Carolyn C. Kuranz
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Ann Arbor, MI
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Employment:

Assistant Research Scientist 2009- present
Center for Radiative Shock Hydrodynamics
University of Michigan

Education:

A.B. 2002, Bryn Mawr College, Bryn Mawr, PA
Majors: Physics (with Honors)
Advisor: Peter Beckmann

M.S. 2004, Applied Physics
University of Michigan, Ann Arbor, MI

Ph.D, April 2009, Applied Physics
University of Michigan, Ann Arbor, MI
Advisor: R. Paul Drake

Advising:

Graduate Thesis Committee Co-Chair:
Carlos Di Stefano
Christine Krauland
Rachel Young

Graduate Thesis Committee Member:
Jason Chou

Undergraduate Physics Honors Thesis: Phil Bonofiglio

Research Faculty Advisor, Undergraduate Research Opportunity Program, 2009-present

Undergraduate advisees: Grant Renny (UROP), Nathan Janes (UROP), Emma Boyd (UROP), Meghan Ostermann (UROP), Chris Ruiz (UROP), Gary Grima (REU), Wesley Wan (REU), Megan McCarthy (UROP), Nick Clift (UROP), Phillip Bonofiglo (UROP), Kelsey Gasior (UROP) Emily Lichko (UROP), Colin Cornwall (UROP), Ray McCaffey (UROP), Matt Gudorf (UROP), Josh Wehrly (UROP), Britney Blankenship (UROP), Matthew Forsythe, Scott Perry, Namitha

Jassen, Adam Budde, Andrew Swain, David Bernthal, Nilton Gjeci, Eduardo Mucino

Applied Physics Faculty Supervisor and Mentor

Professional Service:

Member, Student/Postdoc Panel, Omega Laser User's Group Meeting, Rochester, NY, May 2009
Member, NIF/Jupiter Users Group Panel, NIF/Jupiter User's Group Meeting, San Francisco, CA, September 2009
Member, Radiation dominated plasma and material properties panel, Research Needs Workshop on High Energy Density Laboratory Plasmas, Rockville, MD, November 2009
Member, Executive Committee for the American Physical Society Topical Group of Plasma Astrophysics
Member, Interface and shear instabilities panel, Workshop on Opportunities in Plasma Astrophysics, Princeton, NJ, January 2010
Reviewer, Department of Energy, Office of Science Graduate Award Fellowship
Reviewer, Omega Laser Facility, Laboratory for Basic Science review panel, 2010-2012
Chair and organizer of "Hydrodynamics of Supernovae and Astrophysical Jets in the Laboratory and the Universe" session in the American Astronomical Society Meeting-in-a-Meeting, "Bridging Laboratory and Astrophysics: Frontiers in Plasma Astrophysics"
Member, Program Committee, American Physical Society, Division of Plasma Physics
Member, Experimental Panel, Material Mixing Workshop, Santa Fe, NM, January 2011
Project Lead, Omega Laser User Group Findings and Recommendations Panel
Member, Panel on Work/Life Balance in Graduate School, Graduate Society of Women in Engineering
Judge, Michigan Institute of Plasma Studies Student Poster Session 2011
Member, Steering Committee, International Conference on High Energy Density Physics (ICHED), 2011-
Member, Scientific Organizing Committee of the International High Energy Density Laboratory Astrophysics, 2012
Reviewer, National Laser User Facility Target Fabrication Solicitation
Chair, Jupiter Laser User Group
Member, Executive Committee, Michigan Institute for Plasma Science and Engineering, 2012
Research Faculty Advisor, Undergraduate Research Opportunity Program, 2009-present

Journal Referee
Physics of Plasmas
Journal of Instrumentation

Teaching Experience:

Series of six 2-hour lectures in High-Energy-Density Physics
Series of two 2-hour lectures in Fluid Instabilities
Completed course in College Teaching in Science and Engineering at Center for Research of Learning and Teaching at the University of Michigan

Professional Experience:

High Energy Density (HED) Experiments:

- Primary Investigator for Laboratory Astrophysics experiments at the National Ignition Facility
  - 2 experiments in 2009
  - 2 experiments scheduled for 2012
  - 5 experiments scheduled for 2013
- Designed and executed over 15 HED experiments on the Omega laser from 2004-present
- Assisted over 15 other HED experiments on the Omega laser from 2003-present
- Assisted in HED experiments at the Trident Laser Facility
- Acquired time at the Jupiter Laser Facility for November 2012
- Designed targets for HED experiments
- Supervised the construction of targets for HED experiments and assessed their quality against defined tolerances during and after construction
- Designed target components and managed the fabrication by General Atomics

Data Analysis:

- Extensive experience using IDL for analysis of radiographic data for spatial and density measurements
- Experience analyzing interferometry and pyrometry data for velocity measurements

Computer Simulations:

- Executed 1D Hyades simulations of HED experiments
- Executed 1D and 2D FLASH simulations of HED experiments
- Aided in 2D and 3D CRASH simulations of HED experiments

U of M, AOSS Department Service:

Member, Candidacy Exam Committee

Current Projects:

Project Director/Principal Investigator:
Title: Imaging scattered x-ray radiation for density measurements in hydrodynamics Experiments on the National Ignition Facility
Sponsor: Lawrence Livermore National Laboratory
Total Award/Budget: $70,000

Title: Imaging X-ray Thomson Scattering for Omega Radiation-Hydrodynamic Experiments
Sponsor: Los Alamos National Laboratory
Total Award/Budget: $297,471

Co-Principal Investigator:
Title: Center for Laser Experimental Astrophysical Research (CLEAR)
Sponsor: DOE-NNSA
Total Award/Budget: 2,250,000

Title: Experimental Astrophysics on the Omega Laser
Sponsor: DOE
Total Award/Budget: $400,000

Co-Investigator:
Title: CRASH - Center for Radiative Shock Hydrodynamics
Sponsor: DOE-NNSA
Total Award/Budget: 17,000,000.00

Title: Investigation and Control of Electron Transport in Laser X-Ray Sources
Sponsor: Defense Threat Reduction Agency
Total Award/Budget: 745,503.00

Pending:
Title: Creating an astrophysically-relevant magnetized accretion disk in high-energy-density physics experiments
Sponsor: National Science Foundation
Total Award/Budget: 548,853.00

Proposals Declined:
Title: Collaborative Research: Magnetic Rayleigh-Taylor Instability in High-Energy-Density Plasmas: Theory and Experimental Design
Sponsor: National Science Foundation

Title: Collaborative Research: Theory and Experiment Design Studies of Astrophysically Relevant Magnetized Supersonic Light Jets
Sponsor: National Science Foundation

Title: The effects and mitigation of the ablative hydrodynamic instabilities in the creation of laser-irradiated x-ray sources using mid-Z metals
Sponsor: Defense Threat Reduction Agency

Title: X-Ray Thomson Scattering to Diagnose Laser-Irradiated Hydrodynamic Instability Experiments
Sponsor: Defense Threat Reduction Agency

Invited Oral Presentations:

1. "Supernova Hydrodynamics Experiments with Attention to the Transition to Turbulence," International Conference on High Energy Density Laboratory Astrophysics Conference, Houston, TX, March 2006.

2. "Supernova Hydrodynamics Experiments on the Omega Laser," Nuclear Astrophysics Workshop, Livermore, CA, August 2007.

3. "Laboratory blast wave driven instabilities on the Omega Laser," High Energy Density Science User's Project mini-symposium of Stewardship Science Academic Alliance Symposium, Washington, D.C., February 2008.

4. "Laboratory blast-wave driven instabilities," International Conference on High Energy Density Laboratory Astrophysics/International Conference on High Energy Density Physics at the April meeting of the American Physical Society, St. Louis, Mo, April, 2008.

5. "Laboratory blast-wave-driven instabilities," American Physical Society, Division of Plasma Physics Conference, Dallas, TX, November 2008.

6. "Radiation Hydrodynamics Experiments at the National Ignition Facility," Conference on High Energy Density Laboratory Astrophysics, Pasadena, CA, March 2010.

7. "High-Energy-Density Laboratory Astrophysics: Supernova-Relevant Hydrodynamics," 2011 Annual Research Meeting of the DOE Office of Science Graduate Fellowship Program, Oak Ridge National Laboratory, Oak Ridge Tennessee, July 2011.

8. "National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities," National Ignition Facility Users Group Meeting, Lawrence Livermore National Laboratory, Livermore, CA, February, 2011.

Seminars and Colloquia:

1. “High-Energy-Density-Laboratory Astrophysics Experiments,” Departmental Seminar, Cornell University, February 2008.

2. “High-Energy-Density-Laboratory Astrophysics Experiments,” Hydrodynamic Instabilities, Lawrence Livermore National Laboratory, March 2008.

3. “High-Energy-Density Laboratory Astrophysics Experiments,” Departmental Seminar, University of Texas, March 2008.

4. “High-Energy-Density Laboratory Astrophysics Experiments, ”Departmental Seminar, University of Michigan, March 2008.

5. “Characterization of the initial state of Be in radiative shock experiment on Omega,” Lawrence Livermore National Laboratory Seminar, July 2009.

6. "High-energy-density physics with astrophysical application: hydrodynamics and radiation hydrodynamics," Department of Energy Seminar, December 2009.

7. “High-energy-density physics experiments,” University of Michigan, Applied Physics Seminar, February 2010.

8. "High-Energy-Density Laboratory Astrophysics Experiments at the Omega Laser Facility and the National Ignition Facility," Lawrence Livermore National Laboratory, Institute for Geophysics and Planetary Physics, December 2010.

9. “High-energy-density laboratory astrophysics experiments,” University of Wisconsin, Physics Seminar, March 2011.

10. “High-Energy-Density Physics: from Exploding Stars to Fusion Energy,” University of Michigan, Society of Physics Students, April 2011.

Other Oral Presentations:

1. “Supernova Hydrodynamics Experiments on the Omega Laser”, Supernova Hydrodynamics Experiments Workshop, Tucson, AZ, September 2006.

2. “3D Rayleigh-Taylor Instability Experiments on the Omega Laser, “ Stewardship Science Academic Alliance Symposium, Washington, D.C., February 2007.

3. “Spike Extensions in Rayleigh-Taylor, Decelerating Interface Experiments,” American Physical Society, Division of Plasma Physics Conference, Orlando, FL, November 2007.

5. “Blast-wave-driven instability experiments on the Omega Laser,” Omega User Group Meeting, Rochester, New York, April 2009.

6. “Spike Morphology in blast-wave-driven Rayleigh-Taylor instability experiments,” International Conference on High Energy Density Physics, Austin, TX, May 2009.

7. "Quantification of Uncertainty in Experimental Data", Workshop on Uncertainty Quantification for Predictive Science Academic Alliance Program, Austin, TX, July 2010.

8. “Progress on supernova-relevant Rayliegh-Taylor instability experiments,” Supernova Hydrodynamics Workshop, Pleasanton, CA, April 2010.

9. “Independent driver operation at the Omega Laser Facility,” Omega Laser User Group Workshop, Rochester, NY, April 2011.

10. “National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities,” National Ignition Facility Science Technical Review, Lawrence Livermore National Laboratory, Livermore, CA, June 2011.

11. “Radiative Reverse Shock Systems on the Omega Laser,” Stewardship Science Academic Alliance Symposium, Washington, D.C., February 2011.

Refereed Publications:

1. R.P. Drake, D.R. Leibrandt, E.C. Harding, C.C. Kuranz, M.A. Blackburn H.F. Robey, B.A. Remington, M.J. Edwards, A.R. Miles, T.S. Perry, R.J. Wallace, H. Louis, J.P. Knauer, D. Arnett, “Nonlinear mixing behavior of the three-dimensional Rayleigh-Taylor instability at a decelerating interface”, *Phys. Plasmas* 11, 2829-2837 (2004).

2. Miles, A.R., M.J. Edwards, B. Blue, J.F. Hansen, H.F. Robey, R.P. Drake, C.C. Kuranz, and D.R. Leibrandt, “The effect of a short wavelength mode on the evolution of a long wavelength perturbation driven by a strong blast wave,”*Phys. Plasmas* 11, 5507-5519 (2004).

3. Kuranz, C.C., R.P. Drake, K.K. Dannenberg, P.J. Susalla, D.J. Kremer, H.F. Robey, T. Boehly, and J. Knauer, “Preheat issues in hydrodynamic HEDLA experiments, “*Astrophysics and Space Science* 298, (2005).

4. Kuranz, C.C., R.P. Drake, D.R. Leibrandt, E.C. Harding, H.F. Robey, A.R. Miles, B.E. Blue, J.F. Hansen, H. Louis, M. Bono, J. Knauer, D. Arnett, and C.A. Meakin, “Progress toward the study of laboratory scale, astrophysically relevant, turbulent plasmas,” *Astrophysics and Space Science* 298, 9-16 (2005).

5. A.R. Miles, B. Blue, M.J. Edwards, J.A. Greenough, J.F. Hansen, H.F. Robey, R.P. Drake, C. Kuranz, D.R. Leibrandt, “Transition to turbulence and the effect of initial conditions on three-dimensional compressible mixing in planar blast-wave-driven systems”, *Phys. Plasmas* 12, 056317 1-10 (2005).

6. A.B. Reighard, R.P. Drake, K.K. Danneberg, D.J. Kremer, C.C. Kuranz, M. Grosskopf, E. C. Harding, S.G. Glendinning, T.S. Perry, B.A. Remington, R.J. Wallace, D.D. Ryutov, J. Greenough, J. Knauer, T. Boehly, S. Bouquet, L. Boireau, M. Koenig & T. Vinci, "Observation of collapsing radiative shocks in laboratory experiments," *Phys. Plas.* 13, 082901 (2006).

7. C.C. Kuranz, B. E. Blue, R. P.Drake, H. F. Robey, J.F. Hansen, J. P. Knauer, M.J. Grosskopf, C. Krauland, D. C. Marion, "Dual, Orthogonal, Backlit Pinhole Radiography in Omega Experiments," *Rev. Sci. Inst.* 77, 10E327 1-4 (2006).

8. C.C. Kuranz, R.P.Drake, T. L. Donajowski, K.K. Dannenberg, M Grosskopf, D.J.Kremer, C. Krauland, D.C. Marion, H.F. Robey, B. A. Remington, J.F. Hansen, B.E. Blue, J. Knauer, T. Plewa, N. Hearn, "Assessing mix layer amplitude in 3D decelerating interface experiments," *Astrophys. & Space Sci.* 307, 115-119 (2007).

9. N.C. Hearn, T. Plewa, R.P. Drake, C.C. Kuranz, "FLASH code simulations of Rayleigh-Taylor and Richtmyer-Meshkov instabilities in laser-driven experiments," *Astrophys. & Space Sci.* 307, 227-231 (2007).

10. R. Paul Drake, Eric C. Harding, Carolyn C. Kuranz, "Approaches to turbulence in high-energy-density experiments," *Physica Scripta* T132 014011 (2008).

11. C.C. Kuranz, R.P. Drake, E.C. Harding, M.J. Grosskopf, H. F. Robey, B.A. Remington, M.J. Edwards, A.R. Miles, T.S. Perry, T. Plewa, N.C. Hearn, J.P. Knauer, D. Arnett, D.R. Leibrandt, "2D Rayleigh-Taylor instability: experiment and simulation," *Astrophys. J.* 696 749-759 (2009).

12. R.P. Drake, C.C. Kuranz, A.R. Miles, H.J. Muthsam, T. Plewa, "Stellar explosions, instabilities, and turbulence, " *Phys. Plasmas* 16, 041004 (2009).

13. C.C. Kuranz, R.P. Drake, M.J. Grosskopf, A. Budde, C. Krauland, D. C. Marion, A. J. Visco, J. Ditmar, H. F. Robey, B.A. Remington, A.R. Miles, A.B.R. Cooper, C. Sorce, T. Plewa, N.C. Hearn, K.L. Killibrew, J.P. Knauer, D. Arnett, T. Donajkowski, "3D blast-wave-driven Rayleigh-Taylor instability and the effects of long-wavelength modes," *Phys. Plasmas* 16, 056310 (2009).

14. O. A. Hurricane, J. F. Hansen, H. F. Robey, B. A. Remington, M. J. Bono, E. C. Harding, R. P. Drake, C. C. Kuranz, "A High Energy Density Shock Driven Kelvin-Helmholtz Shear Layer Experiment," Phys. Plasmas 16, 056305 (2009).

15. M. J. Grosskopf, R. P. Drake, C. C. Kuranz, A. R. Miles, J. F. Hansen, T. Plewa, N. Hearn, D. Arnett, J.C. Wheeler, "Modeling of Multi-Interface, Diverging, Hydrodynamic Experiments for the National Ignition Facility," *Astrophys. & Space Sci.* 322, 57-63 (2009).

16. C.C. Kuranz, R.P. Drake, M.J. Grosskopf, H.F. Robey, B.A. Remington, J.F. Hansen, B.E. Blue, J. Knauer, "Image Processing of Radiographs in 3D Rayleigh-Taylor Decelerating Interface Experiments," *Astrophys. & Space Sci.* 322, 57-63 (2009).

17. E.C. Harding, J.F. Hansen, O.A. Hurricane, R.P. Drake, H.F. Robey, C.C. Kuranz, B.A. Remington, M.J. Bono, M.J. Grosskopf, R.S. Gillespie "Observation of a Kelvin-Helmholtz Instability in a High-Energy-Density Plasma on the Omega Laser," *Phys. Rev. Lett.,* 103, 045005 (2009).

18. F.W. Doss, H.F. Robey, R.P. Drake, C.C. Kuranz, "Wall Shocks in High-Energy-Density Shock Tube Experiments," *Phys. Plasmas* 16, 112705 (2009).

19. R.P. Drake, F.W. Doss, B. Fryxell, M.J. Grosskopf, J.P. Holloway, B. van der Holst, C.M. Huntington, C.C. Kuranz, E.S. Myra, V.N. Nair, K.G. Powell, I.V. Sokolov, Q.F. Stout, G. Toth, A.J. Visco, A.J. Visco, M.L. Adams, J.E. Morel, B. Mallick, D. Bingham, "Using High Power Lasers to Create Radiative Shock Waves," *2009 Lasers & Electro-optics & The Pacific Rim Conference on Lasers and Electro-optics,* 1 & 2, 317-318, 2009.

20. C.C. Kuranz, F.W. Doss, R.P. Drake, M.J. Grosskopf, H.F. Robey, "Using wall shocks to measure preheat inlaser-irradiated, high-energy-density hydrodynamics experiments, *High Energy Density Physics*, 6, 215 (2010).

21. A. Budde, R.P. Drake, C.C. Kuranz, T. Plewa, N.C. Hearn, M.J. Grosskopf, "Simulation of fabrication variations in supernova hydrodynamics experiments," *High Energy Density Physics,* 6, 135 (2010).

22. C.M. Huntington, C.M. Krauland, C.C. Kuranz, R.P. Drake, "Imaging scattered x-ray radiation from Omega Shock Tube Experiments," *High Energy Density Physics*, 6, 194 (2010).

23. F.W. Doss, R.P. Drake, C.C. Kuranz, "Repeatability in Radiative Shock Experiments," *High Energy Density Physics*," 6, 157 (2010).

24. B. Fryxell, C.C. Kuranz, R.P. Drake, M.J. Grosskopf, A. Budde, T. Plewa, N. Hearn, J.F. Hanse, A.R. Miles, J. Knauer, "The Effect of Magnetic Fields on Laser Experiments of Rayleigh-Taylor Instabilities," *High Energy Density Physics*, 6, 162 (2010).

25. O.A. Hurricane, J.F. Hansen, E.C. Harding, R.P. Drake, H.F. Robey, B.A. Remington, C.C. Kuranz, M.J. Grosskopf, R.S. Gillespie, H. Park, "Understanding the implication of the data from recent high-energy-density Kelvin-Helmholtz shear layer experiments, *Journal of Physics: Conference Series,* 244, 2010.

26. C.C. Kuranz, R.P. Drake, M.J. Grosskopf, B.A. Remington, H.F. Robey, J.F. Hansen, A.R. Miles, T. Plewa, N. Hearn, J. Knauer, "Spike morphology in blast-wave-driven instability experiments," *Phys. Plasmas*, 17, 052709, 2010.

27. C.M. Huntington, C.M. Krauland, C.C. Kuranz, R.P. Drake, H.-S. Park, D.H. Kalantar, B.R. Maddox, B.A. Remington, J. Kline, *Review of Sci. Instrum.*, 81, 10E536, 2010.

28. F.W. Doss, R.P. Drake, C.C. Kuranz, "Repeatability in radiative shock experiments," *High Energy Density Physics* **6**, 157-161 (2010).

29. Ryan G. McClarren, D. Ryu, R. Paul Drake, Michael Grosskopf, Derek Bingham, Chuan-Chih Chou, Bruce Fryxell, Bart van der Holst, James Paul Holloway, Carolyn C. Kuranz, Bani Mallick, Erica Rutter, Ben R. Torralva, "A Physics Informed Emulator for Laser-Driven Radiating Shock Simulations," *Reliability Engineering and System Safety* **96**, 1194-1207 (2011)

30. M.J. Grosskopf, D.C. Marion, R.P. Drake, C.C. Kuranz, F.W. Doss, A.J. Visco, C.M. Huntington, C.M. Krauland, C.A. Di Stefano, E.C. Harding, "Target Fabrication at the University of Michigan," *Fusion Sci. & Tech*, 59, 250-256, 2011.

31. H.F. Stripling, R.G. McClarren, C.C. Kuranz, M.J. Grosskopf, E. Rutter, B.R. Torralva, "Calibration of Uncertain inputs to computer models using experimentally measured quantities and the BMARS Emulator," *Proceedings of the American Nuclear Society*, submitted 2011.

32. C.C. Kuranz, H.-S. Park, B.A. Remington, R.P. Drake, A.R. Miles, H.F. Robey, J.D. Kilkenny, C.J. Keane, D.H. Kalantar, C.M. Huntington, C.M. Krauland, E.C. Harding, M.J. Grosskopf, D.C. Marion, F.W. Doss, E. Myra, B. Maddox, B. Young, J.L. Kline, G. Kyrala, T. Plewa, J.C. Wheeler, W.D. Arnett, R.J. Wallace, E. Giraldez, A. Nikroo, "Astrophysically Relevant Radiation Hydrodynamics Experiment at the National Ignition Facility ", *Astrophysics and Space Science* **336**, 207-211 (2011)

33. R.P. Drake, F.W. Doss, R.G. McClarren, M.L. Adams, N. Amato, D.Bingham, C.C. Chou, C. DiStefano, K. Fidkowsky, B. Fryxell, T.I.Gombosi, M.J. Grosskopf, J.P. Holloway, B. van der Holst, C.M.Huntington, S. Karni, C.M. Krauland, C.C. Kuranz, E. Larsen, B. vanLeer, B. Mallick, D. Marion, W. Martin, J.E. Morel, E.S. Myra, V. Nair, K.G. Powell, L. Raushberger, P. Roe, E. Rutter, I.V. Sokolov, Q. Stout, B.R. Torralva, G. Toth, K. Thornton, A.J. Visco, "Radiative Effects in Radiative Shocks in Shock Tubes", *High Energy Density Physics* **7**, 130-140 (2011)

34. C.M. Huntington, C. C. Kuranz, R. P. Drake, A. R. Miles, S. T. Prisbrey, H.-S. Park, H. F. Robey, and B. A. Remington, "Design of Experiments to Observe Radiation Stabilized Rayleigh-Taylor Instability Growth at an Embedded Decelerating Interface," *Phys. Plasmas* **18**, 112703 (2011) DOI: 10.1063/1.3657428

35. Hye-Sook Park, D.D. Ryutov, J.S. Ross, N.L. Kugland, S.H. Glenzer, C. Plechaty, S.M. Pollaine, B.A. Remington, A. Spitkovsky, L. Gargate, G. Gregori, A. Bell, C. Murphy, Y. Sakawa, Y. Kuramitsu, T. Morita, H. Takabe, D.H. Froula, G. Fiksel, F. Miniati, M. Koenig, A. Ravasio, A. Pelka, E. Liang, N. Woolsey, C.C. Kuranz, R.P. Drake, M.J. Grosskopf, "Studying astrophysical collisionless shocks with counterstreaming plasmas from high power lasers*," High Energy Density Physics* **8**, 38-45 (2012).

36. J.S. Ross, S.H. Glenzer, P. Amendt, R. Berger, L. Divol, N.L. Kugland, O.L. Landen, C. Plechaty, B. Remington, D. Ryutov, W. Rozmus, D.H. Froula, G. Fikcel, C. Sroce, Y. Kuranmitsu, T. Morita, Y. Sakawa, H. Takabe, P. Drake, M. Grosskopf, C.C. Kuranz, G. Gregori, J. Meinecke, C.D. Murphy, M. Koenig, A. Pelka, A. Ravisio, T. vinci, E. Liang, R. Presure, A. sptikovski, F. Miniati, H.S. Park, *Physics of Plamsas,* in press.

Other Citable Publications:

1. K. K. Dannenberg, R. P. Drake, A. B. Reighard, C. C. Kuranz, D. J. Kremer, J. Riley, "Michigan target fabrication facility for laboratory astrophysics and high energy density experiments," Proceedings of Inertial Fusion and Science Applications 2003, September 2003, Monterey, CA, 791-794 (2004).

2. Nathan C. HEARN, Tomasz PLEWA, R. Paul DRAKE and Carolyn KURANZ, "FLASH Code Validation with Laser-Driven Rayleigh-Taylor and Richtmyer-Meshkov Instabilities," Proceedings of the International Workshop on the Physics of Compressible Turbulence and Mix, Paris, France, 2006.

Poster Presentations:

1. "Design of Experiments to Assess Radiative Preheat in Decelerating Interface Experiments, "Division of Plasma Physics Conference, Albuquerque, NM, October 2003.

2. "Preheat Issues and physical conditions in hydrodynamic HEDLA experiments" High Energy Density Laboratory Astrophysics Conference, Tucson, AZ, March 2004.

3. "Three-Dimensional Rayleigh-Taylor instability in decelerating interface experiments" Anomalous Absorption Conference, Gleneden Beach, OR, May 2004.

4. "Radiative preheat in decelerating interface experiments on Omega" Division of Plasma Physics Conference, Savannah, GA, November 2004.

5. "Rayleigh-Taylor Instability in Decelerating Interface Experiments" International Conference on Inertial Fusion Science and Applications, Biarritz, France, September 2005.

6. "Dual, orthogonal, backlit pinhole radiography in OMEGA experiments" High Temperature Plasma Diagnostics Conference, Williamsburg, VA, May 2006.

7. "3D Rayleigh-Taylor Instability in Decelerating Interface Experiments" International Conference on Plasma Science, Traverse City, MI, 2006.

8. "3D Rayleigh-Taylor Instability in Decelerating Interface Experiments" Division of Plasma Physics Conference, Philadelphia, PA, October 2006.

9. "Spike Morphology in blast-wave-driven Rayleigh-Taylor instability experiments" American Astronomical Society, Pasadena, CA, June 2009.

10. "Characterization of the initial state of Be in radiative shock experiment on Omega" Inertial Fusion Science and Application Conference, San Francisco, CA, September 2009.

11. “Characterization of the initial state of Be in radiative shock experiment on Omega,” Division of Plasma Physics Conference, Albuquerque, NM, October 2009.

12. “National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities,”Stewardship Science Academic Alliance Symposium, Washington, D.C., January 2010.

13. “Characterization of the initial state of Be in radiative shock experiment on Omega,” Accelerated Strategic Computing Investigator Conference, Las Vegas, NV, February 2010.

14. “Characterization of the initial state of Be in radiative shock experiment on Omega,”, Omega Laser User’s meeting, Rochester, NY, April 2010.

15. “National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities,” American Astronomical Society, May 2010.

16. "Design of early time experiments for radiative shock experiments on the Omega laser facility," Division of Plasma Physics Meeting, Chicago, IL, November 2010.

17. “Quantifying Experimental Uncertainty in Radiative Shock Experiments,” Omega Laser User Group meeting, Rochester, NY, April 2011.

18. “National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities,” American Astronomical Society, Boston, MA, May 2011.

19. “National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities,” IPELS, Whistler, CA, July 2011.

20. “National Ignition facility experiments studying the effects of a radiative shock on hydrodynamic instabilities,” Inertial Fusion Science and Applications, Bordeaux, France, September 2011.

21. “Evolution of radiative shock experiments at the Omega Laser Facility,” Division of Plasma Physics Meeting, Salt Lake City, Utah, November 2011.

Awards:

Applied Physics Fellowship, University of Michigan 2002-2004

Other Information:

Organized the Agfa Film Workshop at University of Rochester with attendees from University of Michigan, University of Rochester, and Los Alamos National Laboratory, May 2007