy, T. C. Sangster, and J. Vorberger, "Inelastic X-Ray Scattering from Shocked Liquid Deuterium," Phys. Rev. Lett. **109**, 265003 (2012).

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J. R. Rygg, J. H. Eggert, A. E. Lazicki, F. Coppari, J. A. Hawreliak, D. G. Hicks, R. F. Smith, C. M. Sorce, T. M. Uphaus, B. Yaakobi, and G. W. Collins, "Powder Diffraction from Solids in the Terapascal Regime," Rev. Sci. Instrum. **83**, 113904 (2012).

W. Theobald, R. Nora, M. Lafon, A. Casner, X. Ribeyre, K. S. Anderson, R. Betti, J. A. Delettrez, J. A. Frenje, V. Yu. Glebov, O. V. Gotchev, M. Hohenberger, S. X. Hu, F. J. Marshall, D. D. Meyerhofer, T. C. Sangster, G. Schurtz, W. Seka, V. A. Smalyuk, C. Stoeckl, and B. Yaakobi, "Spherical Shock-Ignition Experiments with the 40 + 20-Beam Configuration on OMEGA," Phys. Plasmas **19**, 102706 (2012).

H. X. Vu, D. F. DuBois, J. F. Myatt, and D. A. Russell, "Hot-Electron Production and Suprathermal Heat Flux Scaling with Laser Intensity from the Two-Plasmon–Decay Instability," Phys. Plasmas **19**, 102703 (2012).

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Forthcoming Publications

V. N. Goncharov, "Cryogenic Deuterium and Deuterium–Tritium Direct-Drive Implosions on OMEGA," to be published in Laser–Plasma Interactions and Applications.

D. R. Harding and W. T. Shmayda, "Stress-Radiation–Induced Swelling in Plastic Capsules," to be published in Fusion Science and Technology.

D. R. Harding, M. D. Wittman, and D. H. Edgell, "Considerations and Requirements for Providing Cryogenic Targets for Direct-Drive Inertial Fusion Implosions at the National Ignition Facility," to be published in Fusion Science and Technology.

H. P. Howard, A. F. Aiello, J. G. Dressler, N. R. Edwards, T. J. Kessler, A. A. Kozlov, I. R. T. Manwaring, K. L. Marshall, J. B. Oliver, A. L. Rigatti, A. N. Roux, A. W. Schmid, N. P. Slaney, C. C. Smith, B. N. Taylor, and S. D. Jacobs, "Improving the Performance of High-Laser-Damage-Threshold, Multilayer Dielectric Pulse-Compression Gratings Through Low-Temperature Chemical Cleaning," to be published in Applied Optics.

I. V. Igumenshchev, D. H. Froula, D. H. Edgell, V. N. Goncharov, T. J. Kessler, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, T. C. Sangster, W. Seka, and S. Skupsky, "Laser-Beam Zooming to Mitigate Crossed-Beam Energy Losses in Direct-Drive Implosions," to be published in Physical Review Letters.

M. Lafon, X. Ribeyre, and G. Schurtz, "Optimal Conditions for Shock Ignition of Scaled Cryogenic DT Targets," to be published in Physics of Plasmas.

K. Mehrotra, H. P. Howard, S. D. Jacobs, and J. C. Lambropoulos, "Nanoindentation Probing of High-Aspect-Ratio Pillar Structures on Optical Multilayer Dielectric Diffraction Gratings," to be published in the Material Research Society Proceedings.

W. T. Shmayda, D. R. Harding, V. Veersteg, C. Kingsley, M. Hallgren, and S. J. Loucks, "Micron-Scaled Defects on Cryogenic Targets: An Assessment of Condensate Sources," to be published in Fusion Science and Technology.

Conference Presentations

The following presentations were made at the 24th IAEA Fusion Energy Conference, San Diego, CA, 8–13 October 2012:

R. Betti, "Theory of Ignition and Hydro-Equivalence for Inertial Confinement Fusion."

R. L. McCrory, D. D. Meyerhofer, R. Betti, T. R. Boehly, D. T. Casey, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, J. A. Frenje, D. H. Froula, M. Gatu-Johnson, V. Yu. Glebov, V. N. Goncharov, D. R. Harding, M. Hohenberger, S. X. Hu, I. V. Igumenshchev, T. J. Kessler, J. P. Knauer, C. K. Li, J. A. Marozas, F. J. Marshall, P. W. McKenty, T. Michel, J. F. Myatt, P. M. Nilson, S. J. Padalino, R. D. Petrasso, P. B. Radha, S. P. Regan, T. C. Sangster, F. H. Séguin, W. Seka, R. W. Short, O. Shvydky, S. Skupsky, J. M. Soures, C. Stoeckl, W. Theobald, B. Yaakobi, and J. D. Zuegel, "Progress Toward Polar-Drive Ignition for the NIF."

The following presentations were made at Frontiers in Optics 2012, Rochester, NY, 14–18 October 2012:

C. Dorrer, V. Bagnoud, I. A. Begishev, J. Bromage, A. Consentino, M. J. Guardalben, A. V. Okishev, J. Qiao, R. G. Roides, and J. D. Zuegel, "OPCPA Front End and Contrast Optimization for the OMEGA EP Kilojoule, Picosecond Laser."

C. Dorrer, K. L. Marshall, S. H. Chen, M. Vargas, M. Statt, C. Caggiano, S. K.-H. Wei, J. B. Oliver, P. Leung, K. Wegman, J. Boulé, Z. Zhao, S. Papernov, A. Rakhmann, and I. Jovanovic, "High-Damage-Threshold Beam Shaping Using Optically Patterned Liquid Crystal Devices."

T. Petersen and J. Bromage, "Intracavity Chirped-Pulse Amplification for High-Energy, Ultrafast Optical Parametric Oscillators."

J. P. Knauer, P.-Y. Chang, M. Hohenberger, G. Fiksel, F. J. Marshall, D. D. Meyerhofer, R. Betti, F. H. Séguin, and R. D. Petrasso, "Compressing Magnetic Fields with High-Energy Lasers," 14th International Conference on Megagauss Magnetic Field Generation and Related Topics, Maui, HI, 14–19 October 2012.

S. Papernov, "Mechanisms of Near-Ultraviolet, Nanosecond-Pulse Laser Damage in HfO_2/SiO_2–Based Multilayer Coatings," Frontiers of Optical Coatings, Hangzhou, China, 15–18 October 2012.

The following presentations were made at the 54th Annual Meeting of the APS Division of Plasma Physics, Providence, RI, 29 October–2 November 2012:

K. S. Anderson, R. Betti, P. W. McKenty, T. J. B. Collins, M. Hohenberger, W. Theobald, R. S. Craxton, J. A. Delettrez, M. Lafon, J. A. Marozas, R. Nora, S. Skupsky, and A. Shvydky, "A Polar-Drive Shock-Ignition Design for the National Ignition Facility" (invited).

R. Betti, R. Nora, M. Lafon, J. F. Myatt, C. Ren, R. Yan, J. Li, A. V. Maximov, D. H. Froula, W. Seka, K. S. Anderson, R. Epstein, J. A. Delettrez, S. X. Hu, P. M. Nilson, V. A. Smalyuk, and W. Theobald, "High-Z Ablator Targets for Direct-Drive ICF."

T. R. Boehly, V. N. Goncharov, S. X. Hu, J. A. Marozas, T. C. Sangster, and D. D. Meyerhofer, "The Growth of Surface Defects Driven by Shock Waves."

A. Bose, R. Betti, P.-Y. Chang, and J. R. Davies, "Non-Inertial Eulerian Hydrodynamic Code for ICF Implosion Simulations."

P.-Y. Chang, A. Agliata, D. H. Barnak, W. Bittle, G. Fiksel, D. Hassett, M. Hohenberger, D. Lonobile, M. J. Shoup III, C. Taylor, and R. Betti, "Experimental Platform for Magnetized HEDP Science at OMEGA."

T. J. B. Collins, J. A. Marozas, K. S. Anderson, V. N. Goncharov, P. W. McKenty, R. Betti, and S. Skupsky, "Optimization with *Telios* of the Polar-Drive Point Design for the National Ignition Facility."

R. S. Craxton, P. W. McKenty, P. A. Olson, D. H. Froula, D. T. Michel, S. Le Pape, and A. J. MacKinnon, "Optimization of Drive Uniformity in NIF Polar-Drive Implosions Using Gated X-Ray Self-Emission Images."

J. A. Delettrez, T. J. B. Collins, A. Shvydky, G. Moses, D. Cao, and M. M. Marinak, "Effect of Nonlocal Electron

Transport in Two Dimensions on the Symmetry of Polar-Drive–Ignition Targets."

D. H. Edgell, P. B. Radha, V. N. Goncharov, I. V. Igumenshchev, J. Marozas, J. F. Myatt, W. Seka, and D. H. Froula, "Modeling Cross-Beam Energy Transfer for Polar-Drive Experiments."

B. Eichman, W. Theobald, C. Stoeckl, C. Mileham, and T. C. Sangster, "Time-Resolved X-Ray Brightness Measurements from Short-Pulse Laser-Irradiated Thin Foils."

R. Epstein, S. P. Regan, R. L. McCrory, D. D. Meyerhofer, T. C. Sangster, J. L. Tucker, B. A. Hammel, L. J. Suter, H. Scott, D. A. Callahan, C. Cerjan, N. Izumi, M. H. Key, O. L. Landen, N. B. Meezan, B. A. Remington, I. E. Golovkin, J. J. MacFarlane, R. C. Mancini, and K. J. Peterson, "Spectroscopy of Mid-*Z* Shell Additives in Implosions at the National Ignition Facility."

G. Fiksel, V. A. Goncharov, D. D. Meyerhofer, T. C. Sangster, B. Yaakobi, M. J. Bonino, and V. A. Smalyuk, "Experimental Reduction of Laser Imprinting and Rayleigh–Taylor Growth in Spherically Compressed, Medium-*Z*–Doped Plastic Targets."

R. K. Follett, D. T. Michel, J. F. Myatt, S. X. Hu, B. Yaakobi, and D. H. Froula, "Thomson-Scattering Measurements of Ion-Acoustic Wave Amplitudes Driven by the Two-Plasmon–Decay Instablity."

C. J. Forrest, V. Yu. Glebov, J. P. Knauer, T. C. Sangster, C. Stoeckl, S. Gardner, K. S. Anderson, P. B. Radha, V. N. Goncharov, D. D. Meyerhofer, C. Morrison, D. Baldwin, and S. Padalino, "Modeling Cold Fusion Distributions Inferred from Elastically Scattered Neutrons in Layered Cryogenic DT Direct-Drive Implosions."

J. A. Frenje, D. T. Casey, M. Gatu-Johnson, C. K. Li, F. H. Séguin, R. D. Petrasso, R. Bionta, M. J. Edwards, S. H. Glenzer, O. L. Landen, A. J. MacKinnon, D. H. Munro, P. J. Springer, J. D. Kilkenny, V. Yu. Glebov, T. C. Sangster, and C. Stoeckl, "A Streak-Camera–Based Magnetic Recoil Spectrometer (SCMRS) for Measurements of $T_i(t)$, $Y_n(t)$, dsr(t) on OMEGA and the NIF."

D. H. Froula, B. Yaakobi, D. T. Michel, D. H. Edgell, R. K. Follett, W. Seka, C. Stoeckl, T. C. Sangster, A. A. Solodov, S. X. Hu, I. V. Igumenshchev, P. B. Radha, J. A. Delettrez, J. F. Myatt, R. W. Short, and V. N. Goncharov, "Two-Plasmon–Decay Electron-Divergence Measurements in Direct-Drive Implosions on OMEGA."

L. Gao, P. M. Nilson, I. V. Igumenshchev, S. X. Hu, J. R. Davies, C. Stoeckl, D. H. Froula, R. Betti, D. D. Meyerhofer, and M. G. Haines, "Magnetic-Field Generation by the Rayleigh–Taylor Instability in Planar Targets on OMEGA EP."

M. Gatu-Johnson, D. T. Casey, J. A. Frenje, C. K. Li, F. H. Séguin, R. D. Petrasso, V. Yu. Glebov, J. P. Knauer, T. C. Sangster, R. Bionta, M. J. Edwards, S. H. Glenzer, S. P. Hatchett, O. L. Landen, A. J. MacKinnon, D. McNabb, D. H. Munro, J. Pino, S. Sepke, P. J. Springer, and J. D. Kilkenny, "Measurements and Interpretation of TT and Down-Scattered DT Neutron Spectra on OMEGA and the NIF."

V. Yu. Glebov, C. Stoeckl, T. C. Sangster, C. Forrest, and R. A. Lerche, "Absolute Ion-Temperature Measurements in DD and DT Implosions on OMEGA."

V. N. Goncharov, T. C. Sangster, R. Epstein, S. X. Hu, I. V. Igumenshchev, D. H. Froula, R. L. McCrory, D. D. Meyerhofer, D. T. Michel, P. B. Radha, W. Seka, S. Skupsky, C. Stoeckl, D. T. Casey, J. A. Frenje, and M. Gatu-Johnson, "Improving Implosion Velocity in Cryogenic Deuterium–Tritium Implosions on OMEGA."

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

M. Hohenberger, W. Theobald, S. X. Hu, R. Betti, K. S. Anderson, T. R. Boehly, A. Casner, D. D. Meyerhofer, X. Ribeyre, T. C. Sangster, G. Schurtz, W. Seka, C. Stoeckl, and B. Yaakobi, "Shock-Ignition Studies in Planar Geometry on OMEGA."

S. X. Hu, V. N. Goncharov, and S. Skupsky, "Burning DT Plasmas with Ultrafast Soft X-Ray Pulses."

I. V. Igumenshchev, V. N. Goncharov, T. R. Boehly, T. C. Sangster, and S. Skupsky, "Fuel–Ablator Mix from Surface Nonuniformities in Directly Driven Implosions."

S. Ivancic, W. Theobald, R. Boni, D. H. Froula, S. X. Hu, and D. D. Meyerhofer, "Ray-Trace Simulations for the Optical 4ω Probe Diagnostic on OMEGA EP."

J. P. Knauer, "Neutron Spectroscopy at the National Ignition Facility" (invited).

M. Lafon, R. Nora, K. S. Anderson, and R. Betti, "Hydrodynamic Simulations of Direct-Drive Targets with Moderate-*Z* Ablators."

J. Li, R. Yan, C. Ren, A. V. Maximov, W. B. Mori, and F. S. Tsung, "Collisional Effects on Hot-Electron Generation in Two-Plasmon-Decay Instability in Inertial Confinement Fusion."

M. J.-E. Manuel, C. K. Li, F. H. Séguin, D. T. Casey, R. D. Petrasso, S. X. Hu, R. Betti, J. D. Hager, D. D. Meyerhofer, and V. A. Smalyuk, "Measurements of Rayleigh–Taylor-Induced Magnetic Fields During Linear and Nonlinear Growth Phases."

J. A. Marozas, T. J. B. Collins, D. H. Edgell, I. V. Igumenshchev, and J. F. Myatt, "Cross-Beam Energy Transfer with Additional Ion Heating Integrated into the 2-D Hydrodynamics Code *DRACO*."

F. J. Marshall, P. B. Radha, M. J. Bonino, J. A. Delettrez, R. Epstein, S. Skupsky, and E. Girladez, "Polar-Drive Experiments with Shimmed Targets on OMEGA."

A. V. Maximov, J. F. Myatt, R. W. Short, I. V. Igumenshchev, D. H. Edgell, and W. Seka, "Scattering of Multiple Crossing Laser Beams in Direct-Drive ICF Plasmas."

C. McCoy, T. R. Boehly, P. M. Nilson, T. J. B. Collins, T. C. Sangster, D. D. Meyerhofer, D. E. Fratanduono, P. M. Celliers, and D. G. Hicks, "The Release of Shocked Materials."

P. W. McKenty, R. S. Craxton, A. Shvydky, D. H. Froula, D. T. Michel, J. A. Marozas, T. C. Sangster, D. D. Meyerhofer, R. L. McCrory, J. D. Kilkenny, A. Nikroo, M. L. Hoppe, S. Le Pape, A. J. MacKinnon, and D. H. Munro, "Drive-Symmetry Studies of NIF Exploding-Pusher Experiments."

D. D. Meyerhofer, D. H. Froula, V. N. Goncharov, I. V. Igumenshchev, S. J. Loucks, P. W. McKenty, R. L. McCrory, P. B. Radha, and T. C. Sangster, "Polar-Drive–Ignition Experimental Plan on the NIF."

D. T. Michel, A. V. Maximov, R. W. Short, J. A. Delettrez, D. Edgell, S. X. Hu, I. V. Igumenshchev, J. F. Myatt, A. A. Solodov, C. Stoeckl, B. Yaakobi, and D. H. Froula, "Measured Hot-Electron Intensity Thresholds Quantified by a Two-Plasmon–Decay Gain in Various Experimental Configurations" (invited).

J. F. Myatt, J. Zhang, R. W. Short, A. V. Maximov, A. A. Solodov, W. Seka, D. H. Froula, B. Yaakobi, D. T. Michel, D. H. Edgell, D. F. DuBois, D. A. Russell, and H. X. Vu, "Mitigating Two-Plasmon–Decay Hot-Electron Generation Through the Modification of Langmuir and Ion-Acoustic Dissipation in Directly Driven Targets."

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, "Tracking Intense Flows of Energy Inside OMEGA EP Laser-Irradiated Metal Targets."

R. Nora, W. Theobald, R. Betti, J. A. Delettrez, A. A. Solodov, K. S. Anderson, W. Seka, and M. Lafon, "Analysis of Fast Electrons in Shock-Ignition Implosions on OMEGA."

S. Padalino, M. Krieger, M. Russ, D. Polsin, M. Bienstock, D. Ellison, and A. Simone, "Design and Characterization of a Collimated Neutron Beam User Facility at SUNY Geneseo."

S. Padalino, D. Polsin, M. Russ, M. Krieger, M. Bienstock, D. Ellison, A. Simone, C. Stillman, M. Yuly, K. Mann, T. Reynolds, and C. Sangster, "Cross Section of the (n, 2n) Reaction in ^{12}C in the Energy Interval 20-30 MeV."

S. Padalino, D. Polsin, M. Russ, M. Krieger, M. Bienstock, D. Ellison, A. Simone, C. Stillman, M. Yuly, K. Mann, T. Reynolds, and C. Sangster, "In Situ Calibration for Proton Particle Telescope."

S. Padalino, M. Russ, D. Polsin, M. Krieger, C. Stillman, M. Bienstock, D. Ellison, A. Simone, M. Yuly, K. Mann, T. Reynolds, and C. Sangster, "Coincidence Efficiency Measurement Using 11B(p,n)11C."

J. Park, C. Ren, J. C. Workman, and E. G. Blackman, "Particle-in-Cell Simulations of Particle Energization via Shock Drift Acceleration from Low Mach Number Quasi-Perpendicular Shocks in Solar Flares."

P. B. Radha, F. J. Marshall, J. A. Marozas, A. Shvydky, I. Gabalski, T. R. Boehly, T. J. B. Collins, R. S. Craxton, D. H.

Edgell, R. Epstein, J. Frenje, D. H. Froula, V. N. Goncharov, M. Hohenberger, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, R. D. Petrasso, T. C. Sangster, and S. Skupsky, "Polar-Drive Implosions on OMEGA and the National Ignition Facility" (invited).

S. P. Regan, "X-Ray Thomson Scattering: Incisive Probe for Warm, Dense Matter."

S. P. Regan, R. Epstein, B. A. Hammel, L. J. Suter, J. Ralph, H. Scott, M. A. Barrios, D. K. Bradley, C. Cerjan, T. Doeppner, S. H. Glenzer, I. E. Golovkin, S. W. Haan, O. Jones, J. D. Kilkenny, J. L. Kline, and O. L. Landen, J. J. MacFarlane, R. C. Mancini, H.-S. Park, B. A. Remington, V. A. Smalyuk, and J. Springer, "Hot-Spot Mix and Compressed Ablator ρR Measurements in Ignition-Scale Implosions."

H. G. Rinderknecht, C. K. Li, M. Gatu-Johnson, A. Zylstra, M. Rosenberg, J. A. Frenje, F. H. Séguin, R. D. Petrasso, P. A. Amendt, A. Miles, J. R. Rygg, V. Yu. Glebov, C. Stoeckl, and T. C. Sangster, "Anomalous Shock Yields in Direct- and Indirect-Drive D^3He Exploding Pushers."

T. C. Sangster, V. N. Goncharov, R. Betti, P. B. Radha, T. R. Boehly, D. T. Casey, T. J. B. Collins, R. S. Craxton, 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, I. V. Igumenshchev, R. T. Janezic, J. H. Kelly, T. J. Kessler, C. Kingsley, T. Z. Kosc, J. P. Knauer, S. J. Loucks, J. A. Marozas, F. J. Marshall, A. V. Maximov, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, R. D. Petrasso, S. P. Regan, W. Seka, W. T. Shmayda, R. W. Short, A. Shvydky, S. Skupsky, J. M. Soures, C. Stoeckl, W. Theobald, V. Versteeg, B. Yaakobi, and J. D. Zuegel, "Improving Cryogenic DT Implosion Performance on OMEGA" (invited).

W. Seka, D. H. Edgell, D. H. Froula, J. Katz, J. F. Myatt, J. Zhang, R. W. Short, D. T. Michel, A. V. Maximov, and V. N. Goncharov, "Multibeam Two-Plasmon Decay: Experimental Signatures and Diagnostic Applications."

R. W. Short, J. F. Myatt, A. V. Maximov, D. T. Michel, D. H. Froula, and J. Zhang, "The Effects of Beam Polarization and Orientation on Convective and Absolute Two-Plasmon Decay by Multiple Laser Beams."

A. Shvydky, M. Hohenberger, J. A. Marozas, M. J. Bonino, D. Canning, T. J. B. Collins, T. J. Kessler, P. W. McKenty, T. C. Sangster, and J. D. Zuegel, "Two-Dimensional Numerical Evaluation of 1-D Multi-FM SSD Experiments."

N. Sinenian, M. J.-E. Manuel, J. A. Frenje, F. H. Séguin, C. K. Li, R. D. Petrasso, V. N. Goncharov, J. A. Delettrez, C. Stoeckl, T. C. Sangster, and J. Cobble, "An Empirical Target-Discharging Model for Direct-Drive Implosions on OMEGA."

H. Sio, M. Rosenberg, H. G. Rinderknecht, D. T. Casey, A. Zylstra, C. Waugh, M. Gatu-Johnson, F. H. Séguin, C. K. Li, J. A. Frenje, R. D. Petrasso, J. A. Delettrez, V. Yu. Glebov, T. C. Sangster, C. Stoeckl, V. N. Goncharov, P. A. Amendt, C. Bellei, and S. C. Wilks, "Developing a D^3He Exploding-Pusher Platform to Study Kinetic Effects."

A. A. Solodov, W. Theobald, K. S. Anderson, A. Shvydky, R. Betti, J. F. Myatt, C. Stoeckl, and R. B. Stephens, "Simulations of Cone-in-Shell Targets for Integrated Fast-Ignition Experiments on OMEGA."

C. Stoeckl, J. A. Delettrez, G. Fiksel, D. Guy, R. K. Jungquist, C. Mileham, P. M. Nilson, T. C. Sangster, M. J. Shoup III, and W. Theobald, "Soft X-Ray Backlighting of Direct-Drive Implosions Using a Narrowband Crystal Imaging System."

W. Theobald, A. A. Solodov, C. Stoeckl, R. Epstein, V. Yu. Glebov, G. Fiksel, S. Ivancic, F. J. Marshall, G. McKiernan, C. Mileham, P. M. Nilson, T. C. Sangster, C. Jarrott, F. N. Beg, E. Giraldez, R. B. Stephens, M. S. Wei, H. McLean, H. Sawada, and J. Santos, "Monochromatic 8.05-keV Flash Radiography of Imploded Cone-in-Shell Targets."

C. Waugh, M. Rosenberg, J. A. Frenje, F. H. Séguin, R. D. Petrasso, V. Yu. Glebov, T. C. Sangster, and C. Stoeckl, "A New Platform for Calibrating nTOF Detectors at ICF Facilities Using CR-39-Based Proton Detectors."

J. Zhang, J. F. Myatt, R. W. Short, A. V. Maximov, H. X. Vu, D. A. Russell, and D. F. DuBois, "A Three-Dimensional Zakharov Model of the Two-Plasmon-Decay Instability in Inhomogeneous Plasmas Driven by Multiple Laser Beams."

The following presentations were made at the 12th International Workshop on Fast Ignition of Fusion Targets, Napa Valley, CA, 4–8 November 2012:

J. R. Davies, "Scaling of Ignition Laser Parameters with Fast-Electron Parameters."

A. A. Solodov, W. Theobald, K. S. Anderson, A. Shvydky, R. Betti, J. F. Myatt, and R. B. Stephens, "Integrated Fast-Ignition Experiments on OMEGA."

S. P. Regan, R. Epstein, B. A. Hammel, L. J. Suter, C. A. Iglesias, B. G. Wilson, M. A. Barrios, D. K. Bradley, D. A. Callahan, C. Cerjan, T. Doeppner, M. J. Edwards, S. H. Glenzer, I. E. Golovkin, S. W. Haan, N. Izumi, O. S. Jones, J. D. Kilkenny, J. L. Kline, G. A. Kyrala, O. L. Landen, T. Ma, J. J. MacFarlane, R. C. Mancini, R. L. McCrory, N. B. Meezan, D. D. Meyerhofer, H.-S. Park, K. J. Peterson, J. Ralph, B. A. Remington, T. C. Sangster, V. A. Smalyuk, P. Springer, and R. P. J. Town, "X-Ray Spectroscopy of Ignition-Scale Implosions on the National Ignition Facility," 15th Workshop on Radiative Properties of Hot Dense Matter, Santa Barbara, CA, 5–9 November 2012.

W. T. Shmayda, D. R. Harding, and T. B. Jones, "Tritium Fuel Cycle for Direct-Drive Inertial Fusion Reactors Using Microfluidics," 2012 American Nuclear Society Winter Meeting and Nuclear Technology Expo, San Diego, CA, 11–15 November 2012.

D. R. Harding, W. Wang, and T. B. Jones, "Textured Silicon Surfaces for Moving Oil Droplets in 'Lab-on-Chip' Devices," Material Research Society Fall Meeting, Boston, MA, 25–30 November 2012.

The following presentations were made at the Fusion Power Associates Meeting, Washington, DC, 5–6 December 2012:

R. Betti, "Fusion Science Center Activities on Advanced ICF Ignition."

R. L. McCrory, "Progress Toward Polar-Drive Ignition for the NIF."