
Publications and Conference Presentations

Publications

- 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 Nanochannel Diodes,” *J. Phys.: Conf. Ser.* **906**, 012001 (2017).
- P. Angland, D. Haberberger, S. T. Ivancic, and D. H. Froula, “Angular Filter Refractometry Analysis Using Simulated Annealing,” *Rev. Sci. Instrum.* **88**, 103510 (2017).
- A. Bose, R. Betti, D. Shvarts, and K. M. Woo, “The Physics of Long- and Intermediate-Wavelength Asymmetries of the Hot Spot: Compression Hydrodynamics and Energetics,” *Phys. Plasmas* **24**, 102704 (2017).
- L. Calderín, V. V. Karasiev, and S. B. Trickey, “Kubo–Greenwood Electrical Conductivity Formulation and Implementation for Projector Augmented Wave Datasets,” *Comp. Phys. Commun.* **221**, 118 (2017).
- G. Chen, R. Shrestha, A. Amori, Z. Staniszewski, A. Jukna, A. Korliov, C. Richter, M. El Fray, T. Krauss, and R. Sobolewski, “Terahertz Time-Domain Spectroscopy Characterization of Carbon Nanostructures Embedded in Polymer,” *J. Phys.: Conf. Ser.* **906**, 012002 (2017).
- C. Dorrer, A. Consentino, R. Cuffney, I. A. Begishev, E. M. Hill, and J. Bromage, “Spectrally Tunable, Temporally Shaped Parametric Front End to Seed High-Energy Nd:glass Laser Systems,” *Opt. Express* **25**, 26,802 (2017).
- F. Fereidouni, Z. T. Harmany, M. Tian, A. Todd, J. A. Kintner, J. D. McPherson, A. D. Borowsky, J. Bishop, M. Lechpammer, S. G. Demos, and R. Levenson, “Microscopy with Ultraviolet Surface Excitation for Rapid Slide-Free Histology,” *Nat. Biomed. Eng.* **1**, 957 (2017).
- R. K. Follett, D. H. Edgell, D. H. Froula, V. N. Goncharov, I. V. Igumenshchev, J. G. Shaw, and J. F. Myatt, “Full-Wave and Ray-Based Modeling of Cross-Beam Energy Transfer Between Laser Beams with Distributed Phase Plates and Polarization Smoothing,” *Phys. Plasmas* **24**, 103128 (2017).
- R. K. Follett, J. F. Myatt, J. G. Shaw, D. T. Michel, A. A. Solodov, D. H. Edgell, B. Yaakobi, and D. H. Froula, “Simulations and Measurements of Hot-Electron Generation Driven by the Multibeam Two-Plasmon–Decay Instability,” *Phys. Plasmas* **24**, 102134 (2017).
- T. A. Germer, K. A. Sharma, T. G. Brown, and J. B. Oliver, “Polarized Optical Scattering by Inhomogeneities and Surface Roughness in an Anisotropic Thin Film,” *J. Opt. Soc. Am. A* **34**, 1974 (2017).
- S. X. Hu, L. A. Collins, J. P. Colgan, V. N. Goncharov, and D. P. Kilcrease, “Optical Properties of Highly Compressed Polystyrene: An *Ab Initio* Study,” *Phys. Rev. B* **96**, 144203 (2017).
- V. V. Ivanov, K. J. Swanson, G. S. Sarkisov, A. V. Maximov, P. P. Wiewior, A. L. Astanovitskiy, V. Nalajala, O. Chalyy, O. Dmitriev, and N. L. Wong, “Observation of Impact of Eddy Current on Laser Targets in a Strong Fast Rising Magnetic Field,” *Phys. Plasmas* **24**, 112707 (2017).
- A. Jukna, J. Gradauskas, A. Sužiedelis, A. Maneikis, K. Šliužienė, and R. Sobolewski, “Investigation of the I – V Characteristics Asymmetry in Semiconducting Y–Ba–Cu–O Diodes,” *Micro Nano Lett.* **12**, 838 (2017).
- A. Kar and I. Franco, “Quantifying Fermionic Decoherence in Many-Body Systems,” *J. Chem. Phys.* **146**, 214107 (2017).
- A. Lazicki, R. A. London, F. Coppari, D. Erskine, H. D. Whitley, K. J. Caspersen, D. E. Fratanduono, M. A. Morales, P. M. Celliers, J. H. Eggert, M. Millot, D. C. Swift, G. W. Collins, S. O. Kucheyev, J. I. Castor, and J. Nilsen, “Shock Equation of State of ${}^6\text{LiH}$ to 1.1 TPa,” *Phys. Rev. B* **96**, 134101 (2017).

E. Llor Aisa, X. Ribeyre, G. Duchateau, T. Nguyen-Bui, V. T. Tikhonchuk, A. Colaitis, R. Betti, A. Bose, and W. Theobald, "The Role of Hot Electrons in the Dynamics of a Laser-Driven Strong Converging Shock," *Phys. Plasmas* **24**, 112711 (2017).

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, "Single-Pulse Interference Caused by Temporal Reflection at Moving Refractive-Index Boundaries," *J. Opt. Soc. Am. B* **34**, 2274 (2017).

D. N. Polsin, D. E. Fratanduono, J. R. Rygg, A. Lazicki, R. F. Smith, J. H. Eggert, M. C. Gregor, B. H. Henderson, J. A. Delettrez, R. G. Kraus, P. M. Celliers, F. Coppari, D. C. Swift, C. A. McCoy, C. T. Seagle, J.-P. Davis, S. J. Burns, G. W. Collins, and T. R. Boehly, "Measurement of Body-Centered-Cubic Aluminum at 475 GPa," *Phys. Rev. Lett.* **119**, 175702 (2017).

D. B. Schaeffer, W. Fox, D. Haberberger, G. Fiksel, A. Bhattacharjee, D. H. Barnak, S. X. Hu, K. Germaschewski, and R. K. Follett, "High-Mach Number, Laser-Driven Magnetized Collisionless Shocks," *Phys. Plasmas* **24**, 122702 (2017).

J. Serafini, S. B. Trivedi, D. Kochanowska, M. Witkowska-Baran, A. Mycielski, M. Guziewicz, R. Kruszka, W. Słysz, and R. Sobolewski, "Characterization of (Cd,Mn)Te and (Cd,Mg)Te Single Crystals in the THz Frequency Range Using Integrated Photoconductive and Electro-Optics Effects," *J. Phys.: Conf. Ser.* **906**, 012016 (2017).

W. L. Shang, R. Betti, S. X. Hu, K. Woo, L. Hao, C. Ren, A. R. Christopherson, A. Bose, and W. Theobald, "Electron Shock Ignition of Inertial Fusion Targets," *Phys. Rev. Lett.* **119**, 195001 (2017).

W. Theobald, A. Bose, R. Yan, R. Betti, M. Lafon, D. Mangino, A. R. Christopherson, C. Stoeckl, W. Seka, W. Shang, D. T. Michel, C. Ren, R. C. Nora, A. Casner, J. Peebles, F. N. Beg, X. Ribeyre, E. Llor Aisa, A. Colaitis, V. Tikhonchuk, and M. S. Wei, "Enhanced Hot-Electron Production and Strong-Shock Generation in Hydrogen-Rich Ablators for Shock Ignition," *Phys. Plasmas* **24**, 120702 (2017).

G. J. Williams, H. Chen, J. E. Field, O. L. Landen, and D. J. Strozzi, "Positron Radiography of Ignition-Relevant ICF Capsules," *Phys. Plasmas* **24**, 122704 (2017).

M. Zaghou and I. F. Silvera, "Conductivity and Dissociation in Liquid Metallic Hydrogen and Implications for Planetary Interiors," *Proc. Natl. Acad. Sci. USA* **45**, 11,873 (2017).

A. B. Zylstra, J. A. Frenje, M. Gatu Johnson, G. M. Hale, C. R. Brune, A. Bacher, D. T. Casey, C. K. Li, D. McNabb, M. Paris, R. D. Petrasso, T. C. Sangster, D. B. Sayre, and F. H. Séguin, "Proton Spectra from $^3\text{He} + \text{T}$ and $^3\text{He} + ^3\text{He}$ Fusion at Low Center-of-Mass Energy, with Potential Implications for Solar Fusion Cross Sections," *Phys. Rev. Lett* **119**, 222701 (2017).

Forthcoming Publications

B. P. Chock, D. R. Harding, and T. B. Jones, "Using Digital Microfluidics to Dispense, Combine, and Transport Low-Surface-Energy Fluids," to be published in *Fusion Science and Technology*.

K. Falk, M. Holec, C. J. Fontes, C. L. Fryer, C. W. Greeff, H. M. Johns, D. S. Montgomery, D. W. Schmidt, and M. Šmíd, "Measurement of Preheat Due to Nonlocal Electron Transport in Warm, Dense Matter," to be published in *Physical Review Letters*.

P. Fiala, Y. Li, and C. Dorrer, "Investigation of Focusing and Correcting Aberrations with Binary Amplitude and Polarization Modulation," to be published in *Applied Optics*.

J. A. Fooks, L. C. Carlson, P. Fitzsimmons, E. Giraldez, D. N. Kaczala, M. Wei, N. Alexander, M. P. Farrell, J. Betcher,

A. Harvey-Thompson, and T. Nagayama, "Evolution of Magnetized Liner Inertial Fusion (MagLIF) Targets," to be published in *Fusion Science and Technology*.

D. H. Froula, D. Turnbull, T. J. Kessler, D. Haberberger, S.-W. Bahk, I. A. Begishev, R. Boni, S. Bucht, A. Davies, J. Katz, and J. L. Shaw, "Spatiotemporal Control of Laser Intensity," to be published in *Nature Photonics*.

M. Gatu Johnson, D. T. Casey, M. Hohenberger, A. B. Zylstra, A. Bacher, C. R. Brune, R. M. Bionta, R. S. Craxton, C. L. Ellison, M. Farrell, J. A. Frenje, W. Garbett, E. M. Garcia, G. P. Grim, E. Hartouni, R. Hatarik, H. W. Herrmann, M. Hohensee, D. M. Holunga, M. Hoppe, M. Jackson, N. Kabadi, S. F. Khan, J. D. Kilkenny, T. R. Kohut, B. Lahmann, H. P. Le, C. K. Li, L. Masse, P. W. McKenty, D. P. McNabb, A. Nikroo, T. G. Parham, C. E. Parker, R. D. Petrasso, J. Pino, B. Remington,

N. G. Rice, H. G. Rinderknecht, M. J. Rosenberg, J. Sanchez, D. B. Sayre, M. E. Schoff, C. M. Shuldrberg, F. H. Séguin, H. Sio, Z. B. Walters, and H. D. Whitley, “Optimization of a High-Yield, Low-Areal-Density Fusion Product Source at the National Ignition Facility with Applications in Nucleosynthesis Experiments,” to be published in *Physical Review Letters*.

D. R. Harding, J. Ulreich, M. D. Wittman, R. Chapman, C. Taylor, R. Taylor, N. P. Redden, J. C. Lambropoulos, R. Q. Gram, M. J. Bonino, and D. W. Turner, “Requirements and Capabilities for Fielding Cryogenic DT-Containing Fill-Tube Targets for Direct-Drive Experiments on OMEGA,” to be published in *Fusion Science and Technology*.

S. X. Hu, “Electron–Electron Correlation in Two-Photon Double-Ionization of He-Like Ions,” submitted to be published in *Physical Review A*.

K. R. P. Kafka, S. Papernov, and S. G. Demos, “Enhanced Laser Conditioning of Magnetorheologically Finished Silica Using Temporally Shaped Nanosecond Pulses,” to be published in *Optics Letters*.

V. V. Karasiev, J. W. Dufty, and S. B. Trickey, “Nonempirical Semilocal Free-Energy Density Functional for Matter Under Extreme Conditions,” to be published in *Physical Review Letters*.

R. K. Kirkwood, D. P. Turnbull, T. Chapman, S. C. Wilks, M. D. Rosen, R. A. London, L. A. Pickworth, W. H. Dunlop, J. D. Moody, D. J. Strozzi, P. A. Michel, L. Divol, O. L. Landen, B. J. MacGowan, B. M. Van Wonterghem, K. B. Fournier, and B. E. Blue, “Plasma-Based Beam Combiner for Very High Fluence and Energy,” to be published in *Nature Physics*.

E. V. Ludeña, E. X. Salazar, M. H. Cornejo, D. E. Arroyo, and V. V. Karasiev, “The Liu–Parr Power Series Expansion of the Pauli Kinetic Energy Functional with the Incorporation of the Shell-Inducing Traits: Atoms,” to be published in the *International Journal of Quantum Chemistry*.

J. A. Marozas, M. Hohenberger, M. J. Rosenberg, D. Turnbull, T. J. B. Collins, P. B. Radha, P. W. McKenty, J. D. Zuegel, F. J. Marshall, S. P. Regan, T. C. Sangster, W. Seka, E. M. Campbell, V. N. Goncharov, M. W. Bowers, J.-M. G. DiNicola, G. Erbert, B. J. MacGowan, L. J. Pelz, and S. T. Yang, “First Observation of Cross-Beam Energy Transfer Mitigation for Direct-Drive Inertial Confinement Fusion Implosions Using Wavelength Detuning at the National Ignition Facility,” to be published in *Physical Review Letters*.

M. Millot, S. Hamel, J. R. Rygg, P. M. Celliers, G. W. Collins, F. Coppari, D. E. Fratanduono, R. Jeanloz, D. C. Swift, and J. H. Eggert, “Experimental Evidence for Superionic Water Ice Using Shock Compression,” to be published in *Nature Physics*.

S. A. Muller, D. N. Kaczala, H. M. Abu-Shawareb, E. L. Alfonso, L. C. Carlson, M. Mauldin, P. Fitzsimmons, D. Lamb, P. Tzeferacos, L. Chen, G. Gregori, A. Rigby, A. Bott, T. G. White, D. Froula, and J. Katz, “Evolution of the Design and Fabrication of Astrophysics Targets for Turbulent Dynamo (TDYNO) Experiments on OMEGA,” to be published in *Fusion Science and Technology*.

B. W. Plansinis, W. R. Donaldson, and G. P. Agrawal, “Cross-Phase-Modulation-Induced Temporal Reflection and Waveguiding of Optical Pulses,” to be published in the *Journal of the Optical Society of America B*.

S. P. Regan, V. N. Goncharov, T. C. Sangster, E. M. Campbell, R. Betti, K. S. Anderson, 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. Obenshain, 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,” to be published in *Fusion Science and Technology*.

H. G. Rinderknecht, H.-S. Park, J. S. Ross, P. A. Amendt, D. P. Higginson, S. C. Wilks, D. Haberberger, J. Katz, D. H. Froula, N. M. Hoffman, G. Kagan, B. D. Keenan, and E. L. Vold, “Highly Resolved Measurements of a Developing Strong Collisional Plasma Shock,” to be published in *Physics of Plasmas*.

M. J. Rosenberg, A. A. Solodov, J. F. Myatt, W. Seka, P. Michel, M. Hohenberger, R. W. Short, R. Epstein, S. P. Regan, E. M. Campbell, T. Chapman, C. S. Goyon, J. E. Ralph, M. A. Barrios, J. D. Moody, and J. W. Bates, “Origins and Scaling of Hot-Electron Preheat in Ignition-Scale Direct-Drive Inertial

Confinement Fusion Experiments,” to be published in *Physical Review Letters*.

J. L. Shaw, N. Lemos, K. A. Marsh, D. H. Froula, and C. Joshi, “Experimental Signatures of Direct-Laser-Acceleration-Assisted Laser Wakefield Acceleration,” to be published in *Plasma Physics and Controlled Fusion*.

D. Turnbull, S. Bucht, A. Davies, D. Haberberger, T. J. Kessler, J. L. Shaw, and D. H. Froula, “Raman Amplification with a Flying Focus,” to be published in *Physical Review Letters*.

P. Tzeferacos, A. Rigby, A. Bott, A. R. Bell, R. Bingham, A. Casner, F. Cattaneo, E. M. Churazov, J. Emig, F. Fiuza, C. B. Forest, J. Foster, C. Graziani, J. Katz, M. Koenig, C.-K. Li, J. Meinecke, R. Petrasso, H.-S. Park, B. A. Remington, J. S. Ross, D. Ryu, D. Ryutov, T. G. White, B. Reville, F. Miniati, A. A. Schekochihin, D. Q. Lamb, D. H. Froula, and G. Gregori, “Laboratory Evidence of Dynamo Amplification

of Magnetic Fields in a Turbulent Plasma,” to be published in *Nature Communications*.

M. P. Valdivia, D. Stutman, C. Stoeckl, C. Mileham, I. A. Begishev, J. Bromage, and S. P. Regan, “Talbot–Lau X-Ray Deflectometry Phase-Retrieval Methods for Electron Density Diagnostics in High-Energy Density Experiments,” to be published in *Applied Optics*.

M. D. Wittman, M. J. Bonino, D. H. Edgell, C. Fella, D. R. Harding, and J. Sanchez, “Effect of Tritium-Induced Damage on Plastic Targets from High-Density DT Permeation,” to be published in *Fusion Science and Technology*.

H. Zhang, R. Betti, V. Gopalaswamy, R. Yan, and H. Aluie, “Nonlinear Excitation of the Ablative Rayleigh–Taylor Instability for All Wave Numbers,” to be published in *Physical Review E*.

Conference Presentations

C. Z. R. Huang, R. W. Wood, and S. G. Demos, “Microscopy with Ultraviolet Surface Excitation for Enhancing K–12 and Undergraduate Education in Life Science,” presented at the 2017 Biomedical Engineering Society Annual Meeting, Phoenix, AZ, 11–14 October 2017.

The following presentations were made at the 59th Annual Meeting of the APS Division of Plasma Physics, Milwaukee, WI, 23–27 October 2017:

K. S. Anderson, P. W. McKenty, A. Shvydky, T. J. B. Collins, C. J. Forrest, J. P. Knauer, P. B. Radha, F. J. Marshall, A. Sefkow, and M. M. Marinak, “Three-Dimensional Modeling of Low-Mode Asymmetries in OMEGA Cryogenic Implosions.”

R. Betti, V. Gopalaswamy, J. P. Knauer, A. R. Christopherson, D. Patel, K. M. Woo, A. Bose, K. S. Anderson, T. J. B. Collins, S. X. Hu, D. T. Michel, C. J. Forrest, R. Shah, P. B. Radha, V. N. Goncharov, V. Yu. Glebov, A. V. Maximov, C. Stoeckl, F. J. Marshall, M. J. Bonino, D. R. Harding, R. T. Janezic, J. H. Kelly, S. Sampat, T. C. Sangster, S. P. Regan, E. M. Campbell, M. Gatu Johnson, J. A. Frenje, C. K. Li, and

R. D. Petrasso, “The 1-D Cryogenic Implosion Campaign on OMEGA” (invited).

T. R. Boehly, C. A. McCoy, D. E. Fratanduono, P. Celliers, M. C. Gregor, D. N. Polsin, Y. Ding, S. X. Hu, J. R. Rygg, and G. W. Collins, “Measurements of Sound Velocity and Grüneisen Parameter in CH Shocked to 800 GPa.”

A. Bose, R. Betti, and K. M. Woo, D. Shvarts, D. S. Clark, S. W. Haan, A. L. Kritcher, O. L. Landen, J. Lindl, J. H. Nuckolls, and M. D. Rosen, “The Physics of Low- and Mid-Mode Asymmetries of the Hot Spot.”

D. Cao, T. R. Boehly, P. B. Radha, D. N. Polsin, A. K. Davis, S. P. Regan, and V. N. Goncharov, “Dependence of Shock Timing on Coronal Parameters for OMEGA Direct-Drive Implosions.”

A. R. Christopherson, and R. Betti, “Definition of Ignition in Inertial Confinement Fusion.”

T. J. B. Collins, J. A. Marozas, D. Cao, J. A. Delettrez, P. W. McKenty, P. B. Radha, S. Skupsky, and G. Moses, “Advances in Modeling Direct-Drive Ignition-Scale Designs for the National Ignition Facility.”

- L. Crandall, J. R. Rygg, G. W. Collins, T. R. Boehly, A. Jenei, D. E. Fratanduono, M. C. Gregor, M. Millot, J. H. Eggert, and D. Spaulding, "Equation-of-State Measurements of Precompressed CO₂."
- R. S. Craxton, E. M. Garcia, L. T. Browning, S. Le Pape, H.-S. Park, C. K. Li, and A. B. Zylstra, "Saturn Designs for Small Proton-Backlighter Targets at the National Ignition Facility."
- J. R. Davies, D. H. Barnak, R. Betti, V. Yu. Glebov, J. P. Knauer, J. L. Peebles, K. J. Peterson, and D. B. Sinars, "Fuel Areal-Density Measurements in Laser-Driven MagLIF from Secondary Neutrons."
- A. K. Davis, D. T. Michel, A. B. Sefkow, Y. H. Ding, R. Epstein, S. X. Hu, J. P. Knauer, and D. H. Froula, "Conduction-Zone Measurements Using X-Ray Self-Emission Images."
- J. A. Delettrez, R. K. Follett, C. Stoeckl, W. Seka, and J. P. Matte, "Understanding Hard X-Ray Emission in Direct-Drive Implosions."
- Y. H. Ding, and S. X. Hu, "Density-Functional-Theory-Based Equation-of-State Table of Beryllium for Inertial Confinement Fusion Applications."
- D. H. Edgell, R. K. Follett, J. Katz, J. F. Myatt, J. G. Shaw, D. Turnbull, and D. H. Froula, "Polarization Rotation from Cross-Beam Energy Transfer During Direct-Drive OMEGA Implosions."
- R. Epstein, C. Stoeckl, V. N. Goncharov, P. W. McKenty, S. P. Regan, and P. B. Radha, "Simulation and Analysis of Time-Gated Monochromatic Radiographs of Cryogenic Implosions on OMEGA."
- R. K. Follett, D. H. Edgell, D. H. Froula, V. N. Goncharov, I. V. Igumenshchev, J. G. Shaw, J. F. Myatt, J. W. Bates, K. Obenschain, and J. Weaver, "Wave-Based Cross-Beam Energy Transfer Simulations with Laser Speckle and Polarization Smoothing."
- C. J. Forrest, K. S. Anderson, V. Yu. Glebov, V. N. Goncharov, J. P. Knauer, O. M. Mannion, P. B. Radha, S. P. Regan, T. C. Sangster, and C. Stoeckl, "Low-Mode Variations of the Cold-Fuel Distribution in Cryogenic DT Implosions on OMEGA."
- D. H. Froula, D. Turnbull, A. Davies, T. J. Kessler, D. Haberberger, S.-W. Bahk, I. A. Begishev, R. Boni, S. Bucht, J. Katz, J. Palastro, and J. L. Shaw, "Flying Focus: Spatiotemporal Control of Longitudinal Intensity."
- V. Yu. Glebov, C. J. Forrest, J. P. Knauer, O. M. Mannion, S. P. Regan, T. C. Sangster, C. Stoeckl, and M. Gatu Johnson, "Upgraded Neutron Time-of-Flight Detectors for DT Implosions on OMEGA."
- V. N. Goncharov, "A Model for the Growth of Localized Shell Features in Inertial Confinement Fusion Implosions."
- X. Gong, D. N. Polsin, J. R. Rygg, T. R. Boehly, L. Crandall, B. J. Henderson, S. X. Hu, M. Huff, R. Saha, G. W. Collins, R. Smith, J. H. Eggert, A. E. Lazicki, and M. McMahon, "Sodium X-Ray Diffraction in the High-Pressure Regime."
- V. Gopalaswamy, R. Betti, J. P. Knauer, A. R. Christopherson, D. Patel, K. M. Woo, W. Shang, A. Bose, K. S. Anderson, T. J. B. Collins, V. N. Goncharov, P. B. Radha, V. Yu. Glebov, A. V. Maximov, C. Stoeckl, F. J. Marshall, E. M. Campbell, and S. P. Regan, "A Statistical Approach to Implosion Design on the OMEGA Laser."
- D. Haberberger, A. Davies, S. Bucht, J. Katz, J. L. Shaw, D. Turnbull, I. A. Begishev, S.-W. Bahk, J. Bromage, J. D. Zuegel, D. H. Froula, J. D. Sadler, P. A. Norreys, R. Trines, and R. Bingham, "Picosecond Thermal Dynamics in an Underdense Plasma Measured with Thomson Scattering."
- A. Hansen, D. Haberberger, J. L. Shaw, and D. H. Froula, "OMEGA Supersonic Gas-Jet Target System Characterization."
- R. J. Henchen, V. N. Goncharov, D. Cao, J. Katz, D. H. Froula, W. Rozmus, and M. Sherlock, "Heat-Flux Measurements in Laser-Produced Plasmas Using Thomson Scattering from Electron Plasma Waves."
- B. Henderson, T. R. Boehly, S. X. Hu, D. N. Polsin, J. R. Rygg, G. W. Collins, M. C. Gregor, D. E. Fratanduono, R. Kraus, J. H. Eggert, and P. M. Celliers, "Hugoniot Measurements of Silicon Shock Compressed to 21 Mbar."
- S. X. Hu, T. R. Boehly, Y. H. Ding, P. B. Radha, V. N. Goncharov, J. R. Rygg, G. W. Collins, S. P. Regan, E. M. Campbell, L. A. Collins, and J. D. Kress, "High-Energy-

Density–Physics Studies for Inertial Confinement Fusion Applications” (invited).

I. V. Igumenshchev, E. M. Campbell, V. N. Goncharov, S. P. Regan, A. Shvydky, and A. J. Schmitt, “Three-Dimensional Hydrodynamic Simulations of the Effects of Laser Imprint in OMEGA Implosions.”

S. T. Ivancic, C. R. Stillman, P. M. Nilson, C. Mileham, A. A. Solodov, and D. H. Froula, “Blast-Wave Generation and Propagation in Rapidly Heated Laser-Irradiated Targets.”

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M. Zaghoo, and I. F. Silvera, "Dynamic Conductivity and Partial Ionization in Metallic Hydrogen."

H. Zhang, R. Betti, V. Gopalaswamy, R. Yan, and H. Aluie, "Nonlinear Excitation of the Linearly Stable Ablative Rayleigh-Taylor Instability for All Wave Numbers."

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The following presentations were made at the Materials Research Society Fall Meeting, Boston, MA, 26 November–1 December 2017:

D. R. Harding, B. P. Chock, and T. B. Jones, "Digital Microfluidic Methods for Forming Droplets of Low-Surface-Energy Fluids, Combining Them into Emulsions, and Transforming Them into Polymer Shells."

N. D. Viza, and D. R. Harding, "Microfluidic Devices for Producing Millimeter-Size Droplets, Emulsions, and Polystyrene Shells for Inertial Fusion Confinement Experiments."

Y. Zhao, and W. R. Donaldson, "Systematic Study on the Photoresponse in $\text{Al}_x\text{Ga}_{1-x}\text{N}$ UV Photodetectors."

G. W. Collins, "High-Energy-Density Microphysics: Progress and Plans."

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The following presentations were made at the 38th Annual Meeting and Symposium Fusion Power Associates, Pathways and Progress Toward Fusion Power, Washington, DC, 6–7 December 2017:

V. N. Goncharov, "Progress Toward Demonstration of Ignition Hydroequivalence on OMEGA."

R. Betti, V. Gopalaswamy, J. P. Knauer, A. R. Christopherson, D. Patel, K. M. Woo, A. Bose, K. S. Anderson, T. J. B. Collins, S. X. Hu, D. T. Michel, C. J. Forrest, R. Shah, P. B. Radha, V. N. Goncharov, V. Yu. Glebov, A. V. Maximov, C. Stoeckl, F. J. Marshall, M. J. Bonino, D. R. Harding, R. T. Janezic, J. H. Kelly, S. Sampat, T. C. Sangster, S. P. Regan, E. M. Campbell, M. Gatu Johnson, J. A. Frenje, C. K. Li, and R. Petrasso, "Achieving Record Fusion Yields in Direct-Drive Laser-Fusion Experiments Using Statistical Mapping."

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