

Darren J. G. Craig
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Education

Ph.D. in Physics (Plasma), UNIVERSITY OF WISCONSIN - Madison, WI - 1998

B.S. in Physics, with high honor, MICHIGAN STATE UNIVERSITY - East Lansing, MI - 1994

Employment History

WHEATON COLLEGE

Associate Professor of Physics

Wheaton, IL

August 2006 - present

- Taught calculus-based introductory physics lecture and lab, physics and engineering freshman seminar, modern science skills lab, computer modeling of physical systems, electromagnetic theory, quantum mechanics, thermodynamics, experimental physics, introductory optics, advanced optics, plasma physics, and stellar astronomy.
- Developed new experimental plasma physics research project to study impulsive magnetic reconnection – the Wheaton Impulsive Reconnection Experiment (WIRX).
- PI for external grants and subawards totaling \$760,000 from 2006 – 2017.
- Mentored 23 different undergraduate students in independent research and supervised 6 honors theses. The students have presented their work at a variety of local and national meetings and have been coauthors on peer-reviewed articles.
- Physics and Engineering Department Chair, 2011 - present
- Dual Degree Engineering Program Coordinator, 2009 – 2012.

UNIVERSITY OF WISCONSIN

Associate Scientist

Assistant Scientist

USDOE Fusion Energy Postdoctoral Fellow

Research Associate - Physics Department

Research Assistant - Physics Department

Madison, WI

2004 - 2006

2001 - 2004

1999 - 2001

1998 - 1999

1994 - 1998

- Co-PI on \$6M/yr grant from the U.S. Department of Energy to study plasmas produced in the Madison Symmetric Torus (MST) - a large magnetic confinement system used for plasma science and fusion energy studies.
- Active in all phases of research including proposal writing, project planning and development, design and fabrication of apparatus, collection and interpretation of data, publishing of results, and supervision/mentoring of other researchers including students.
- Topical coordinator for research on momentum transport within the Center for Magnetic Self-Organization in Laboratory and Astrophysical Plasmas – a physics frontier center funded jointly by the National Science Foundation and the U.S. Department of Energy.

- Hardware experience - arc discharge plasma sources; electrostatic and magnetic probes; UV and visible spectroscopy; laser interferometry; high and low power electronics; data acquisition; vacuum techniques; custom spectrometer design; time series analysis techniques.
- Physics topics studied include plasma sources, plasma equilibrium and stability, transport in magnetically confined plasmas, plasma diagnostics, turbulence and nonlinear phenomena in plasmas, the magnetohydrodynamic dynamo, magnetic reconnection, and applications of plasma physics in astrophysics.

UNIVERSITY OF WISCONSIN	Madison, WI
Private Tutor - Introductory Physics	Fall 1998 – Fall 1999
Teaching Assistant - Introductory Physics	Fall 1994
HOLT SENIOR HIGH SCHOOL	Holt, MI
Science Olympiad Coach	Fall 1992 - Spring 1994
MICHIGAN STATE UNIVERSITY	East Lansing, MI
Teaching Assistant	Fall 1991 - Spring 1993
Cooperative Highly Accelerated Math Program (CHAMP)	
Undergraduate Research Assistant - National Superconducting Cyclotron Laboratory	1990 - 1994

Leadership and Service

Reviewer for Physical Review Letters and Review of Scientific Instruments
 Reviewer for NSF and USDOE research proposals in plasma physics
 College Life and Enrollment Committee at Wheaton College (Secretary, 2008 – 2010)
 Curriculum Committee at Wheaton College (2015 – present)
 Health Professions Committee at Wheaton College (2009 – 2013)
 Executive Committee of University Fusion Association (2009 – 2012)
 Facilitator for Plasma Science Christian Fellowship (2007 – present)
 Academic Staff Assembly Representative at UW – Madison
 Program Committee for APS-Division of Plasma Physics Meeting
 Program Committee for Innovative Confinement Concepts Workshop
 Selection Committee for USDOE Fusion Energy Sciences National Undergraduate Fellowship
 Subcommittee of Fusion Energy Science Advisory Committee tasked with setting priorities for the USDOE Fusion program
 Deacon Board, High Point Church, Madison, WI
 Leader, Married Couples Fellowship, High Point Church, Madison, WI
 Member, Sunday School Teacher, Small Group Leader and Coach, Crossroads Community Church, Carol Stream, IL (2010 – present)

List of Publications and Presentations

Refereed Journal Articles (87 Total)

D. Craig, D. Martin, D.J. Den Hartog, M.D. Nornberg, and J.A. Reusch, "Magnetic and velocity fluctuations from nonlinearly coupled tearing modes in the reversed field pinch with and without the reversal surface," *Phys. Plasmas* **24**, 082308 (2017).

M.M. Baltzer, D. Craig, D.J. Den Hartog, T. Nishizawa, and M.D. Nornberg, "Absolute wavelength calibration of a Doppler spectrometer with a custom Fabry-Perot optical system," *Rev. Sci. Instrum.* **87**, 11E509 (2016).

T. Nishizawa, M.D. Nornberg, D.J. Den Hartog, and D. Craig, "Upgrading a high-throughput spectrometer for high-frequency (<400 kHz) measurements," *Rev. Sci. Instrum.* **87**, 11E530 (2016).

X. Feng, M.D. Nornberg, D. Craig, D.J. Den Hartog, and S.P. Oliva, "Spectroscopic determination of the composition of a 50 kV hydrogen diagnostic neutral beam," *Rev. Sci. Instrum.* **87**, 11E543 (2016).

J.S. Sarff, A.F. Almagri, J.K. Anderson, M. Borchardt, W. Cappechi, D. Carmody, K. Caspary, B.E. Chapman, D.J. Den Hartog, J. Duff, S. Eilerman, A. Falkowski, C.B. Forest, M. Galante, J.A. Goetz, D.J. Holly, J. Koliner, S. Kumar, J.D. Lee, D. Liu, K.J. McCollam, M. McGarry, V.V. Mirnov, L. Morton, S. Munaretto, M.D. Nornberg, P.D. Nonn, S.P. Oliva, E. Parke, M.J. Pueschel, J.A. Reusch, J.P. Sauppe, A. Seltzman, C.R. Sovinec, D. Stone, D. Theucks, M. Thomas, J. Triana, P.W. Terry, J. Waksman, G.C. Whelan, D.L. Brower, W.X. Ding, L. Lin, D.R. Demers, P. Fimognari, J. Titus, F. Auriemma, S. Cappello, P. Franz, P. Innocente, R. Lorenzini, E. Martines, B. Momo, P. Piovesan, M. Puiatti, M. Spolaore, D. Terranova, P. Zanca, V.I. Davydenko, P. Deichuli, A.A. Ivanov, S. Polosatkin, N.V. Stupishin, D. Spong, D. Craig, H. Stephens, R.W. Harvey, M. Cianciosa, J.D. Hanson, B.N. Breizman, M. Li, and L.J. Zheng, "Overview of results from the MST reversed field pinch experiment," *Nucl. Fusion* **55**, 104006 (2015).

M.S. Cartolano, D. Craig, D.J. Den Hartog, S.T.A. Kumar, and M.D. Nornberg, "Statistical analysis of variations in impurity ion heating at reconnection events in the Madison Symmetric Torus," *Phys. Plasmas* **21**, 012510 (2014).

J.S. Sarff, A.F. Almagri, J.K. Anderson, M. Borchardt, D. Carmody, K. Caspary, B.E. Chapman, D.J. Den Hartog, J. Duff, S. Eilerman, A. Falkowski, C.B. Forest, J.A. Goetz, D.J. Holly, J.-H. Kim, J. King, J. Ko, J. Koliner, S. Kumar, J.D. Lee, D. Liu, R. Magee, K.J. McCollam, M. McGarry, V.V. Mirnov, M.D. Nornberg, P.D. Nonn, S.P. Oliva, E. Parke, J.A. Reusch, J.P. Sauppe, A. Seltzman, C.R. Sovinec, H. Stephens, D. Stone, D. Theucks, M. Thomas, J. Triana, P.W. Terry, J. Waksman, D.L. Brower, W.X. Ding, L. Lin, D.R. Demers, P. Fimognari, J. Titus, S. Cappello, P. Franz, P. Innocente, R. Lorenzini, E. Martines, B. Momo, P. Piovesan, M. Puiatti, M. Spolaore, D. Terranova, P. Zanca, V. Belykh, V.I. Davydenko, P. Deichuli, A.A. Ivanov, S. Polosatkin, N.V. Stupishin, D. Spong, D. Craig, R.W. Harvey, M. Cianciosa, and J.D. Hanson, "Overview of results from the MST reversed field pinch experiment," *Nucl. Fusion* **53**, 104017 (2013).

S.T.A. Kumar, A.F. Almagri, D. Craig, D.J. Den Hartog, M.D. Nornberg, J.S. Sarff, and P.W. Terry, "Charge-to-mass-ratio-dependent ion heating during magnetic reconnection in the MST RFP," *Physics of Plasmas* **20**, 056501 (2013).

S.T.A. Kumar, D.J. Den Hartog, V.V. Mirnov, K.J. Caspary, R.M. Magee, D.L. Brower, B.E. Chapman, D. Craig, W.X. Ding, S. Eilerman, G. Fiksel, L. Lin, M. Nornberg, E. Parke, J.A. Reusch, and J.S. Sarff, "Classical confinement and outward convection of impurity ions in the MST RFP," *Physics of Plasmas* **19**, 056121 (2012).

S.T.A. Kumar, D.J. Den Hartog, B.E. Chapman, M. O'Mullane, M. Nornberg, D. Craig, S. Eilerman, G. Fiksel, E. Parke, and J. Reusch, "High resolution charge-exchange spectroscopic measurements of aluminum ions in a high temperature plasma," *Plasma Physics and Controlled Fusion* **54**, 012002 (2012).

S.T.A. Kumar, D.J. Den Hartog, K.J. Caspary, R.M. Magee, V.V. Mirnov, B.E. Chapman, D. Craig, G. Fiksel, and J.S. Sarff, "Classical Impurity Ion Confinement in a Toroidal Magnetized Fusion Plasma," *Physical Review Letters* **108**, 125006 (2012).

S.T.A. Kumar, D.J. Den Hartog, R.M. Magee, G. Fiksel, and D. Craig, "Behaviour of carbon and boron impurities in the Madison Symmetric Torus," *Plasma Physics and Controlled Fusion* **53**, 032001 (2011).

R.M. Magee, D.J. Den Hartog, G. Fiksel, S.T.A. Kumar, and D. Craig, "Toroidal charge exchange recombination spectroscopy measurements on MST," *Review of Scientific Instruments* **81**, 10D716 (2010).

K.J. McCollam, J.K. Anderson, A.P. Blair, D. Craig, D.J. Den Hartog, F. Ebrahimi, R.O'Connell, J.A. Reusch, J.S. Sarff, H.D. Stephens, D.R. Stone, D.L. Brower, B.H. Deng, and W.X. Ding, "Equilibrium evolution in oscillating-field current-drive experiments," *Physics of Plasmas* **17**, 082506 (2010).

B.E. Chapman, A.F. Almagri, J.K. Anderson, D.L. Brower, K.J. Caspary, D.J. Clayton, D. Craig, D.J. Den Hartog, W.X. Ding, D.A. Ennis, G. Fiksel, S. Gangadhara, S. Kumar, R.M. Magee, R. O'Connell, E. Parke, S.C. Prager, J.A. Reusch, J.S. Sarff, H.D. Stephens, and Y.M. Yang, "Generation and confinement of hot ions and electrons in a reversed-field pinch plasma," *Plasma Physics and Controlled Fusion* **52**, 124048 (2010).

D.A. Ennis, D. Craig, S. Gangadhara, J.K. Anderson, D.J. Den Hartog, F. Ebrahimi, G. Fiksel, and S.C. Prager, "Local measurements of tearing mode flows and the magnetohydrodynamic dynamo in the Madison Symmetric Torus reversed-field pinch," *Physics of Plasmas* **17**, 082102 (2010).

B.E. Chapman, J.W. Ahn, A.F. Almagri, J.K. Anderson, F. Bonomo, D.L. Brower, D.R. Burke, K. Caspary, D.J. Clayton, S.K. Combs, W.A. Cox, D. Craig, B.H. Deng, D.J. Den Hartog, W.X. Ding, F. Ebrahimi, D.A. Ennis, G. Fiksel, C.B. Forest, C.R. Foust, P. Franz, S. Gangadhara, J.A. Goetz, M.C. Kaufman, J.G. Kulpin, A. Kuritsyn, R.M. Magee, M.C. Miller, V.V. Mirnov, P.D. Nonn, R.O'Connell, S.P. Oliva, S.C. Prager, J.A. Reusch, J.S. Sarff, H.D. Stephens, M.D. Wyman, and T. Yates, "Improved-confinement plasmas at high temperature and high beta in the MST RFP," *Nuclear Fusion* **49**, 104020 (2009).

M.D. Wyman, B.E. Chapman, J.W. Ahn, A.F. Almagri, J.K. Anderson, F. Bonomo, D.L. Brower, S.K. Combs, D. Craig, D.J. Den Hartog, B.H. Deng, W.X. Ding, F. Ebrahimi, D.A. Ennis, G. Fiksel, C.R. Foust, P. Franz, S. Gangadhara, J.A. Goetz, R. O'Connell, S.P. Oliva, S.C. Prager, J.A. Reusch, J.S. Sarff, H.D. Stephens, and T. Yates, "Plasma behaviour at high β and high density in the Madison Symmetric Torus RFP," *Nuclear Fusion* **49**, 015003 (2009).

P. Piovesan, A. Almagri, B.E. Chapman, D. Craig, L. Marrelli, P. Martin, S.C. Prager, and J.S. Sarff, "Filamentary current structures in the Madison Symmetric Torus," *Nuclear Fusion* **48**, 095003 (2008).

S. Gangadhara, D. Craig, D. A. Ennis, D. J. Den Hartog, G. Fiksel, and S. C. Prager, "Ion heating during reconnection in the Madison Symmetric Torus reversed field pinch," *Physics of Plasmas* **15**, 056121 (2008).

W. X. Ding, D. L. Brower, D. Craig, B. E. Chapman, D. Ennis, G. Fiksel, S. Gangadhara, D. J. Den Hartog, V. V. Mirnov, S. C. Prager, J. S. Sarff, V. Svidzinski, P. W. Terry, and T. Yates, "Stochastic magnetic field driven charge transport and zonal flow during magnetic reconnection," *Physics of Plasmas* **15**, 055901 (2008).

M.D. Wyman, B.E. Chapman, J.W. Ahn, A.F. Almagri, J.K. Anderson, F. Bonomo, D.L. Brower, S.K. Combs, D. Craig, D.J. Den Hartog, B.H. Deng, W.X. Ding, F. Ebrahimi, D.A. Ennis, G. Fiksel, C.R. Foust, P. Franz, S. Gangadhara, J.A. Goetz, R. O'Connell, S.P. Oliva, S.C. Prager, J.A. Reusch, J.S. Sarff, H.D. Stephens, and T. Yates, "High- β , improved confinement reversed-field pinch plasmas at high density," *Physics of Plasmas* **15**, 010701 (2008).

J.-W. Ahn, D. Craig, G. Fiksel, D.J. Den Hartog, J.K. Anderson, and M.G. O'Mullane, "Emission intensities and line ratios from a fast helium neutral beam," *Physics of Plasmas* **14**, 083301 (2007).

D.J. Den Hartog, J.-W. Ahn, A.F. Almagri, J.K. Anderson, A.D. Beklemishev, A.P. Blair, F. Bonomo, M.T. Borchardt, D.L. Brower, D.R. Burke, M. Cengher, B.E. Chapman, S. Choi, D.J. Clayton, W.A. Cox, S.K. Combs, D. Craig, H.D. Cummings, V.I. Davydenko, D.R. Demers, B.H. Deng, W.X. Ding, F. Ebrahimi, D.A. Ennis, G. Fiksel, C. Foust, C.B. Forest, P. Franz, L. Frassinetti, S. Gangadhara, J.A. Goetz, R.W. Harvey, D.J. Holly, B.F. Hudson, A.A. Ivanov, M.C. Kaufman, A.V. Kuritsyn, A.A. Lizunov, T.W. Lovell, R.M. Magee, L. Marrelli, P. Martin, K.J. McCollam, M.C. Miller, V.V. Mirnov, P.D. Nonn, R. O'Connell, S.P. Oliva, P. Piovesan, S.C. Prager, I. Predebon, J.A. Reusch, J.S. Sarff, V.A. Svidzinski, T.D. Tharp, M.A. Thomas, Yu.A. Tsidulko, M.D. Wyman and T. Yates, "Recent improvements in confinement and beta in the MST reversed-field pinch," *Nuclear Fusion* **47**, L17 (2007).

W.X. Ding, D.L. Brower, D. Craig, B.H. Deng, S.C. Prager, J.S. Sarff, and V. Svidzinski, "Nonambipolar magnetic-fluctuation-induced particle transport and plasma flow in the MST reversed-field pinch," *Physical Review Letters* **99**, 055004 (2007).

D. Craig, D.J. Den Hartog, D.A. Ennis, S. Gangadhara, and D. Holly, "High throughput spectrometer for fast localized Doppler measurements," *Review of Scientific Instruments* **78**, 013103 (2007).

- S. Gangadhara, D. Craig, D.A. Ennis, D.J. Den Hartog, G. Fiksel, and S.C. Prager, "Spatially resolved measurements of ion heating during impulsive reconnection in the Madison Symmetric Torus," *Physical Review Letters* **98**, 075001 (2007).
- D. Craig, R. Goldston, T.R. Jarboe, B.A. Nelson, C.R. Sovinec, S. Woodruff, and G. Wurden, "Chair summaries from the 2006 Innovative Confinement Concepts (ICC) Workshop," *Journal of Fusion Energy* **26**, 3 (2007).
- W. X. Ding, D.L. Brower, B.H. Deng, A.F. Almagri, D. Craig, G. Fiksel, V. Mirnov, S.C. Prager, J.S. Sarff, and V. Svidzinski, "The Hall dynamo effect and nonlinear mode coupling during sawtooth magnetic reconnection," *Physics of Plasmas* **13**, 112306 (2006).
- D.J. Den Hartog, D. Craig, D.A. Ennis, G. Fiksel, S. Gangadhara, D.J. Holly, J.C. Reardon, V.I. Davydenko, A.A. Ivanov, A.A. Lizunov, M.G. O'Mullane, and H.P. Summers, "Advances in neutral-beam-based diagnostics on the Madison Symmetric Torus reversed-field pinch," *Review of Scientific Instruments* **77**, 10F122 (2006).
- S. Gangadhara, D. Craig, D.A. Ennis, and D.J. Den Hartog, "Modeling fast charge exchange recombination spectroscopy measurements from the Madison Symmetric Torus," *Review of Scientific Instruments* **77**, 10F109 (2006).
- A. Kuritsyn, D. Craig, G. Fiksel, M. Miller, D. Cylinder, and M. Yamada, "Local measurements of plasma ion dynamics with optical probes," *Review of Scientific Instruments* **77**, 10F112 (2006).
- P. Franz, F. Bonomo, L. Marrelli, P. Martin, P. Pioveson, G. Spizzo, B.E. Chapman, D. Craig, D.J. Den Hartog, J.A. Goetz, R.O'Connell, S.C. Prager, M. Reyfman, and J.S. Sarff, "Two-dimensional time resolved measurements of the electron temperature in MST," *Review of Scientific Instruments* **77**, 10F318 (2006).
- J.-W. Ahn, D. Craig, G. Fiksel, D.J. Den Hartog, J.K. Anderson, and M.G. O'Mullane, "Development of fast helium emission spectroscopy on MST," *Review of Scientific Instruments* **77**, 10F114 (2006).
- S.H. Choi, D. Craig, S.C. Prager, "Cause of Sudden Magnetic Reconnection in a Laboratory Plasma," *Physical Review Letters* **96**, 145004 (2006).
- P. Franz, L. Marrelli, P. Piovesan, I. Predebon, F. Bonomo, L. Frassinetti, P. Martin, G. Spizzo, B.E. Chapman, D. Craig, and J.S. Sarff, "Tomographic imaging of resistive mode dynamics in the Madison Symmetric Torus reversed-field pinch," *Physics of Plasmas* **13**, 012510 (2006).
- S.C. Prager, J. Adney, A. Almagri, J. Anderson, A. Blair, D.L. Brower, M. Cengher, B.E. Chapman, S. Choi, D. Craig, S. Combs, D.R. Demers, D.J. Den Hartog, B. Deng, W.X. Ding, F. Ebrahimi, D. Ennis, G. Fiksel, R. Fitzpatrick, C. Foust, C.B. Forest, P. Franz, L. Frassinetti, J. Goetz, D. Holly, B. Hudson, M. Kaufman, T. Lovell, L. Marrelli, P. Martin, K. McCollam, V.V. Mirnov, P. Nonn, R. O'Connell, S. Oliva, P. Piovesan, I. Predebon, J.S. Sarff, G. Spizzo, V. Svidzinski, M. Thomas, E. Uchimoto, R. White and M. Wyman, "Overview of Results in the MST RFP experiment," *Nuclear Fusion*, **45**, S276 (2005).

- L. Marrelli, L. Frassinetti, P. Martin, D. Craig, and J.S. Sarff, "Reduced intermittency in the magnetic turbulence of reversed field pinch plasmas," *Physics of Plasmas*, **12**, 030701 (2005).
- P. Piovesan, D. Craig, L. Marrelli, S. Cappello, and P. Martin, "Measurements of the MHD Dynamo in the Quasi-Single Helicity Reversed-Field Pinch," *Physical Review Letters*, **93**, 235001 (2004).
- D.R. Demers, K.A. Conner, P.M. Schoch, R.J. Radke, J.K. Anderson, D. Craig, and D.J. Den Hartog, "Development of magnetic field line mapping via heavy ion beam spectral imaging," *Review of Scientific Instruments*, **75**, 4187 (2004).
- W.X. Ding, D.L. Brower, B.H. Deng, D. Craig, S.C. Prager, and V. Svidzinski, "Laser Faraday Rotation Measurement of current density fluctuations and electromagnetic torque," *Review of Scientific Instruments*, **75**, 3387 (2004).
- W. X. Ding, D. L. Brower, D. Craig, B. H. Deng, G. Fiksel, V. Mirnov, S. C. Prager, J. S. Sarff, and V. Svidzinski, "Measurement of the Hall Dynamo Effect during Magnetic Reconnection in a High-Temperature Plasma," *Physical Review Letters*, **93**, 045002-1 (2004).
- B.E. Chapman, R. Fitzpatrick, D. Craig, P. Martin, G. Spizzo, "Observation of tearing mode deceleration and locking due to eddy currents induced in a conducting shell," *Physics of Plasmas*, **11**, 2156 (2004).
- S. D. Terry, D. L. Brower, W. X. Ding, J. K. Anderson, T. M. Biewer, B. E. Chapman, D. Craig, C. B. Forest, R. O'Connell, S. C. Prager, and J. S. Sarff, "Measurement of current profile dynamics in the Madison Symmetric Torus," *Physics of Plasmas*, **11**, 1079 (2004).
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- J.S. Sarff, J.K. Anderson, T.M. Biewer, D.L. Brower, B.E. Chapman, P.K. Chattopadhyay, D. Craig, B. Deng, W.X. Ding, G. Fiksel, C.B. Forest, J.A. Goetz, R. O'Connell, S.C. Prager, and M.A. Thomas, "Tokamak-like confinement at a high beta and low field in the reversed field pinch," *Plasma Physics and Controlled Fusion*, **45**, A457 (2003).
- H. Sakakita, D. Craig, J.K. Anderson, T.M. Biewer, S.D. Terry, B.E. Chapman, D.J. Den Hartog, S.C. Prager, "Behavior of Impurity Ion Velocities during the Pulsed Poloidal Current Drive in the Madison Symmetric Torus Reversed-Field Pinch," *Japanese Journal of Applied Physics*, **42**, L505 (2003).
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J.S. Sarff, A.F. Almagri, J.K. Anderson, T.M. Biewer, A.P. Blair, M. Cengher, B.E. Chapman, P.K. Chattopadhyay, D. Craig, D.J. Den Hartog, F. Ebrahimi, G. Fiksel, C.B. Forest, J.A. Goetz, D. Holly, B. Hudson, T.W. Lovell, K.J. McCollam, P.D. Nonn, R. O'Connell, S.P. Oliva, S.C. Prager, J.C. Reardon, M.A. Thomas, M.D. Wyman, D.L. Brower, W.X. Ding, S.D. Terry, M.D. Carter, V.I. Davydenko, A.A. Ivanov, R.W. Harvey, R.I. Pinsker and C. Xiao, "Tokamak-like confinement at a high beta and low toroidal field in the MST reversed field pinch," *Nuclear Fusion*, **43**, 1684 (2003).

D.L. Brower, W.X. Ding, S.D. Terry, J.K. Anderson, T.M. Biewer, B.E. Chapman, D. Craig, C.B. Forest, S.C. Prager, and J.S. Sarff, "Laser Polarimetric measurement of equilibrium and fluctuating magnetic field in a reversed field pinch," *Review of Scientific Instruments*, **74**, 1534 (2003).

J.C. Reardon, D. Craig, D.J. Den Hartog, G. Fiksel, and S.C. Prager, "Comparison of ion temperature diagnostics on the Madison symmetric torus reversed-field pinch," *Review of Scientific Instruments*, **74**, 1892 (2003).

D.R. Demers, P.M. Schoch, R.J. Radke, J.K. Anderson, D. Craig, and D.J. Den Hartog, "Spectroscopic ion beam imaging for investigations into magnetic field mapping of a plasma," *Review of Scientific Instruments*, **74**, 2103 (2003).

J.K. Anderson, P.L. Andrew, B.E. Chapman, D. Craig, and D.J. Den Hartog, "Direct removal of edge-localized pollutant emission in a near-infrared bremsstrahlung measurement," *Review of Scientific Instruments*, **74**, 2107 (2003).

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Ph.D. Dissertation

D. Craig, *Controlling Fluctuations and Transport in the Reversed Field Pinch with Edge Current Drive and Plasma Biasing*, Ph.D. thesis, University of Wisconsin - Madison (1998).

Seminar and Colloquia Presentations

"Ion Heating in the Madison Symmetric Torus," Wheaton Science Division Lunch Seminar, 2013 (with M. Cartolano).

"Opportunities for Christians in Physics," Wheaton Science Division Lunch Seminar, 2012.

"Magnetic Reconnection in Space and in the Lab," Seminar for Naperville Astronomical

Association, 2011.

“The Wheaton Impulsive Reconnection Experiment,” Plasma Physics Group Meeting, University of Wisconsin – Madison, 2008.

“Magnetic Reconnection: A Hot Topic in Plasma Physics,” Physics Department Seminar, Wheaton College, 2006.

“Motional Stark Effect Measurements of Magnetic Field in MST,” Atomic Physics Seminar, University of Wisconsin - Madison, 2002.

“Measuring Fluctuations and Transport in the Core of MST,” Plasma Physics Seminar, Columbia University, 1999.

“Electrostatic Current Injection in the MST,” Plasma Physics Seminar, University of Wisconsin - Madison, 1998.

Invited Conference Presentations

“Ion Heating and Energization in MST,” General Meeting of the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Santa Fe, NM, 2014.

“Ion Heating and Energization in MST,” Joint International Stellerator and Reversed Field Pinch Workshop, Padua, Italy, 2013.

“Momentum Transport and Flow Generation from Stochastic Magnetic Fields,” General Meeting of the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Manchester, NH, 2007.

“Ion Heating During Reconnection Events in MST,” Invited Talk, April Meeting of the American Physical Society, Dallas, TX, 2006.

“Reconnection and Transport in MST,” Invited Talk, Easter Meeting on Stability and Confinement of Magnetized Plasmas, Turin, Italy, 2005.

“Turbulence and Its Effects in Reversed Field Pinch Plasmas,” Invited Talk, Meeting on the Interrelations between Plasma Experiments in Laboratory and Space, Whitefish, MT, 2003.

“An Overview of Recent RFP Research,” Invited Talk, Innovative Confinement Concepts Workshop, Seattle, WA, 2003.

“Momentum Transport in the MST Reversed Field Pinch,” Invited Talk, Joint U.S.-European Transport Task Force Workshop, Fairbanks, AK, 2001.

“Controlling Edge Resonant Modes and Transport in the MST Reversed Field Pinch,” Invited Talk, Meeting of the American Physical Society - Division of Plasma Physics, Seattle, WA, 1999.

“Improved Confinement Regimes and the Importance of Flows in the Reversed Field Pinch,”

Invited Talk, Joint U.S.-European Transport Task Force Workshop, Atlanta, GA, 1998.

Contributed Conference Presentations

“Dynamics of $m=0$ modes in the RFP,” Meeting of the American Physical Society – Division of Plasma Physics, San Jose, CA, 2016.

“Behavior of $m=0$ modes in DEBS modeling and MST plasmas,” Meeting of the American Physical Society – Division of Plasma Physics, Savannah, GA, 2015.

“Effects of $m=0$ mode suppression on $m=1$ magnetic and velocity fluctuations in the RFP,” Meeting of the American Physical Society – Division of Plasma Physics, New Orleans, LA, 2014.

“Ion heating during magnetic reconnection in a high temperature toroidal plasma,” American Astronomical Society Meeting, Indianapolis, IN, 2013.

“Changes in core resonant $m=1$ tearing mode activity with and without edge-resonant $m=0$ tearing modes in the MST RFP,” Meeting of the American Physical Society – Division of Plasma Physics, Providence, RI, 2012.

“Magnetic Structure and Bursty Events in a Current-Carrying Arcade,” Meeting of the American Physical Society – Division of Plasma Physics, Salt Lake City, UT, 2011.

“The Wheaton Impulsive Reconnection Experiment,” Meeting on the Interrelations between Plasma Experiments in Laboratory and Space, Whistler, Canada, 2011.

“Emission Structures and Bursty Events in WIRX,” April Meeting of the American Physical Society, Anaheim, CA, 2011.

“Emission Structures and Bursty Events in WIRX,” Meeting of the American Physical Society – Division of Plasma Physics, Chicago, IL, 2011.

“First Results from the Wheaton Impulsive Reconnection Experiment,” April Meeting of the American Physical Society, Washington, D.C., 2010.

“First Results from the Wheaton Impulsive Reconnection Experiment,” Meeting of the American Physical Society – Division of Plasma Physics, Atlanta, GA, 2009.

“The Wheaton Impulsive Reconnection Experiment,” April Meeting of the American Physical Society, Denver, CO, 2009.

“The Wheaton Impulsive Reconnection Experiment,” Meeting of the American Physical Society – Division of Plasma Physics, Dallas, TX, 2008.

“Spectral Motional Stark Effect Measurements in MST,” Meeting of the American Physical Society – Division of Plasma Physics, Philadelphia, PA, 2006.

“Ion Confinement and Heating in the MST Reversed Field Pinch,” European Physical Society Conference on Controlled Fusion and Plasma Physics, Rome, Italy, 2006.

“Overview of Physics Advances in MST,” Innovative Confinement Concepts Workshop, Austin, TX, 2006.

“Measurement of Hall Effects During Reconnection in the Madison Symmetric Torus,” Fall American Geophysical Union Meeting, San Francisco, CA, 2005.

“Driven and Spontaneous Reconnection in the Lab and in Astrophysics,” Meeting of the American Physical Society – Division of Plasma Physics, Denver, CO, 2005.

“Experimental Tests of Two-Fluid Relaxation,” General Meeting of the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Princeton, NJ, 2005.

“Driven and Spontaneous Reconnection in MST,” General Meeting of the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, San Diego, CA, 2005.

“Fast Motional Stark Effect Measurements in MST,” Meeting of the American Physical Society – Division of Plasma Physics, Savannah, GA, 2004.

“New Observations Concerning the Origin and Consequences of MHD Activity in the MST Reversed Field Pinch,” Fusion Energy Conference of the International Atomic Energy Agency, Lisboa, Portugal, 2004.

“Momentum Transport,” General Meeting of the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Madison, WI, 2004.

“Ion Heating in MST,” International Reversed Field Pinch Workshop, Padova, Italy, 2004.

“A High Throughput Spectrometer for Fast Localized Doppler Measurements,” High Temperature Plasma Diagnostics Meeting, San Diego, CA, 2004.

“MST Progress and Plans,” Meeting of the American Physical Society - Division of Plasma Physics, Albuquerque, NM, 2003.

“Momentum Transport,” Planning Meeting for the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Chicago, IL, 2003.

“An Overview of Momentum Transport in Laboratory Plasmas,” Topical Planning Meeting for the Center on Magnetic Self-Organization in Laboratory and Astrophysical Plasmas, Princeton, NJ, 2003.

“Advances in Our Understanding of Fluctuation-Induced Transport,” International Reversed Field Pinch Workshop, Tsukuba, Japan, 2003.

“Spectral Motional Stark Effect Measurements in MST,” Meeting of the American Physical Society - Division of Plasma Physics, Orlando, FL, 2002.

“The Environment for ADAS at the University of Wisconsin - Madison,” Atomic Data and Analysis Structure (ADAS) Workshop, Cadarache, France, 2002.

“Auxiliary Heating and Current Drive in the MST Reversed Field Pinch,” European Physical Society Conference on Controlled Fusion and Plasma Physics, Montreux, Switzerland, 2002.

“Non-reversed Discharges - A Tool for Understanding Reversed Field Pinch Physics,” Meeting of the American Physical Society - Division of Plasma Physics, Long Beach, CA, 2001.

“The Importance of Multi-Mode Control in the Reversed Field Pinch,” Workshop on Active MHD Control, Princeton, NJ, 2000.

“Localized Measurements of Impurity Ion Dynamics in MST,” Meeting of the American Physical Society - Division of Plasma Physics, Quebec City, Canada, 2000.

“First CHERS and MSE Results from the MST Reversed Field Pinch,” Topical Conference on High Temperature Plasma Diagnostics, Tucson, AZ, 2000.

“Transport Reduction in the MST Reversed Field Pinch via Plasma Edge Control,” European Physical Society Conference on Controlled Fusion and Plasma Physics, Budapest, Hungary, 2000.

“Understanding and Controlling Edge Resonant Modes in MST,” International Reversed Field Pinch Workshop, Madison, WI, 2000.

“Generation and Evolution of Plasma Flow in the Reversed Field Pinch,” Innovative Confinement Concepts Workshop, San Francisco, CA, 2000.

“Flow Structure and Dynamo in a Laboratory Plasma,” Meeting on the Interrelations between Plasma Experiments in Laboratory and Space, Kreuth, Germany, 1999.

“Spectroscopic Measurement of Plasma Flow Fluctuations and the MHD Dynamo in a Laboratory Plasma,” Centennial Meeting of the American Physical Society, Atlanta, GA, 1999.

“Response of Magnetic Fluctuations to Electrostatic Current Drive in MST,” Meeting of the American Physical Society - Division of Plasma Physics, New Orleans, LA, 1998.

“Electrostatic Current Injection in the MST Reversed Field Pinch,” Meeting of the American Physical Society - Division of Plasma Physics, Pittsburgh, PA, 1997.

“Electrostatic Current Injection for Current Profile Control and Confinement Improvement in MST,” Joint U.S.-European Transport Task Force Workshop, Madison, WI, 1997.

“Electrostatic Current Injection for Current Profile Control and Fluctuation Reduction in MST,” Meeting of the American Physical Society - Division of Plasma Physics, Denver, CO, 1996.

“Current Profile Control and Fluctuation Reduction in MST via Electrostatic Current Injection,” IEEE International Conference on Plasma Science, Boston, MA, 1996.

“Current Profile Control and Fluctuation Reduction in MST via Electrostatic Current Injection,” Meeting of the American Physical Society - Division of Plasma Physics, Louisville, KY, 1995.

“Techniques in Data Analysis with the MSU 4π Array,” Argonne Symposium for Undergraduates in Science, Engineering, and Mathematics, Argonne National Laboratory, Argonne, IL, 1991.