Curriculum Vitae

RYAN D. MCBRIDE

Professor, University of Michigan
Nuclear Engineering & Radiological Sciences Department
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RESEARCH INTERESTS

Plasma physics, high-energy-density physics, nuclear fusion (magneto-inertial fusion, inertial confinement fusion, and fusion energy), pulsed-power science, advanced diagnostic instrumentation (imaging detector technology and micro-electromagnetic sensors), laboratory astrophysics, dynamic material properties experiments, and radiation source development (x-rays, neutrons, and high-power microwaves)

EDUCATION

- Ph.D., Cornell University, January 2009
  - Major / Minor: Electrical Engineering / Applied Physics
  - Dissertation: "Implosion dynamics, radiation characteristics, and spectroscopic measurements of wire-array z-pinches on the Cornell Beam Research Accelerator"
  - Thesis Advisor: Professor David Hammer, Ph.D.
  - GPA: 3.96/4.0
- M.S., Electrical Engineering, Cornell University, May 2007
- M.Eng., Electrical Engineering, Cornell University, May 2001
  - Project Report: "Design of a user interface to log digital receiver data for the CUPRI radar"
  - Certificate for Engineering Management Option
  - Certificate for Systems Engineering Option
  - Member of the Cornell Formula SAE racing team, 2000–2001
- B.S., Electrical Engineering, State University of New York, Binghamton, May 2000

RESEARCH & LEADERSHIP EXPERIENCE

- Nuclear Engineering & Radiological Sciences (NERS), University of Michigan, 8/2016–present
  - Professor (with tenure), 9/2022–present
  - Associate Professor (with tenure), 9/2021–8/2022
  - Associate Professor (without tenure), 8/2016–8/2021
  - Director of the Plasma, Pulsed-Power, and Microwave Laboratory, 5/2021–present
  - Director of the NNSA Center for Magnetic Acceleration, Compression, and Heating (MACH), 10/2023–present
  - Courses Taught: NERS 211: Introduction to Nuclear Engineering & Radiological Sciences
    NERS 344: Introduction to Fluid Mechanics
    NERS 471: Introduction to Plasma Physics & Controlled Fusion
    NERS 575: Plasma Generation & Diagnostics Laboratory
    NERS 590: Pulsed Power for HEDP, HPM, and Nuclear Fusion
- No-Fee Consultant, Radiation and Fusion Physics Group, Sandia National Laboratories, 8/2016–Present
- Manager, High Energy Density Experiments Department, Sandia National Laboratories, 1/2015–8/2016
  - Supervised Ph.D. experimentalists and the cryogenics development team
  - The group was responsible for designing and executing inertial confinement fusion (ICF) experiments on the 30-MA Z pulsed-power accelerator
  - Team Lead for the Implosion Dynamics focus area (12 Ph.D. researchers) within the Magnetized Liner Inertial Fusion (MagLIF) program at Sandia
- Principal Member of the Technical Staff, Physics, Sandia National Laboratories, 1/2015–8/2016
  - Principal Investigator on a three-year, $1.3M, Laboratory Directed Research and Development (LDRD) project to study the physics of magnetic flux compression on the Z accelerator
  - Developed a new semi-analytic model of the Magnetized Liner Inertial Fusion concept
- Senior Member of the Technical Staff, Physics, Sandia National Laboratories, 11/2008–1/2015

- Principal Investigator on several experimental campaigns to study the implosions of initially solid beryllium liners (tubes) on the Z accelerator for applications to inertial confinement fusion and dynamic material properties experiments
- Graduate Research Assistant, Laboratory of Plasma Studies, Cornell University, 9/2004–11/2008
- Graduate Research Assistant, Space Plasma Physics Laboratory, Cornell University, 6/2003–8/2004

PUBLICATIONS & PRESENTATIONS OVERVIEW

- 77 publications in peer-reviewed journals (8 as first author, 3 as second author, 7 as third author, 15 as last author)
  - 9 publications in *Physical Review Letters* (1 as first author, 2 as second author, 1 as third author, 1 as last author)
- 29 publications in conference proceedings (1 as first author, 6 as third author, 4 as last author)
- 4 national laboratory library maintained technical reports (1 as first author, 1 as second author)
- 51 oral and poster presentations given as first author (27 as invited talks)
- Hirsch "*h*-index" rating of 33, with >3800 citations, as per Google Scholar

INDUSTRY EXPERIENCE

- Endicott Interconnect Technologies, Inc., Engineer/Scientist, 11/2002–5/2003
- IBM, Microelectronics Division, Engineer/Scientist, 6/2001–11/2002
- General Electric Company, Engineering Co-op, Summer 1999

TEACHING EXPERIENCE

Courses Taught at the University of Michigan as the Principal Faculty Instructor
Q1: Overall, this was an excellent course (out of 5.0)
Q2: Overall, the instructor was an excellent teacher (out of 5.0)

Term	Course No.	Title	Enrollment	Q1 Score	Q2 Score
F2016	NERS 471 (3 credit hours)	Intro to Plasmas & Fusion	14	4.3	4.7
W2017	NERS 575 (4 credit hours)	Plasma Generation & Diagnostics Lab	10	4.6	4.9
F2017	NERS 471 (3 credit hours)	Intro to Plasmas & Fusion	30	4.0	4.2
W2018	NERS 575 (4 credit hours)	Plasma Generation & Diagnostics Lab	16	4.3	4.6
F2018	NERS 471 (3 credit hours)	Intro to Plasmas & Fusion	31	4.8	4.9
W2019	NERS 575 (4 credit hours)	Plasma Generation & Diagnostics Lab	17	5.0	5.0
F2019	NERS 471 (3 credit hours)	Intro to Plasmas & Fusion	25	4.6	4.6
W2020 (COVID)	NERS 575 (4 credit hours)	Plasma Generation & Diagnostics Lab	17	4.5	4.8
F2020 (COVID)	NERS 590-2 (3 credit hours)	Pulsed Power for High Energy Density Physics	13	4.8	4.9
W2021 (COVID)	NERS 575 (4 credit hours)	Plasma Generation & Diagnostics Lab	16	4.7	5.0
F2021 (COVID)	NERS 211 (4 credit hours)	Introduction to Nuclear Engineering	54	4.2	4.3
W2022 (COVID)	NERS 344 (3 credit hours)	Fluid Mechanics for Nuclear Engineers	20	4.3	4.7
F2022	NERS 590-2 (3 credit hours)	Pulsed Power for High Energy Density Physics	11	5.0	5.0
W2023	NERS 344 (3 credit hours)	Fluid Mechanics for Nuclear Engineers	10	4.0	4.0

- Project Faculty Advisor, NERS 491/492: Senior Design Course, F2019–W2020, F2020–W2021, F2021–W2022
- Faculty Guest Lecturer (1 lecture), Purdue University, NUCL 697: Pulsed Power and Vacuum Electronics, Fall 2020
- Faculty Guest Lecturer (2 lectures), High Energy Density Physics Summer School, University of Michigan, June 2018, June 2022
- Faculty Guest Lecturer (1 lecture), NERS 201/290: Survey of Nuclear Engineering and Radiological Sciences, Winter 2018, Winter 2019, Winter 2020, Winter 2021, Winter 2022
- Faculty Guest Lecturer (2 lectures), NERS 425: Applications of Radiation, Winter 2017, Winter 2018, Winter 2019, Winter 2020, Winter 2021
- Faculty Guest Lecturer (1 lecture), NERS 211: Introduction to Nuclear Engineering and Radiological Sciences, Fall 2016, Fall 2017, Fall 2020
- Grader, Introduction to Controlled Fusion, Cornell University, Spring 2007
- Head Teaching Assistant, Radio Frequency Circuits & Systems, Cornell University, Spring 2004
  - Instructed the laboratory component of the course and assisted with exam grading
  - Received an overall rating of 4.636 (out of 5.0) on student evaluations of teaching quality
- Teaching Assistant, Feedback Control Systems, Cornell University, Fall 2000

POSTDOCTORAL RESEARCH FELLOW SUPERVISION

1. Dr. Roman Shapovalov, January 2020 – August 2022

DOCTORAL STUDENT SUPERVISION AS CHAIR/CO-CHAIR

1. Paul C. Campbell, NERS PhD, 2020 (Chair) – Now a Research Scientist at Zap Energy
2. Jeff M. Woolstrum, NERS PhD, 2022 (Chair) – Now a postdoc at SNL
3. Akash P. Shah, Applied Physics PhD, 2022 (Chair) – Now a Research Scientist at Zap Energy
4. Nicholas B. Ramey, NERS PhD, 2022 (Co-Chair w/ Ron Gilgenbach) – Now a Staff Scientist at LANL
5. Brendan J. Sporer, NERS PhD, 2023 (Chair) – Now a Research Scientist at TAE Technologies
6. George V. Dowhan, Applied Physics PhD, 2023 (Chair) – Now a postdoc working with NRL
7. Stephanie M. Miller, NERS PhD, 2023 (Co-Chair with Carolyn Kuranz) – Now at DOE-NNSA HQ
8. Raul Melean, Applied Physics PhD Student (Co-Chair with Carolyn Kuranz)
9. Trevor J. Smith, NERS PhD Student (Chair)
10. Joe Chen, NERS PhD Student (Chair)
11. Landon Tafoya, NERS PhD Student (Chair)
12. Adam Bedel, Applied Physics PhD Student (Chair)

DISSERTATION COMMITTEE SERVICE AS MEMBER

1. Christopher Sercel, Aerospace Engineering PhD, 2023 (Chair: Jorns)
2. Leanne Su, Aerospace Engineering PhD, 2023 (Chair: Jorns)
3. Noah Wuerfel, Physics PhD, 2023 (Chair: Lorenzon)
4. Kevin Nelson, Physics PhD, 2023 (Chair: Amidei)
5. Louis Jose, Applied Physics PhD, 2023 (Chair: Baalrud)
6. Lucas Beving, Applied Physics PhD, 2023 (Chair: Baalrud)
7. Woody (Robert) VanDervort, Applied Physics PhD, 2022 (Chair: Drake)
8. Joshua Woods, Aerospace Engineering PhD, 2022 (Chair: Jorns)
9. Xuan Xiao, NERS PhD, 2021 (Chair: Jovanovic)
10. Juliusz Kruszelnicki, NERS PhD, 2021(Chair: Kushner)
11. Heath LeFevre, Applied Physics PhD, 2021 (Chair: Drake)
12. Abhijit Jassem, NERS PhD, 2021 (Chair: Lau)
13. Gabriel A. Shipley, *University of New Mexico*, ECE PhD, 2021 (Chair: Gilmore)
14. Foivos Antoulinakis, NERS PhD, 2020 (Chair: Lau)
15. Joseph Levesque, Applied Physics PhD, 2020 (Chair: Kuranz)
16. Marcel Georgin, Applied Physics PhD, 2020 (Co-Chairs: Jorns and Gallimore)
17. Steven Exelby, NERS PhD, 2019 (Chair: Gilgenbach)
18. Amanda Lietz, NERS PhD, 2019 (Chair: Kushner)
19. Laura Elgin, Climate and Space Sciences and Engineering PhD, 2019 (Chair: Kuranz)
20. Patrick Belancourt, Climate and Space Sciences and Engineering PhD, 2019 (Chair: Drake)
21. David Yager-Elorriaga, NERS PhD, 2017 (Chair: Gilgenbach)
22. Christopher Swenson, NERS PhD Student (Co-Chairs: Jordan and Gilgenbach)
23. Sonya Dick, MechE PhD Student (Chair: Johnsen)

24. William Hurley, Aerospace Engineering PhD Student (Chair: Jorns)
25. Kwyntero Kelso, NERS PhD Student (Chair: Kuranz)
26. Michael Springstead, NERS PhD Student (Chair: Kuranz)
27. Khalil Bryant, Applied Physics PhD Student (Chair: Kuranz)
28. Jenny Smith, NERS PhD Student (Chair: Foster)
29. Tyler Topham, NERS PhD Student (Chair: Foster)
30. Derek C. Lamppa, *University of New Mexico*, ECE PhD Student (Chair: Gilmore)
31. Brian Taylor, *University of Alabama, Huntsville*, MAE PhD Student (Chair: Cassibry)

MASTERS STUDENT SUPERVISION

1. Trevor Smith, NERS MS, 2020
2. Donovan White, EECS MS, 2021
3. Carolina Vazquez, NERS MS, 2024

UNDERGRADUATE STUDENT RESEARCH SUPERVISION

1. Jeff M. Woolstrum, Engineering Honors Program, Capstone Project Advisor, Fall 2016–Winter 2017
2. Michael (mikwa) Hua, NERS 299, Fall 2016
3. Michael Bondin, NERS 499, Fall 2016–Fall 2017
4. Flynn Darby, NERS 499, Fall 2016–Winter 2017
5. Andrew Denniston, NERS 499 and Work-Study, Fall 2016
6. Divans Beqi, NERS 499, Winter 2017
7. Evan Leppink, NERS 499, Winter 2017
8. Tyler Swink, NERS 499, Fall 2017–Winter 2018
9. Frank Angers, NERS 299, Winter 2018
10. Thomas Mundy, NERS 299 and Work-Study, Fall 2018–Winter 2022
11. Grant Young, NERS 299 and Work-Study, Fall 2018–Winter 2021
12. Anil Bansal, NERS 499, Fall 2018
13. Aaron MacDonald, NERS 499, Fall 2018
14. Rodrigo Rovner, NERS 499, Fall 2018
15. Christopher Thomas, NERS 499, Fall 2018
16. James Pelkey, NERS 299/499 and Work-Study, Winter 2018–Fall 2018
17. Trevor Smith, NERS 499 and Work-Study, Winter 2018–Fall 2018
18. Cayetano Wagner, NERS 299/499 and Work-Study, Winter 2017–Winter 2019
19. Tanner Jones, Work-Study, Fall 2017–Winter 2019
20. Anna Cooleybeck, NERS 499 and Work-Study, Winter 2018–Fall 2019
21. MaryKate Bossard (Physics), Work-Study, Fall 2019–Winter 2021
22. Isaac Sarbacker, NERS 299 and Work-Study, Fall 2021–present
23. Peter Redman (EECS), NERS 499, Fall 2021
24. Ben Thompson, NERS 499, Fall 2021
25. Milo Parrott, Work-Study, Fall 2022
26. Charles Peterson, NERS 299 and Work-Study, Fall 2022–present
27. Evan Mahler, Summer 2023–present

AWARDS & HONORS

- Best Paper Award, IEEE Transactions on Plasma Science, 2021
  - For: R. D. McBride *et al.*, "A Primer on Pulsed Power and Linear Transformer Drivers for High Energy Density Physics Applications", invited tutorial in IEEE Trans. Plasma Sci. 46, 3928–3967 (2018); https://doi.org/10.1109/TPS.2018.2870099.
  - https://ners.engin.umich.edu/2021/06/30/ryan-mcbride-leads-ieee-tps-best-paper/
  - https://ieeexplore.ieee.org/document/9616990
- University of Michigan College of Engineering Annual Departmental Faculty Award, 2020
- Graduate of Distinction Award, Maine-Endwell Central School District, 2020
- Department of Energy, Early Career Award, 2019
- Office of Naval Research, Young Investigator Award, 2018
- Department of Energy's National Nuclear Security Administration's Defense Programs Award of Excellence, cited for "Z-Circuit-Model Development Team", team member, 2018
- Sandia National Laboratories' Employee Recognition Award, cited for "Sierra Diagnostics Development", team member, 2016

- Department of Energy's National Nuclear Security Administration's Defense Programs Award of Excellence, cited for "First Integrated Magnetized Liner Inertial Fusion Experiments on Z", team member, 2014
- Sandia National Laboratories' Certificate of Excellence, cited for "Outstanding Performance and Lasting Contribution as the Principal Experimenter for the Sierra Campaign on Z", 2014
- Sandia National Laboratories' Certificate of Excellence, cited for "First Magnetized Liners on Z", team member, 2014
- Sandia National Laboratories' Employee Recognition Award, cited for "First Fully-Integrated Magnetized Liner Inertial Fusion Experiments on Z", team member, 2014
- Sandia National Laboratories' Employee Recognition Award, "Beryllium Liner Dynamics", 2013
- Work featured in the Michigan Engineer, AIP Scilight, Science Magazine, NBC News, and others:
  - https://news.engin.umich.edu/2020/07/twisting-magnetic-fields-for-extreme-plasma-compression/
  - https://phys.org/news/2020-07-magnetic-fields-extreme-plasma-compression.html
  - https://eurekalert.org/pub_releases/2020-07/uom-tmf071420.php
  - https://www.sciencedaily.com/releases/2020/07/200715142402.htm
  - https://sciencesprings.wordpress.com/2020/07/15/from-university-of-michigan-twisting-magnetic-fields-for-extreme-plasma-compression/
  - https://news.engin.umich.edu/2019/08/how-a-spray-from-the-hardware-store-could-improve-nuclear-fusion/
  - https://aip.scitation.org/doi/10.1063/1.5118431
  - https://www.wired.com/2012/09/fusion-energy-breaking-even/
  - http://news.sciencemag.org/2012/09/step-forward-fusion
  - http://www.nbcnews.com/id/49105868/ns/technology_and_science-tech_and_gadgets/#.VBtM0Mezt2t
  - https://www.foxnews.com/tech/another-step-closer-to-fusion-power
  - https://share-ng.sandia.gov/news/resources/news_releases/nuclear_fusion/
- MAIK "Nauka / Interperiodica" Pleiades Publishing Award, for best publications in the journals of the Russian Academy of Sciences, coauthor on a winning paper in physics & mathematics, 2012
- Department of Energy's National Nuclear Security Administration's Defense Programs Award of Excellence, cited for "Magneto-Rayleigh-Taylor Experiments", team member, 2011

STUDENT AWARDS & HONORS

- Best Poster Award for Trevor Smith at the DOE-NNSA SSAP Symposium, 2024
- DOE-NNSA Laboratory Residency Graduate Fellowship (LRGF) for Brendan Sporer, 2021–2025
- DOE-NNSA Laboratory Residency Graduate Fellowship (LRGF) for Stephanie Miller, 2018–2022
- Best Student Poster Award for Brendan Sporer at the IEEE Pulsed Power Conference, 2021
- Best Paper Award at the ANS Student Conference for the NERS 491/492 Senior Design Team (Grant Young, Levi Welch, and Jack Tait), 2021
- Michigan Institute for Plasma Science & Engineering (MIPSE) Fellowship for Joe Chen, 2023
- Michigan Institute for Plasma Science & Engineering (MIPSE) Fellowship for Brendan Sporer, 2021
- Michigan Institute for Plasma Science & Engineering (MIPSE) Fellowship for Akash Shah, 2020
- Michigan Institute for Plasma Science & Engineering (MIPSE) Fellowship for George Dowhan, 2019
- Best Poster Award for Stephanie Miller at the DOE-NNSA SSAP Symposium, 2019
- Best Poster Award for Jeff Woolstrum at the DOE-NNSA SSAP Symposium, 2018

PROFESSIONAL & HONOR SOCIETIES

- American Physical Society, member
- American Nuclear Society, lifetime member
- Institute of Electrical and Electronics Engineers (IEEE), member
- IEEE Nuclear and Plasma Sciences Society, member
- Sigma Xi, scientific research honor society, full member
- Eta Kappa Nu, electrical engineering honor society, member
- Tau Beta Pi, engineering honor society, member

PROFESSIONAL SERVICE

- Executive Committee Member, ZNetUS Consortium, 2020–present
- Chair, APS-DPP Honors Selection Committee, Thomas H. Stix Award in Plasma Physics, 2024

- Guest Editor for IEEE Transactions on Plasma Science, Special Issue on Z-Pinch Plasmas, 2023–2024
- Conference Chair, International Conference on Dense Z-Pinch Plasmas (DZP), Ann Arbor, MI, 2023: https://ners.engin.umich.edu/dzp2023/
- Vice Chair, APS-DPP Honors Selection Committee, Thomas H. Stix Award in Plasma Physics, 2023
- Panel Member, DOE-FES Inertial Fusion Energy (IFE) Basic Research Needs (BRN) Workshop, 2022
- Council Member, Facility Reserve Shot Proposals, Z Facility, Sandia National Laboratories, 2022
- Program Committee Member for the DOE-FES Inertial Fusion Energy (IFE) Workshop, 2021–2022
- Program Committee Member (Inertial Confinement Fusion Subcommittee) for the Annual Conference of the American Physical Society Division of Plasma Physics, 2021
- Technical Program Committee Member and Session Organizer, International Conference on Plasma Science (ICOPS), South Lake Tahoe, CA, 2021
- Academic Co-Lead, NNSA Workshop on Inertial Confinement Fusion (ICF), Topical Area on Current Delivery, 2020–2021
- Workshop Organizing Committee Member and Session Chair, *The First ZNetUS Workshop*, University of California, San Diego, 2020
- Session Chair, American Physical Society Division of Plasma Physics Annual Meeting, 2020
- Discussion Group Leader for the DOE FESAC Long Range Planning Workshop, August 2020
- Session Chair, American Physical Society Division of Plasma Physics Annual Meeting, 2019
- Primary author, coauthor, and presenter of whitepapers for the Plasma 2020 decadal study by the National Academies of Science and Engineering, 2019
- Primary author and coauthor of whitepapers for the DOE Office of Fusion Energy Sciences APS-DPP Community Planning Process, 2019
- Workshop participant for the DOE Office of Fusion Energy Sciences APS-DPP Community Planning Process, 2019 (College Park, MD) and 2020 (Houston, TX).
- Guest Editor for IEEE Transactions on Plasma Science, Special Issue on Z-Pinch Plasmas, 2018
- Session Organizer & Session Chair, International Conference on Plasma Science (ICOPS), Denver, CO, 2018
- Author of a requested letter to the NSF Office of Legislative & Public Affairs for information on mutually leveraged NSF-AFOSR research, 2018
- Workshop Participant and Final Report Contributor, *Tracking and Engaging the Future: US Air Force Research in 2030*, Boise State University, Boise, Idaho, 2018
- Workshop Participant, *Z Next Workshop*, Albuquerque, New Mexico, 2018
- Workshop Participant, *LaserNetUS*, Lincoln, Nebraska, 2018
- Program Committee Member (Inertial Confinement Fusion Subcommittee) for the Annual Conference of the American Physical Society Division of Plasma Physics, 2017
- Session Chair for Wire-Array Z-Pinches and X-Pinches, at the International Conference on Dense Z-Pinches (DZP), Lake Tahoe, NV, 2017
- Workshop Participant, *High-Energy-Density Community Self-Organization Workshop*, University of California, San Diego, 2017
- Workshop Participant and Whitepaper Coauthor, *Common Challenges in ICF*, Santa Fe, NM, 2016
- Review Panelist, Laboratory Basic Science Program on the OMEGA Laser Facility, 2016
- Selection Committee Member, DOE-NNSA Stockpile Stewardship Graduate Fellowship (SSGF), 2016
- Grant Proposal Reviewer and/or Panelist for:
  - DOE Innovation Network for Fusion Energy (INFUSE) Program, 2019, 2021
  - National Research and Development Agency of the Ministry of Science, Technology, Knowledge and Innovation of Chile, National Projects Competition, 2021
  - DOE Early Career Research Program, 2020
  - DOE Joint Program in High Energy Density Laboratory Plasmas, 2019
  - DOE-NNSA Stockpile Stewardship Academic Alliances Program, 2018
  - US–Israel Binational Science Foundation (BSF), 2017
  - DOE Joint Program in High Energy Density Plasma Science, 2015
  - DOE Fusion Energy Sciences Postdoctoral Research Program, 2014
  - DOE Joint Program in High Energy Density Laboratory Plasmas, 2013
  - DOE-NNSA Stewardship Science Academic Alliances (SSAA) Program, 2012
  - DOE Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) solicitation, 2011, 2019, 2020, 2021, 2022
  - NSF/DOE Partnership in Basic Plasma Science and Engineering, 2011, 2012, 2016, 2018, 2020

  - NSF Plasma Physics Program, 2023
- Panelist for Sandia National Laboratories' Workshop on "How to be an effective PI", 2015
- Journal Referee for:
  - Physical Review Letters, 2016, 2017, 2018, 2021, 2022, 2023, 2024
  - Physics of Plasmas, 2015, 2016, 2017, 2018, 2019, 2020 (x2), 2021, 2022 (x3), 2023, 2024
  - IEEE Transactions on Plasma Science: 2011, 2012, 2013, 2014, 2017, 2018 (x4), 2019, 2020, 2021 (x2)
  - Physical Review Accelerators and Beams, 2019, 2020 (x2), 2022
  - Review of Scientific Instruments, 2017, 2022 (x2), 2023
  - Matter and Radiation at Extremes, 2019-2020, 2021
  - Physical Review E, 2020-2021
  - High Energy Density Physics, 2020
  - IEEE Transactions on Nuclear Science, 2019
  - ASME Journal of Nuclear Engineering and Radiation Science, 2018
  - Fusion Science and Technology, 2022, 2023
  - Journal of Applied Physics, 2020, 2021 (x2)

UNIVERSITY SERVICE

- Undergraduate Program Committee, Nuclear Engineering & Radiological Sciences
  - Chair, 2022–2023
  - Member, 2016–2022
  - Undergraduate Student Advising
  - Undergraduate Scholarship Selection
  - CoE Majors & Minors Fair, NERS Guide, 2021
  - engIN Student Welcome Event Volunteer, 2021
- Convener, ADVANCE Launch Committee for new Assist. Prof. in Aerospace Engineering, 2022–2023
- Chair of the Plasma and Nuclear Fusion Option, NERS Department, 2020–2022
- Graduate Program Committee, Nuclear Engineering & Radiological Sciences, 2020–2022
- COE Rep for Faculty Candidate in UM's Climate and Space Sciences and Engineering Dept, 2022
- College of Engineering Nominating Committee, academic years 2018–2020
- College of Engineering CRLT-Engin Advisory Board, academic years 2018–2020
  - Selection Committee, Towner Prize for Outstanding Engineering GSIs, 2019, 2020
  - Interviewing candidates for an Instructional Consultant position, 2019
- Member, Review Committee for Research Administrative Processes, NERS Department, 2020–2021
- Department Executive Committee, Nuclear Engineering & Radiological Sciences, 2018–2020
- NERS Planning Committee Member, Rackham Recruiting Bootcamp (ReBoot) Grant Program, 2019–2020
- Promotion Casebook Committee Chair for NERS Department, 2022
- Tenure Casebook Committee Member for UM-EECS Department, 2021
- Tenure Casebook Committee Member for UM-AERO Department, 2021
- Launch Committee Member for new Associate Professor in NERS, 2019–2020
- Active Member of the NERS Plasma and Nuclear Fusion Option, 2016–Present
- Active Member of the Michigan Institute for Plasma Science and Engineering (MIPSE), 2016–Present
  - Poster Judge for the MIPSE Graduate Symposium, 2016
  - Hosting for visiting speakers
  - Executive Committee Member, 2022–present
- Active Member in the Applied Physics Program, 2016–Present
  - Applied Physics Admissions Committee, 2019–Present
  - Supervisor in the Applied Physics Program, 2017–Present
  - Administering of Oral Qualifying Exams, 2017–Present
- Faculty Procession, Spring Commencement, 2019
- Greeter/Host, CoE Prospective Grad Student Visit Days (Dinners/Breakfasts), 2019
- Poster Judge for the Engineering Graduate Symposium, University of Michigan, 2016, 2017
- Journal Referee for the University of Michigan Undergraduate Research Journal, 2017, 2018

OUTREACH & DEI (DIVERSITY, EQUITY, AND INCLUSION)

- DEI Committee Member, Department of Nuclear Engineering and Radiological Sciences, 2020–present

- Faculty Ally for Diversity in Graduate Education, Rackham Graduate School, 2021–Present
- Electrify Tech Camp Volunteer, UM EECS, 2023
  - Gave mini-lectures and demonstrated the high-voltage discharge lab to high-school students/campers as they visited the UM NERS plasma teaching laboratory
- Graduate Student Recruiting Trip and NERS Info Session, Florida A&M University, 2022
- Society of Women Engineers Conference (WE21), NERS/CoE Recruiting, Indianapolis, IN, 2021
- Tau Beta Pi Graduate Career Fair Attendee, 2021
- Creating Climates Resistant to Sexual Harassment, CRLT Course/Workshop, 2021
- Change IT UP Workshop to Stop Anti-Black Racism, 2021
- Primary Author/Applicant on a DEI Faculty Grant Proposal submitted to UM College of Engineering, "NERS Graduate Student Recruiting at Minority Serving Institutions (MSIs) and Women's Colleges", ($10k Awarded), 2020–2021
  - Gave lightning talk at the Michigan Engineering DEI Summit, 2021
- DEI discussion meetings within the McBride research group (discussion materials distributed by, and discussions led by, PhD student Stephanie Miller), 2020
- Participant, Michigan Engineering DEI Faculty Mini-Retreat, January 2021
- Met with prospective students for the Explore Michigan Engineering Research and Graduate Education (EMERGE) program, 2020
- Inclusive Teaching in Remote Setting CRLT Workshop, 2020
- Participant in full-day workshop titled: *Strategies to Support Inclusive Climates and Student Success in STEM Departments*, sponsored by the National Center for Institutional Diversity (NCID), the UM College of Engineering, the UM College of Literature, Science, and Arts (LSA), and the Center for Research on Learning and Teaching (CRLT), held at the Ross School of Business on May 7, 2019
- NERS Planning Committee Member, Rackham Recruiting Bootcamp (ReBoot) Grant Program, 2019
- Faculty Participant for the Tri-Annual GradSWE Faculty-Student Mixer, 2019, 2021
- Attendee, DEI Lecture Series, Sexual Harassment in STEM: A View from the National Academies, presented by U-M Prof. Lilia Cortina, 2019
- The University of Michigan's Detroit Area Pre-College Engineering Program (DAPCEP), 2019
  - Assisted with plasma demonstrations
- Society of Women Engineers Summer Engineering Exploration (SEE) Camp, 2018
  - Consulted with high school students on their week-long fusion engineering design project
- The University of Michigan's Detroit Area Pre-College Engineering Program (DAPCEP), 2018
  - Assisted with plasma demonstrations for the session called *Glow* Blue!
- Society of Minority Engineers and Scientists (SMES-G) annual "STEMulation" outreach day for high school students (assisted with plasma demonstrations), 2018
- Science Fair Judge, Haisley Elementary School, Ann Arbor Public Schools, 2017
- Coach for Youth Soccer, Ann Arbor Rec & Ed Program, 2019–Present
- Coach for Youth Ice Hockey, Biggby Coffee Hockey Club (BCHC), 2023–present
- Coach for Youth Ice Hockey, Ann Arbor Amateur Hockey Association (AAAHA), 2017–2023

FUNDING AWARDS

1. "The Center for Magnetic Acceleration, Compression, and Heating (MACH)"
   - Source: U.S. Department of Energy (DOE) National Nuclear Security Administration (NNSA)
   - Program: Stockpile Stewardship Academic Programs (SSAP)
   - Total Center Funding: $14,500,000
   - Amount to U-M: $2,040,000
   - Funding Period: 9/1/23–8/31/28
   - Role: PI (overall Center PI and UM PI)
   - Center Institutions: University of Michigan (lead); Cornell University; Imperial College London; Weizmann Institute of Science; University of California, San Diego; Princeton University; MIT; University of New Mexico; University of Washington; University of Rochester
2. "Helical instability evolution in dynamic-screw-pinch-driven plasma implosions"
   - Source: U.S. National Science Foundation (NSF) and U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA)
   - Program: Division of Physics, Investigator-Initiated Research Projects (PHY)
   - Amount to U-M: $586,041

- Funding Period: 9/1/22–8/31/25
- Role: Principal Investigator (PI)

3. "The Physics of Micro-Pinches"
   - Source: U.S. Department of Energy (DOE)
   - Program: Early Career Research Program, Fusion Energy Sciences (FES)
   - Amount to U-M: $750,000
   - Funding Period: 9/1/19–8/31/24
   - Role: Principal Investigator (PI)
4. "Exploration of Fundamental Limits to High Power Electromagnetic Amplification"
   - Source: U.S. Air Force Office of Scientific Research (AFOSR)
   - Program: Multidisciplinary University Research Initiatives (MURI) Program
   - Total MURI Amount: $7,500,000
   - Amount to UM: $1,749,930
   - Amount to McBride research group: $373,974
   - Funding Period: 8/1/20–7/31/25
   - Role: Co-Investigator (Co-I) (E. Schamiloglu is PI for MURI, R. Gilgenbach is PI for UM)
5. "High-Power Microwave Generation by Compact Linear Transformer Driver Technology"
   - Source: U.S. Office of Naval Research (ONR)
   - Program: Young Investigator Program (YIP)
   - Amount to U-M: $510,000
   - Funding Period: 6/1/18–5/31/21
   - Role: PI
6. "Controlling the Seeding and In-Flight Evolution of the Magneto-Rayleigh-Taylor Instability"
   - Source: U.S. National Science Foundation (NSF)
   - Program: NSF-DOE Partnership in Basic Plasma Science and Engineering
   - Amount to U-M: $520,000
   - Funding Period: 9/1/17–8/31/21
   - Role: PI
7. "Design and development of laser imaging diagnostics for investigating low density plasmas on the Z Machine"
   - Source: Sandia National Laboratories (DOE-NNSA)
   - Program: Laboratory Directed Research and Development Program
   - Amount to U-M: $300,000
   - Funding Period: 10/1/21–9/31/24
   - Role: PI for subcontract to U-M (David Yager-Elorriaga at Sandia is the PI for the overall project)
8. "Electrode plasma production and electromagnetic power delivery in pulsed-power systems: Experiments, modeling, and simulations at the 1-MA scale"
   - Source: Sandia National Laboratories (DOE-NNSA)
   - Program 1: Assured Survivability and Agility with Pulsed Power (ASAP) Mission Campaign
   - Program 2: Laboratory Directed Research and Development Program (LDRD Project 222323)
   - Amount to U-M: $390,000
   - Funding Period: 10/1/21–9/29/24
   - Role: PI for subcontract to U-M
9. "Power Flow Experiments on the MAIZE Pulsed Power Facility"
   - Source: Sandia National Laboratories (DOE-NNSA)
   - Amount to U-M: $87,000
   - Funding Period: 10/1/20–9/31/21
   - Role: PI
10. "Towards Predictive Plasma Science and Engineering through Revolutionary Multi-Scale Algorithms and Models"
    - Source: Sandia National Laboratories
    - Joint Program 1: Laboratory Directed Research and Development Program
    - Joint Program 2: Campus Executives Program
    - Amount to U-M: $582,000
    - Funding Period: 10/1/17–9/31/20
    - Role: PI for subcontract to U-M (George Laity at Sandia is the PI for the overall project)

11. "Development of a Dense Plasma Focus Neutron Source at the University of Michigan"
    - Source: University of Michigan
    - Program: Michigan Memorial Phoenix Project
    - Amount: $25,000
    - Funding Period: 4/1/2017–4/1/2027
    - Role: PI
12. "Multi-University Center of Excellence for Pulsed Power-Driven High Energy Density Science"
    - Source: U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA)
    - Program: Stockpile Stewardship Academic Programs (SSAP)
    - Amount to U-M: $1,150,000
    - Funding Period: 10/1/17–5/31/23
    - Role: PI for subcontract to U-M (David Hammer at Cornell is the PI for the Center)
13. "Implementing and Diagnosing Magnetic Flux Compression on the Z Pulsed Power Accelerator"
    - Source: Sandia National Laboratories
    - Program: Laboratory Directed Research and Development Program
    - Amount: $1,300,000
    - Funding Period: 10/1/12–9/31/15
    - Role: PI

INVITED TALKS

1. **R. D. McBride**, "Helical Instability Evolution in Dynamic-Screw-Pinch-Driven Plasma Implosions", to be given at the *NSF Ecosystem for Collaborative Leadership and Inclusive innovation in Plasma Science and Engineering (ECLIPSE) Meeting*, (Rochester, NY, April 7–9, 2024).

2. **R. D. McBride**, "The MAIZE Pulsed Power Facility at the University of Michigan", at the 3rd ZNetUS Workshop, (La Jolla, CA, January 8–10, 2024).

3. **R. D. McBride**, "Magnetically driven implosions for nuclear fusion, radiation source development, laboratory astrophysics, and high-pressure material properties", at the *Florida A&M University Physics Department Colloquium Series*, (Tallahassee, FL, April 14, 2022).

4. **R. D. McBride**, "Stabilization of Magnetically Driven Implosions for High-Energy-Density Physics Applications", at the *Annual Fall Meeting of the JASON Advisory Group*, (MITRE Corporation, McLean, VA, November 18–19, 2021).

5. **R. D. McBride**, "Pulsed-Power-Driven High-Energy-Density Plasma Physics at UM", at the *University of Michigan Sigma Gamma Tau (Aerospace Engineering Honor Society) Student Chapter Seminar Series* (Ann Arbor, MI, November 22, 2021).

6. **R. D. McBride**, "Pulsed Power Experiments at the University of Michigan", at the *12th Fundamental Science with Pulsed Power: Research Opportunities and User Meeting, Sandia National Laboratories*, (virtual due to COVID-19, August 9–10, 2021).

7. **R. D. McBride**, "Update from Michigan's Plasma, Pulsed Power, and Microwave Laboratory", at the *11th Fundamental Science with Pulsed Power: Research Opportunities and User Meeting, Sandia National Laboratories*, (virtual due to COVID-19, August 3–4, 2020).

8. **R. D. McBride**, "Linear Transformer Drivers (LTDs): Compact Pulsed-Power Technology for High Energy Density Physics (HEDP) & High-Power Microwaves (HPM) Applications", for *Purdue University's Course on Pulsed Power and Vacuum Electronics,* (virtual due to COVID-19, September 24, 2020).

9. **R. D. McBride**, "Pulsed-power-driven research in high-energy-density physics (HEDP) and high-power microwaves (HPM) at the University of Michigan", at the *Colloquium Series of Los Alamos National Laboratory's Physics and Theoretical Divisions*, (Los Alamos, NM, March 5, 2020).

10. **R. D. McBride**, N. M. Jordan, P. C. Campbell, S. M. Miller, J. M. Woolstrum, A. P. Shah, B. J. Sporer, T. J. Smith, G. V. Dowhan, A. Mazarakis, Y. Y. Lau, and R. M. Gilgenbach, "Pulsed-power-driven high-energy-density physics research at the University of Michigan", at the *1st ZNetUS Workshop*, (La Jolla, CA, January 6–8, 2020).

11. **R. D. McBride**, "Status of pulsed-power-driven research and development at the University of Michigan", at the *9th Fundamental Science with Pulsed Power: Research Opportunities and User Meeting*, (Albuquerque, NM, July 29 – August 1, 2018).

12. **R. D. McBride**, "Magnetically driven implosions for nuclear fusion, radiation source development, laboratory astrophysics, and high-pressure material properties", at the *University of Michigan's Applied Physics Seminar*, (Ann Arbor, January 31, 2018).

13. **R. D. McBride**, "COBRA Experiments and their Legacy", at the *Laboratory of Plasma Studies 50th Anniversary Symposium,* (Cornell University, Ithaca, NY, October 6–7, 2017).

14. **R. D. McBride**, "Overview of pulsed-power-driven plasma physics at the University of Michigan", at the *8th Fundamental Science with Pulsed Power Workshop: Research Opportunities and User Meeting*, (Albuquerque, NM, July 16–19, 2017).

15. N. M. Jordan and **R. D. McBride**, "Current Research at the University of Michigan's Plasma, Pulsed-Power, and Microwave Laboratory", at the *Pulsed-Power and Microwaves Seminar of the Air Force Research Laboratory*, (Albuquerque, NM, July 13, 2017).

16. **R. D. McBride**, "Present and Future Research Directions at the University of Michigan's Plasma, Pulsed-Power, and Microwave Laboratory", at the *Naval Research Laboratory's Plasma Physics Division Colloquium*, (Washington, DC, June 12, 2017).

17. **R. D. McBride**, "Linear Transformer Drivers: Compact Pulsed-Power Technology for High Energy Density Experiments", ***Invited Tutorial*** given at the *Mini-Course on Charged Particle Beams and High-Powered Pulsed Sources, as part of the 44th IEEE International Conference on Plasma Science*, (Atlantic City, May 21–26, 2017).

18. **R. D. McBride**, "Magnetically driven implosions for nuclear fusion, radiation source development, laboratory astrophysics, and high-pressure material properties", held jointly by the *University of Michigan's Nuclear Engineering and Radiological Sciences Department Colloquium and the Michigan Institute for Plasma Science and Engineering Seminar*, (Ann Arbor, March 17, 2017): http://leccap.engin.umich.edu/leccap/viewer/r/i1ZOqc

19. **R. D. McBride**, "Magnetically driven implosions for nuclear fusion, radiation source development, laboratory astrophysics, and high-pressure material properties", at the *University of Michigan's Applied Physics Seminar*, (Ann Arbor, January 18, 2017).

20. **R. D. McBride**, "Z Facility Capabilities, Access, and Science", at the *High Energy Density Physics Summer School*, the University of California, San Diego, (La Jolla, August 17–21, 2015).

21. **R. D. McBride**, D. B. Sinars, S. A. Slutz, M. R. Gomez, A. B. Sefkow, S. B. Hansen, T. J. Awe, K. J. Peterson, P. F. Knapp, P. F. Schmit, D. C. Rovang, M. Geissel, R. A. Vesey, A. J. Harvey-Thompson, C. A. Jennings, M. R. Martin, R. W. Lemke, K. D. Hahn, E. C. Harding, M. E. Cuneo, J. L. Porter, G. A. Rochau, and W. A. Stygar "Magnetized Liner Inertial Fusion on the Z Pulsed-Power Accelerator", at the *3rd International Workshop on Radiation from High Energy Density Plasmas*, (Lake Tahoe, June 10–13, 2015).

22. **R. D. McBride**, K. J. Peterson, T. J. Awe, D. B. Sinars, M. R. Gomez, S. B. Hansen, C. A. Jennings, S. A. Slutz, M. R. Martin, R. W. Lemke, D. E. Bliss, P. F. Knapp, P. F. Schmit, D. C. Rovang, and M. E. Cuneo, "Experiments on Liner Dynamics and Magnetic Flux Compression for MagLIF", at the *26th IEEE Symposium on Fusion Engineering*, (Austin, May 31 – June 4, 2015).

23. **R. D. McBride**, "Magnetized Liner Inertial Fusion & Cylindrical Dynamic Materials Properties Experiments on the Z Pulsed-Power Accelerator", at the *Stewardship Science Graduate Fellowship Conference*, (Santa Fe, June 25–27, 2013): http://www.krellinst.org/ssgf/conf/2013/video/rmcbride

24. **R. D. McBride**, "Beryllium liner implosion experiments on the Z accelerator in preparation for Magnetized Liner Inertial Fusion (MagLIF)", at the *54th Annual Meeting of the American Physical Society Division of Plasma Physics*, (Providence, October 29 – November 2, 2012).

25. **R. D. McBride**, S. A. Slutz, D. B. Sinars, R. W. Lemke, M. R. Martin, C. A. Jennings, M. E. Cuneo, M. C. Herrmann, and B. E. Blue, "Beryllium Liner Implosions on Z: MRT & EOS Experiments", at the *1st Liner Fusion Workshop*, (Albuquerque, February 5–8, 2012).

26. **R. D. McBride**, "Radiography of magnetically-driven implosions of initially solid beryllium cylindrical shells for equation-of-state studies at the Z pulsed-power facility", at the *17th Biennial International Conference of the American Physical Society Topical Group on Shock Compression of Condensed Matter*, (Chicago, June 26 – July 1, 2011).

27. **R. D. McBride**, S. A. Slutz, D. B. Sinars, R. W. Lemke, M. R. Martin, C. A. Jennings, J.-P. Davis, B.E. Blue, M. E. Cuneo, D. G. Flicker, M. C. Herrmann, and J. L. Porter, "Beryllium liner z-pinch implosions for inertial confinement fusion and dynamic materials studies at the Z pulsed-power facility", at the *3rd International Conference on High Energy Density Science*, (Lisbon, May 17–20, 2011).

STUDENT INVITED TALKS

1. T. J. Smith, M. Johnston, N. Jordan, M. Cuneo, J. Schwarz, **R. D. McBride**, "Understanding electrode plasma formation on wires and thin foils via vacuum ultraviolet spectroscopy of desorbed surface contaminants", at the *50th IEEE International Conference on Plasma Science*, (Santa Fe, NM, May 21–25, 2023).

2. G. V. Dowhan, A. P. Shah, B. J. Sporer, N. M. Jordan, S. N. Bland, S. V. Lebedev, R. A. Smith, L. Suttle, S. A. Pikuz, and **R. D. McBride**, "High-Magnification Faraday Rotation Imaging of X-Pinch Implosion Dynamics", at the *24th Topical Conference on High Temperature Plasma Diagnostics*, (Rochester, NY, May 15–19, 2022)

3. T. J. Smith, M. Johnston, N. M. Jordan, M. E. Cuneo, G. Laity, **R. D. McBride**, "Understanding electrode plasma formation on wires and thin foils via vacuum ultraviolet spectroscopy of desorbed surface contaminants", at the *23rd IEEE Pulsed Power Conference*, (December 12–16, 2021).

4. T. J. Smith, M. Johnston, N. M. Jordan, M. E. Cuneo, G. Laity, **R. D. McBride**, "Understanding electrode plasma formation on wires and thin foils via vacuum ultraviolet spectroscopy of desorbed surface contaminants", at the *23rd IEEE International Conference on Plasma Science*, (September 12–16, 2021).

5. P. C. Campbell, "Stability, power coupling, and flux compression in dynamic-screw-pinch-driven liner implosions", at the *62nd Annual Meeting of the American Physical Society Division of Plasma Physics*, (November 9–13, 2020).

6. P. C. Campbell, "Stabilizing Liner Implosions with Dynamic Screw Pinches", at the *High-Energy-Density Science Association's Talk and Chat Series on the Future of Frontier Plasma Science,* (September 28, 2020).

7. S. M. Miller, S. A. Slutz, S. R. Klein, S. N. Bland, P. C. Campbell, J. M. Woolstrum, C. C. Kuranz, M. R. Gomez, N. M. Jordan, and **R. D. McBride**, "Laser and pulsed power coupling for magnetized liner inertial fusion (MagLIF)", at the *6th International Conference on High Energy Density Science*, (Oxford, UK, March 31 – April 5, 2019).

8. A. P. Shah, "Upgrades to the 1-MA, 100-ns MAIZE Pulsed Power Facility", at the *High-Energy-Density Summer School, University of California, San Diego* (La Jolla, July 28 – August 10, 2019).

MANUSCRIPTS SUBMITTED OR IN PREPARATION FOR PEER-REVIEWED JOURNALS

1. J. M. Chen, G. V. Dowhan, B. J. Sporer, D. A. Yager-Elorriaga, N. M. Jordan, and **R. D. McBride**, "Helical Striations and Magnetic Flux Compression in an Axially Pre-Magnetized Gas-Puff Z-Pinch Imploding onto a Dense Central Target", submitted to *IEEE Trans. Plasma Sci. – Special Issue on Z-Pinch Plasmas* **52** (2024).

2. G. V. Dowhan, J. M. Chen, K. Rezac, J. Novotny, V. Munzar, D. E. J. White, A. P. Shah, L. R. Tafoya, M. A. Mangan, N. M. Jordan, D. Klir, and **R. D. McBride**, "Neutron Generation in a Deuterated-Polyethylene-Fiber Hybrid X-pinch on the MAIZE LTD", submitted to *IEEE Trans. Plasma Sci. – Special Issue on Z-Pinch Plasmas* **52** (2024).

3. A. P. Shah, B. J. Sporer, G. V. Dowhan, K. W. Elliott, M. Krishnan, N. M. Jordan, and **R. D. McBride**, "Development of a Gas-Puff Z-Pinch for the MAIZE Linear Transformer Driver", submitted to *IEEE Trans. Plasma Sci. – Special Issue on Z-Pinch Plasmas* **52** (2024).

4. V. Munzar, B. Cikhardtova, P. Kubes, J. Malir, J. Novotny, K. Rezac, D. Klir, V. Juras, K. Turek, G. V. Dowhan, J. M. Chen, L. R. Tafoya, N. M. Jordan, and **R. D. McBride**, "Self-driven ion deflectometry measurements using 3 MeV hydrogen ions in the hybrid x-pinch on the MAIZE LTD generator", submitted to *Plasma Phys. Control. Fusion* (2024).

5. Y. Lawrence, J. R. Davies, **R. D. McBride**, and A. B. Sefkow, "Transport coefficient sensitivities in a semi-analytic model for MagLIF", in preparation (2024).

6. **R. D. McBride** and W. A. Stygar, "Analytic and numerical solutions for the maximum power rise rates that can be applied to pulsed inductive cavities while maintaining vacuum insulation", in preparation for *Phys. Rev. Accel. Beams*. (2024).

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. G. V. Dowhan, A. P. Shah, B. J. Sporer, N. M. Jordan, S. N. Bland, S. V. Lebedev, R. A. Smith, L. Suttle, S. A. Pikuz, and **R. D. McBride**, "High-Magnification Faraday Rotation Imaging and Analysis of X-pinch Implosion Dynamics", *Rev. Sci. Instrum.* **95**, 043504 (2024); https://doi.org/10.1063/5.0178321.

2. D. J. Ampleford, D. A. Yager-Elorriaga, C. A. Jennings, E. C. Harding, M. R. Gomez, A. J. Harvey-Thompson, T. J. Awe, G. A. Chandler, G. S. Dunham, M. Geissel, K. D. Hahn, S. B. Hansen, P. F. Knapp, D. C. Lamppa, W. E. Lewis, L. Lucero, M. Mangan, R. Paguio, L. Perea, G. A. Robertson, C. L. Ruiz, D. E. Ruiz, P. F. Schmit, S. A. Slutz, G. E. Smith, I. C. Smith, C. S. Speas, T. J. Webb, M. R. Weis, K. Whittemore, E. P. Yu, **R. D. McBride**, K. J. Peterson, B. M. Jones, G. A. Rochau, and D. B. Sinars, "Controlling morphology and improving reproducibility of magnetized liner inertial fusion experiments", *Phys. Plasmas* **31**, 022703 (2024); https://doi.org/10.1063/5.0169981.

3. J. M. Woolstrum, C. E. Seyler, and **R. D. McBride**, "Hall instability driven seeding of helical magneto-Rayleigh-Taylor instabilities in axially premagnetized thin-foil liner Z-pinch implosions", *Phys. Plasmas* **29**, 122701 (2022); https://doi.org/10.1063/5.0103651.

4. C. J. Butcher, V. L. Kantsyrev, A. S. Safronova, V. V. Shlyaptseva, I. K. Shrestha, A. Stafford, P. C. Campbell, S. M. Miller, N. M. Jordan, **R. D. McBride**, A. M. Steiner, R. M. Gilgenbach, "Characteristic Effects of Pulsed Power Generators of Different Architecture on the Implosion Dynamics of Mid-Z_a Double Planar Wire Arrays", **invited paper** in *IEEE Trans. Plasma Sci.* **50**, 2588 (2022); https://doi.org/10.1109/TPS.2022.3200574.

5. B. J. Sporer, A. P. Shah, G. V. Dowhan, R. V. Shapovalov, D. A. Packard, M. Wisher, J. J. Leckbee, K. J. Hendricks, B. W. Hoff, Y. Y. Lau, R. M. Gilgenbach, N. M. Jordan, and **R. D. McBride**, "Multicavity linear transformer driver facility for Z-pinch and high-power microwave research", *Phys. Rev. Accel. Beams* **24**, 100402 (2021); https://doi.org/10.1103/PhysRevAccelBeams.24.100402.

6. P. C. Campbell, T. M. Jones*, J. M. Woolstrum, N. M. Jordan, P. F. Schmit, A. L. Velikovich, J. B. Greenly, W. M. Potter, E. S. Lavine, B. R. Kusse, D. A. Hammer, and **R. D. McBride**, "Liner implosion experiments driven by a dynamic screw pinch", **invited paper** in *Phys. Plasmas* **28**, 082707 (2021); https://doi.org/10.1063/5.0044906.

7. D. A. Packard, Y. Y. Lau, E. N. Guerin, C. J. Swenson, S. V. Langellotti, A. Jassem, D. Li, N. M. Jordan, J. W. Luginsland, **R. D. McBride**, and R. M. Gilgenbach, "Theory, Simulation, and Experiments on a Magnetically Insulated Line Oscillator (MILO) at 10 kA, 240 kV Near the Hull Cutoff Condition", *Phys. Plasmas* **28**, 123102 (2021); https://doi.org/10.1063/5.0071455.

8. C. J. Butcher, V. L. Kantsyrev, A. S. Safronova, V. V. Shlyaptseva, I. K. Shrestha, A. Stafford, A. M. Steiner, P. C. Campbell, S. M. Miller, D. Yager-Elorriaga, N. M. Jordan, **R. D. McBride**, and R. M. Gilgenbach, "Load dynamics of double planar foil liners and double planar wire arrays on the UM MAIZE LTD generator", *Phys. Plasmas* **28**, 082702 (2021); https://doi.org/10.1063/5.0044058.

9. Y. Y. Lau, D. A. Packard, C. J. Swenson, J. W. Luginsland, D. Li, A. Jassem, N. M. Jordan, **R. D. McBride**, and R. M. Gilgenbach, "Explicit Brillouin flow solutions in magnetrons, magnetically insulated line oscillators, and radial magnetically insulated transmission lines", **invited paper** in *IEEE Trans. Plasma Sci.* **49**, 3418 (2021); https://doi.org/10.1109/TPS.2021.3092606.

10. T. J. Smith, P. C. Campbell, G. V. Dowhan, N. M. Jordan, M. D. Johnston, M. E. Cuneo, G. R. Laity, and **R. D. McBride**, "Additively manufactured electrodes for plasma and power-flow studies in high-power transmission lines on the 1-MA MAIZE facility", *Rev. Sci. Instrum.* **92**, 053550 (2021); https://doi.org/10.1063/5.0043856.

11. N. B. Ramey, J. E. Coleman, P. Hakel, H. E. Morris, J. Colgan, J. E. Barefield, C. J. Fontes, R. M. Gilgenbach, and **R. D. McBride**, "Sodium tracer measurements of an expanded dense aluminum plasma from e-beam isochoric heating", *Phys. Plasmas* **28**, 033301 (2021); https://doi.org/10.1063/5.0040714.

12. P. C. Campbell, T. M. Jones*, J. M. Woolstrum, N. M. Jordan, P. F. Schmit, J. B. Greenly, W. M. Potter, E. S. Lavine, B. R. Kusse, D. A. Hammer, and **R. D. McBride**, "Stabilization of Liner Implosions via a Dynamic Screw Pinch", *Phys. Rev. Lett.* **125**, 035001 (2020); https://doi.org/10.1103/PhysRevLett.125.035001.

13. J. M. Woolstrum, D. A. Yager-Elorriaga, P. C. Campbell, N. M. Jordan, C. E. Seyler, and **R. D. McBride**, "Extended Magnetohydrodynamics Simulations of Thin-Foil Z-Pinch Implosions with Comparison to Experiments", *Phys. Plasmas* **27**, 092705 (2020); https://doi.org/10.1063/5.0012170.

14. S. M. Miller, S. A. Slutz, S. N. Bland, S. R. Klein, P. C. Campbell, J. M. Woolstrum, C. C. Kuranz, M. R. Gomez, N. M. Jordan, and **R. D. McBride**, "A pulsed-power implementation of 'Laser Gate' for increasing laser energy coupling and fusion yield in Magnetized Liner Inertial Fusion (MagLIF)", *Rev. Sci. Instrum.* **91**, 063507 (2020); https://doi.org/10.1063/1.5139663.

15. D. A. Packard, A. Cooleybeck*, N. M. Jordan, B. J. Sporer, A. E. Mazarakis, Y. Y. Lau, R. M. Gilgenbach, and **R. D. McBride**, "HFSS and CST Simulations of a GW-Class MILO", *IEEE Trans. Plasma Sci.* **48**, 1894 (2020); https://doi.org/10.1109/TPS.2020.2990163.

16. R. V. Shapovalov, R. B. Spielman, P.-A. Gourdain, **R. D. McBride**, "Scaling Pulser Output Parameters for Standard and Dry Brick Configurations", *Phys. Rev. Accel. Beams*. **23**, 100401 (2020); https://doi.org/10.1103/PhysRevAccelBeams.23.100401.

17. P. F. Knapp, D. Yager-Elorriaga, M. R. Martin, A. J. Porwitzky, F. W. Doss, G. Shipley, T. Byvank, C. C. Kuranz, C. E. Myers, D. H. Dolan, K. Cochrane, M. Schollmeier, I. C. Smith, T. R. Mattsson, B. M. Jones, K. Peterson, J. Schwarz, **R. D. McBride**, D. G. Flicker, and D. B. Sinars, "A Novel, Magnetically Driven Convergent Richtmeyer-Meshkov Platform", *Phys. Plasmas* **27**, 092707 (2020); https://doi.org/10.1063/5.0013194.

18. D. B. Sinars, M. A. Sweeney, C. S. Alexander, D. J. Ampleford, T. Ao, J. P. Apruzese, C. Aragon, D. J. Armstrong, K. N. Austin, T. J. Awe, J. E. Bailey, C. R. Ball, S. Beatty, K. Beckwith, K. S. Bell, J. F. Benage, Jr., N. L. Bennett, K. Blaha, D. E. Bliss, J. J. Boerner, C. J. Bourdon, B. A. Branch, J. L. Brown, R. C. Clay III, E. M. Campbell1, D. G. Chacon, G. A. Chandler, K. Chandler, P. J. Christenson, K. R. Cochrane, A. P. Colombo, B. M. Cook, C. A. Coverdale, C. Cox, M. E. Cuneo, J. S. Custer, A. Dasgupta, J.-P. Davis, M. P. Desjarlais, D. H. Dolan III, J. D. Douglass, G. C. Dunham, S. Duwal, A. D. Edens, E. G. Evstatiev, B. G. Farfan, J. R. Fein, E. S. Field, J. A. Fisher, T. M. Flanagan, D. G. Flicker, M. D. Furnish, B. R. Galloway, P. D. Gard, T. A. Gardiner, M. Geissel, J. L. Giuliani, M. E. Glinsky, M. R. Gomez, T. Gomez, K. D. Hahn, N. D. Hamlin, S. B. Hansen, H. L. Hanshaw, E. C. Harding, A. J. Harvey-Thompson, D. Headley, M. C. Herrmann, M. H. Hess, C. Highstrete, T. A. Holt, B. T. Hutsel, C. A. Jennings, O. M. Johns, D. Johnson, M. D. Johnston, B. M. Jones, M. C. Jones, P. A. Jones, P. E. Kalita, J. W. Kellogg, M. L. Kiefer, M. W. Kimmel, P. F. Knapp, M. D. Knudson, A. Kreft, G. R. Laity, P. W. Lake, D. C. Lamppa, J. J. Leckbee, R. J. Leeper, G. T. Leifeste, R. W. Lemke, W. Lewis, S. A. Lewis, G. P. Loisel, Q. M. Looker, D. J. Lucero, M. A. Mangan, M. R. Martin, T. R. Mattsson, M. K. Matzen, A. Maurer, M. G. Mazarakis, **R. D. McBride**, C. A. McCoy, G. R. McKee, J. J. McKenney, J. A. Mills, M. D. Mitchell, N. W. Moore, C. E. Myers, T. Nagayama, G. Natoni, A. Owen, S. Patel, K. J. Peterson, J. L. Porter, A. J. Porwitzky, S. Radovich, P. K. Rambo, W. D. Reinhart, G. K. Robertson, G. A. Rochau, S. Root, D. V. Rose, D. L. Rovang, C. L. Ruiz, D. E. Ruiz, M. E. Savage, M. E. Sceiford, M. A. Schaeuble, P. F. Schmit, M. S. Schollmeier, J. Schwarz, C. T. Seagle, A. B. Sefkow1, G. A. Shipley, L. Shulenburger, S. C. Simpson, S. A. Slutz, I. C. Smith, C. S. Speas, P. E. Specht, D. Spencer, M. J. Speir, A. M. Steiner, B. S. Stoltzfus, W. A. Stygar, J. Ward Thornhill, J. A. Torres, J. P. Townsend, C. Tyler, R. A. Vesey, P. E. Wakeland, T. J. Webb, E. A. Weinbrecht, M. R. Weis, D. R. Welch, J. L. Wise, M. Wu, D. A. Yager-Elorriaga, E. P. Yu, A. Yu, "Review of pulsed-power-driven high energy density physics research on Z at Sandia", **invited plenary** in *Phys. Plasmas* **27**, 070501 (2020); https://doi.org/10.1063/5.0007476.

19. A. P. Shah, P. C. Campbell, S. M. Miller, J. M. Woolstrum, B. J. Sporer, S. G. Patel, N. M. Jordan, R. M. Gilgenbach, and **R. D. McBride**, "Optimization of switch diagnostics on the MAIZE linear transformer driver", *Rev. Sci. Instrum.* **90**, 124707 (2019); https://doi.org/10.1063/1.5113866.

20. M. Evans, M. B. Adams, P. C. Campbell, N. M. Jordan, S. M. Miller, N. B. Ramey, R. V. Shapovalov, J. Young, I. West-Abdallah, J. M. Woolstrum, **R. D. McBride**, and P.-A. Gourdain, "Reduction of ablated surface expansion in pulsed-power-driven experiments using an aerosol dielectric coating", *Phys. Plasmas* **26**, 070704 (2019); https://doi.org/10.1063/1.5066231; Featured article in AIP Scilight: https://doi.org/10.1063/1.5118431.

21. J. Narkis, H. U. Rahman, J. C. Valenzuela, F. Conti, **R. D. McBride**, D. Venosa, and F. N. Beg, "A semi-analytic model of gas-puff liner-on-target magneto-inertial fusion", *Phys. Plasmas* **26**, 032708 (2019); https://doi.org/10.1063/1.5086056.

22. M. R. Gomez, S. A. Slutz, P. F. Knapp, K. D. Hahn, M. R. Weis, E. C. Harding, M. Geissel, J. R. Fein, M. E. Glinsky, S. B. Hansen, A. J. Harvey-Thompson, C. A. Jennings, I. C. Smith, D. Woodbury, D. J. Ampleford, T. J. Awe, G. A. Chandler, M. H. Hess, D. C. Lamppa, C. E. Myers, C. L. Ruiz, A. B. Sefkow, J. Schwarz, D. A. Yager-Elorriaga, B. Jones, J. L. Porter, K. J. Peterson, **R. D. McBride**, G. A. Rochau, and D. B. Sinars, "Assessing Stagnation Conditions and Identifying Trends in Magnetized Liner Inertial Fusion", *IEEE Trans. Plasma Sci.* **47** 2081 (2019); https://doi.org/10.1109/TPS.2019.2893517.

23. P. F. Knapp, M. R. Gomez, S. B. Hansen, M. E. Glinsky, C. A. Jennings, S. A. Slutz, E. C. Harding, K. D. Hahn, M. R. Weis, M. Evans, M. R. Martin, A. J. Harvey-Thompson, M. Geissel, I. C. Smith, D. E. Ruiz, K. J. Peterson, B. M. Jones, J. Schwarz, G. A. Rochau, D. B. Sinars, **R. D. McBride**, and P.-A. Gourdain, "Origins and effects of mix on magnetized liner inertial fusion target performance", *Phys. Plasmas* **26**, 012704 (2019); https://doi.org/10.1063/1.5064548.

24. **R. D. McBride**, W. A. Stygar, M. E. Cuneo, D. B. Sinars, M. G. Mazarakis, J. J. Leckbee, M. E. Savage, B. T. Hutsel, J. D. Douglass, M. L. Kiefer, B. V. Oliver, G. R. Laity, M. R. Gomez, D. A. Yager-Elorriaga, S. G. Patel, B. M. Kovalchuk, A. A. Kim, P.-A. Gourdain, S. N. Bland, S. Portillo, S. C. Bott-Suzuki, F. N. Beg, Y. Maron, R. B. Spielman, D. V. Rose, D. R. Welch, J. C. Zier, J. W. Schumer, J. B. Greenly, A. M. Covington, A. M. Steiner, P. C. Campbell, S. M. Miller, J. M. Woolstrum, N. B. Ramey, A. P. Shah, B. J. Sporer, N. M. Jordan, Y. Y. Lau, and R. M. Gilgenbach, "A

Primer on Pulsed Power and Linear Transformer Drivers for High Energy Density Physics Applications", **invited tutorial** in *IEEE Trans. Plasma Sci.* **46**, 3928–3967 (2018); https://doi.org/10.1109/TPS.2018.2870099; (**IEEE Trans. Plasma Sci. Best Paper Award, 2021**).

25. P. C. Campbell, J. M. Woolstrum, F. Antoulinakis, T. M. Jones*, D. A. Yager-Elorriaga, S. M. Miller, N. M. Jordan, Y. Y. Lau, R. M. Gilgenbach, and **R. D. McBride**, "Diagnostic and Power Feed Upgrades to the MAIZE Facility", *IEEE Trans. Plasma Sci.* **46**, 3973 (2018); https://doi.org/10.1109/TPS.2018.2858796.

26. A. M. Steiner, P. C. Campbell, D. A. Yager-Elorriaga, N. M. Jordan, **R. D. McBride**, Y.Y. Lau, and R. M. Gilgenbach, "The Electrothermal Instability on Pulsed Power Ablations of Thin Foils", *IEEE Trans. Plasma Sci.* **46**, 3753 (2018); https://doi.org/10.1109/TPS.2018.2873947.

27. V. L. Kantsyrev, A. S. Safronova, V. V. Shlyaptseva, I. K. Shrestha, C. J. Butcher, M. T. Schmidt-Petersen, A. Stafford, A. M. Steiner, D. A. Yager-Elorriaga, P. C. Campbell, S. M. Miller, N. M. Jordan, **R. D. McBride**, R. M. Gilgenbach, J. L. Giuliani, and A. L. Velikovich, "Studies of implosion and radiative properties of tungsten planar wire arrays on Michigan's LTD pulsed power generator", *IEEE Trans. Plasma Sci.* **46**, 3778 (2018); https://doi.org/10.1109/TPS.2018.2874045.

28. B. T. Hutsel, P. A. Corcoran, M. E. Cuneo, M. R. Gomez, M. H. Hess, D. D. Hinshelwood, C. A. Jennings, G. R. Laity, D. C. Lamppa, **R. D. McBride**, J. K. Moore, A. Myers, D. V. Rose, S. A. Slutz, W. A. Stygar, E. M. Waisman, D. R. Welch, and B. A. Whitney, "Transmission-line-circuit model of an 85-TW, 25-MA pulsed-power accelerator", *Phys. Rev. Accel. Beams* **21**, 030401 (2018); https://doi.org/10.1103/PhysRevAccelBeams.21.030401.

29. D. A. Yager-Elorriaga, Y. Y. Lau, P. Zhang, P. C. Campbell, A. M. Steiner, N. M. Jordan, **R. D. McBride**, and R. M. Gilgenbach, "Evolution of sausage and helical modes in magnetized thin-foil cylindrical liners driven by a Z-pinch", **invited paper** in *Phys. Plasmas* **25**, 056307 (2018); https://doi.org/10.1063/1.5017849.

30. A. M. Steiner, P. C. Campbell, D. A. Yager-Elorriaga, K. R. Cochrane, T. R. Mattsson, N. M. Jordan, **R. D. McBride**, Y. Y. Lau, and R. M. Gilgenbach, "The electro-thermal stability of tantalum relative to aluminum and titanium in cylindrical liner ablation experiments at 550 kA", *Phys. Plasmas* **25**, 032701 (2018); https://doi.org/10.1063/1.5012891.

31. M. S. Schollmeier, P. F. Knapp, D. J. Ampleford, E. C. Harding, C. A. Jennings, D. C. Lamppa, G. P. Loisel, M. R. Martin, G. K. Robertson, J. E. Shores, I. C. Smith, C. S. Speas, M. R. Weis, J. L. Porter, and **R. D. McBride**, "A 7.2 keV spherical x-ray crystal backlighter for two-frame, two-color backlighting at Sandia's Z Pulsed Power Facility", *Rev. Sci. Instrum.* **88**, 103503 (2017); https://doi.org/10.1063/1.4994566.

32. P. F. Knapp, M. R. Martin, D. H. Dolan, K. Cochrane, D. Dalton, J.-P. Davis, C. A. Jennings, G. P. Loisel, D. H. Romero, I. C. Smith, E. P. Yu, M. R. Weis, T. R. Mattsson, **R. D. McBride**, K. Peterson, J. Schwarz, and D. B. Sinars, "Direct measurement of the inertial confinement time in a magnetically driven implosion", *Phys. Plasmas* **24**, 042708 (2017); https://doi.org/10.1063/1.4981206.

33. M. R. Gomez, R. M. Gilgenbach, M. E Cuneo, C. A. Jennings, **R. D. McBride**, E. M. Waisman, B. T. Hutsel, W. A. Stygar, D. V. Rose, and Y. Maron, "Experimental study of current loss and plasma formation in the Z machine post-hole convolute", *Phys. Rev. Accel. Beams* **20**, 010401 (2017); https://doi.org/10.1103/PhysRevAccelBeams.20.010401.

34. P. F. Knapp, C. Ball, K. Austin, S. B. Hansen, M. D. Kernaghan, P. W. Lake, D. J. Ampleford, L. A. McPherson, D. Sandoval, P. Gard, M. Wu, C. Bourdon, G. A. Rochau, **R. D. McBride**, and D. B. Sinars, "A new time and space resolved transmission spectrometer for research in inertial confinement fusion and radiation source development", *Rev. Sci. Instrum.* **88**, 013504 (2017); https://doi.org/10.1063/1.4973914.

35. **R. D. McBride**, S. A. Slutz, R. A. Vesey, M. R. Gomez, A. B. Sefkow, S. B. Hansen, P. F. Knapp, P. F. Schmit, M. Geissel, A. J. Harvey-Thompson, C. A. Jennings, E. C. Harding, T. J. Awe, D. C. Rovang, K. D. Hahn, M. R. Martin, K. R. Cochrane, K. J. Peterson, G. A. Rochau, J. L. Porter, W. A. Stygar, E.

M. Campbell, C. W. Nakhleh, M. C. Herrmann, M. E. Cuneo, and D. B. Sinars, "Exploring magnetized liner inertial fusion with a semi-analytic model", *Phys. Plasmas* **23**, 012705 (2016); https://doi.org/10.1063/1.4939479.

36. P. F. Schmit, A. L. Velikovich, **R. D. McBride**, and G. K. Robertson, "Controlling Rayleigh-Taylor Instabilities in Magnetically Driven Solid Metal Shells by Means of a Dynamic Screw Pinch", *Phys. Rev. Lett.* **117**, 205001 (2016); https://doi.org/10.1103/PhysRevLett.117.205001.

37. T. J. Awe, K. J. Peterson, E. P. Yu, **R. D. McBride**, D. B. Sinars, M. R. Gomez, C. A. Jennings, M. R. Martin, S. E. Rosenthal, D. G. Schroen, A. B. Sefkow, S. A. Slutz, K. Tomlinson, and R. A. Vesey, "Experimental Demonstration of the Stabilizing Effect of Dielectric Coatings on Magnetically Accelerated Imploding Metallic Liners", *Phys. Rev. Lett.* **116**, 065001 (2016); https://doi.org/10.1103/PhysRevLett.116.065001.

38. **R. D. McBride** and S. A. Slutz, "A semi-analytic model of magnetized liner inertial fusion", *Phys. Plasmas* **22**, 052708 (2015); http://doi.org/10.1063/1.4918953.

39. W. A. Stygar, T. J. Awe, J. E. Bailey, N. L. Bennett, E.W. Breden, E. M. Campbell, R. E. Clark, R. A. Cooper, M. E. Cuneo, J. B. Ennis, D. L. Fehl, T. C. Genoni, M. R. Gomez, G.W. Greiser, F. R. Gruner, M. C. Herrmann, B. T. Hutsel, C. A. Jennings, D. O. Jobe, B. M. Jones, M. C. Jones, P. A. Jones, P. F. Knapp, J. S. Lash, K. R. LeChien, J. J. Leckbee, R. J. Leeper, S. A. Lewis, F.W. Long, D. J. Lucero, E. A. Madrid, M. R. Martin, M. K. Matzen, M. G. Mazarakis, **R. D. McBride**, G. R. McKee, C. L. Miller, J. K. Moore, C. B. Mostrom, T. D. Mulville, K. J. Peterson, J. L. Porter, D. B. Reisman, G. A. Rochau, G. E. Rochau, D. V. Rose, D. C. Rovang, M. E. Savage, M. E. Sceiford, P. F. Schmit, R. F. Schneider, J. Schwarz, A. B. Sefkow, D. B. Sinars, S. A. Slutz, R. B. Spielman, B. S. Stoltzfus, C. Thoma, R. A. Vesey, P. E. Wakeland, D. R. Welch, M. L. Wisher, and J. R. Woodworth, "Conceptual designs of two petawatt-class pulsed-power accelerators for high-energy-density-physics experiments", *Phys. Rev. ST Accel. Beams* **18**, 110401 (2015); https://doi.org/10.1103/PhysRevSTAB.18.110401.

40. M. R. Gomez, S. A. Slutz, A. B. Sefkow, K. D. Hahn, S. B. Hansen, P. F. Knapp, P. F. Schmit, C. L. Ruiz, D. B. Sinars, E. C. Harding, C. A. Jennings, T. J. Awe, M. Geissel, D. C. Rovang, I. C. Smith, G. A. Chandler, G. W. Cooper, M. E. Cuneo, A. J. Harvey-Thompson, M. C. Herrmann, M. H. Hess, D. C. Lamppa, M. R. Martin, **R. D. McBride**, K. J. Peterson, J. L. Porter, G. A. Rochau, M. E. Savage, D. G. Schroen, W. A. Stygar, and R. A. Vesey, "Demonstration of thermonuclear conditions in magnetized liner inertial fusion experiments", *Phys. Plasmas* **22**, 056306 (2015); https://doi.org/10.1063/1.4919394.

41. S. B. Hansen, M. R. Gomez, A. B. Sefkow, S. A. Slutz, D. B. Sinars, K. D. Hahn, E. C. Harding, P. F. Knapp, P. F. Schmit, T. J. Awe, **R. D. McBride**, C. A. Jennings, M. Geissel, A. J. Harvey-Thompson, K. J. Peterson, D. C. Rovang, G. A. Chandler, G. W. Cooper, M. E. Cuneo, M. C. Herrmann, M. H. Hess, O. Johns, D. C. Lamppa, M. R. Martin, J. L. Porter, G. K. Robertson, G. A. Rochau, C. L. Ruiz, M. E. Savage, I. C. Smith, W. A. Stygar, R. A. Vesey, B. E. Blue, D. Ryutov, D. G. Schroen, and K. Tomlinson, "Diagnosing magnetized liner inertial fusion experiments on Z", *Phys. Plasmas* **22**, 056313 (2015); https://doi.org/10.1063/1.4921217.

42. D. J. Ampleford, S. N. Bland, C. A. Jennings, S. V. Lebedev, J. P. Chittenden, **R. D. McBride**, B. Jones, J. D. Serrano, M. E. Cuneo, G. N. Hall, F. Suzuki-Vidal, and S. C. Bott-Suzuki, "Investigating Radial Wire Array Z-Pinches as a Compact X-Ray Source on the Saturn Generator", *IEEE Trans. Plasma Sci.* **43**, 3344 (2015); https://doi.org/10.1109/TPS.2015.2436339.

43. E. M. Waisman, **R. D. McBride**, M. E. Cuneo, D. F. Wenger, W. E. Fowler, W. A. Johnson, L. I. Basilio, R. S. Coats, C. A. Jennings, D. B. Sinars, R. A. Vesey, B. Jones, D. J. Ampleford, R. W. Lemke, M. R. Martin, P. C. Schrafel, S. A. Lewis, J. K. Moore, M. E. Savage, and W. A. Stygar, "Voltage measurements at the vacuum post-hole convolute of the Z pulsed-power accelerator", *Phys. Rev. ST Accel. Beams* **17**, 120401 (2014); https://doi.org/10.1103/PhysRevSTAB.17.120401.

44. D. C. Rovang, D. C. Lamppa, M. E. Cuneo, A. C. Owen, J. McKenney, D. W. Johnson, S. Radovich, R. J. Kaye, **R. D. McBride**, C. S. Alexander, T. J. Awe, S. A. Slutz, A. B. Sefkow, T. A. Haill, P. A. Jones, J. W. Argo, D. G. Dalton, G. K. Robertson, E. M. Waisman, D. B. Sinars, J. Meissner, M. Milhous, D. Nguyen, and C. Mielke "Pulsed-coil magnet systems for applying uniform 10-30 tesla

fields to centimeter-scale targets on Sandia's Z facility", *Rev. Sci. Instrum.* **85**, 124701 (2014); https://doi.org/10.1063/1.4902566.

45. M. R. Gomez, S. A. Slutz, A. B. Sefkow, D. B. Sinars, K. D. Hahn, S. B. Hansen, E. C. Harding, P. F. Knapp, P. F. Schmit, C. A. Jennings, T. J. Awe, M. Geissel, D. C. Rovang, G. A. Chandler, G. W. Cooper, M. E. Cuneo, A. J. Harvey-Thompson, M. C. Herrmann, M. H. Hess, O. Johns, D. C. Lamppa, M. R. Martin, **R. D. McBride**, K. J. Peterson, J. L. Porter, G. K. Robertson, G. A. Rochau, C. L. Ruiz, M. E. Savage, I. C. Smith, W. A. Stygar, and R. A. Vesey, "Experimental Demonstration of Fusion-Relevant Conditions in Magnetized Liner Inertial Fusion", *Phys. Rev. Lett.* **113**, 155003 (2014); https://doi.org/10.1103/PhysRevLett.113.155003.

46. P. F. Schmit, P. F. Knapp, S. B. Hansen, M. R. Gomez, K. D. Hahn, D. B. Sinars, K. J. Peterson, S. A. Slutz, A. B. Sefkow, T. J. Awe, E. Harding, C. A. Jennings, G. A. Chandler, G. W. Cooper, M. E. Cuneo, M. Geissel, A. J. Harvey-Thompson, M. C. Herrmann, M. H. Hess, O. Johns, D. C. Lamppa, M. R. Martin, **R. D. McBride**, J. L. Porter, G. K. Robertson, G. A. Rochau, D. C. Rovang, C. L. Ruiz, M. E. Savage, I. C. Smith, W. A. Stygar, and R. A. Vesey, "Understanding fuel magnetization and mix using secondary nuclear reactions in magneto-inertial fusion", *Phys. Rev. Lett.* **113**, 155004 (2014); https://doi.org/10.1103/PhysRevLett.113.155004.

47. T. J. Awe, C. A. Jennings, **R. D. McBride**, M. E. Cuneo, D. C. Lamppa, M. R. Martin, D. C. Rovang, D. B. Sinars, S. A. Slutz, A. C. Owen, K. Tomlinson, M. R. Gomez, S. B. Hansen, M. C. Herrmann, M. C. Jones, J. L. McKenney, G. K. Robertson, G. A. Rochau, M. E. Savage, D. G. Schroen, and W. A. Stygar, "Modified helix-like instability structure on imploding z-pinch liners that are pre-imposed with a uniform axial magnetic field", *Phys. Plasmas* **21**, 056303 (2014); https://doi.org/10.1063/1.4872331.

48. **R. D. McBride**, M. R. Martin, R. W. Lemke, J. B. Greenly, C. A. Jennings, D. C. Rovang, D. B. Sinars, M. E. Cuneo, M. C. Herrmann, S. A. Slutz, C. W. Nakhleh, D. D. Ryutov, J.-P. Davis, D. G. Flicker, B. E. Blue, K. Tomlinson, D. Schroen, R. M. Stamm, G. E. Smith, J. K. Moore, T. J. Rogers, G. K. Robertson, R. J. Kamm, I. C. Smith, M. Savage, W. A. Stygar, G. A. Rochau, M. Jones, M. R. Lopez, J. L. Porter, and M. K. Matzen, "Beryllium liner implosion experiments on the Z accelerator in preparation for magnetized liner inertial fusion", **invited paper** in *Phys. Plasmas* **20**, 056309 (2013); https://doi.org/10.1063/1.4803079.

49. T. J. Awe, **R. D. McBride**, C. A. Jennings, D. C. Lamppa, M. R. Martin, D. C. Rovang, S. A. Slutz, M. E. Cuneo, A. C. Owen, D. B. Sinars, K. Tomlinson, M. R. Gomez, S. B. Hansen, M. C. Herrmann, J. L. McKenney, C. Nakhleh, G. K. Robertson, G. A. Rochau, M. E. Savage, D. G. Schroen, and W. A. Stygar, "Observations of Modified Three-Dimensional Instability Structure for Imploding Z-Pinch Liners that are Premagnetized with an Axial Field", *Phys. Rev. Lett.* **111**, 235005 (2013); https://doi.org/10.1103/PhysRevLett.111.235005.

50. D. H. Dolan, R. W. Lemke, **R. D. McBride**, M. R. Martin, E. Harding, D. G. Dalton, B. E. Blue, and S. S. Walker, "Tracking an imploding cylinder with photonic Doppler velocimetry", *Rev. Sci. Instrum.* **84**, 055102 (2013); https://doi.org/10.1063/1.4803074.

51. G. N. Hall, S. V. Lebedev, F. Suzuki-Vidal, G. Swadling, J. P. Chittenden, S. N. Bland, A. Harvey-Thompson, P. F. Knapp, I. C. Blesener, **R. D. McBride**, D. A. Chalenski, K. S. Blesener, J. B. Greenly, S. A. Pikuz, T. A. Shelkovenko, D. A. Hammer, and B. R. Kusse, "Ablation dynamics in coiled wire-array Z-pinches", *Phys. Plasmas* **20**, 022703 (2013); http://doi.org/10.1063/1.4789851.

52. **R. D. McBride**, S. A. Slutz, C. A. Jennings, D. B. Sinars, M. E. Cuneo, M. C. Herrmann, R.W. Lemke, M. R. Martin, R. A. Vesey, K. J. Peterson, A. B. Sefkow, C. Nakhleh, B. E. Blue, K. Killebrew, D. Schroen, T. J. Rogers, A. Laspe, M. R. Lopez, I. C. Smith, B. W. Atherton, M. Savage, W. A. Stygar, and J. L. Porter, "Penetrating Radiography of Imploding and Stagnating Beryllium Liners on the Z Accelerator", *Phys. Rev. Lett.* **109**, 135004 (2012); https://doi.org/10.1103/PhysRevLett.109.135004.

53. D. B. Sinars, **R. D. McBride**, S. A. Pikuz, T. A. Shelkovenko, D. F. Wenger, M. E. Cuneo, E. P. Yu, J. P. Chittenden, E. C. Harding, S. B. Hansen, B. P. Peyton, D. J. Ampleford, and C. A. Jennings, "Investigation of High-Temperature Bright Plasma X-ray Sources Produced in 5-MA X-Pinch Experiments", *Phys. Rev. Lett.* **109**, 155002 (2012); https://doi.org/10.1103/PhysRevLett.109.155002.

54. M. R. Martin, R. W. Lemke, **R. D. McBride**, J. P. Davis, D. H. Dolan, M. D. Knudson, K. R. Cochrane, D. B. Sinars, I. C. Smith, M. Savage, W. A. Stygar, K. Killebrew, D. G. Flicker, and M. C. Herrmann, "Solid liner implosions on Z for producing multi-megabar, shockless compressions", *Phys. Plasmas* **19**, 056310 (2012); https://doi.org/10.1063/1.3694519.

55. M. E. Cuneo, M. C. Herrmann, D. B. Sinars, S. A. Slutz, W. A. Stygar, R. A. Vesey, A. B. Sefkow, G. A. Rochau, G. A. Chandler, J. E. Bailey, J. L. Porter, **R. D. McBride**, D. C. Rovang, M. G. Mazarakis, E. P. Yu, D. C. Lamppa, K. J. Peterson, C. Nakhleh, S. B. Hansen, A. J. Lopez, M. E. Savage, C. A. Jennings, M. R. Martin, R. W. Lemke, B. W. Atherton, I. C. Smith, P. K. Rambo, M. Jones, M. R. Lopez, P. J. Christenson, M. A. Sweeney, B. Jones, L. A. McPherson, E. Harding, M. R. Gomez, P. F. Knapp, T. J. Awe, R. J. Leeper, C. L. Ruiz, G. W. Cooper, K. D. Hahn, J. McKenney, A. C. Owen, G. R. McKee, G. T. Leifeste, D. J. Ampleford, E. M. Waisman, A. Harvey-Thompson, R. J. Kaye, M. H. Hess, S. E. Rosenthal, and M. K. Matzen, "Magnetically Driven Implosions for Inertial Confinement Fusion at Sandia National Laboratories", *IEEE Trans. Plasma Sci.* **40**, 3222 (2012); https://doi.org/10.1109/TPS.2012.2223488.

56. S. C. Bott, D. Mariscal, K. Gunasekera, J. Peebles, F. N. Beg, D. A. Hammer, B. R. Kusse, J. B. Greenly, T. A. Shelkovenko, S. A. Pikuz, I. C. Blesener, **R. D. McBride**, J. D. Douglass, K. S. Blesener, and P. F. Knapp, "Experimental Analysis of the Acceleration Region in Tungsten Wire Arrays", *IEEE Trans. Plasma Sci.* **40**, 3324 (2012); https://doi.org/10.1109/TPS.2012.2213307.

57. **R. D. McBride**, C. E. Seyler, S. A. Pikuz, D. A. Hammer, D. J. Ampleford, T. A. Shelkovenko, and M. R. Martin, "Anode–Cathode Asymmetry in a Wire-Array Z-Pinch: Highly Resolved Axial-Shear-Flow Structure Observed on the Outer Edges of Ablating Wires", *IEEE Trans. Plasma Sci.* **39**, 2430 (2011); https://doi.org/10.1109/TPS.2011.2163732.

58. D. B. Sinars, S. A. Slutz, M. C. Herrmann, **R. D. McBride**, M. E. Cuneo, C. A. Jennings, J. P. Chittenden, A. L. Velikovich, K. J. Peterson, R. A. Vesey, C. Nakhleh, E. M. Waisman, B. E. Blue, K. Killebrew, D. Schroen, K. Tomlinson, A. D. Edens, M. R. Lopez, I. C. Smith, J. Shores, V. Bigman, G. R. Bennett, B. W. Atherton, M. Savage, W. A. Stygar, G. T. Leifeste, and J. L. Porter, "Measurements of magneto-Rayleigh–Taylor instability growth during the implosion of initially solid metal liners", *Phys. Plasmas* **18**, 056301 (2011); https://doi.org/10.1063/1.3560911.

59. D. J. Ampleford, S. N. Bland, S. V. Lebedev, J. P. Chittenden, G. N. Hall, F. Suzuki-Vidal, C. A. Jennings, M. E. Cuneo, T. J. Rogers, M. Cleveland, **R. D. McBride**, J. D. Serrano, B. Peyton, and M. C. Jones, "Extreme-UV Self-Emission From Plasma-Focus Radial Wire Array", *IEEE Trans. Plasma Sci.* **39**, 2420 (2011); https://doi.org/10.1109/TPS.2011.2166278.

60. **R. D. McBride**, C. A. Jennings, R. A. Vesey, G. A. Rochau, M. E. Savage, W. A. Stygar, M. E. Cuneo, D. B. Sinars, M. Jones, K. R. LeChien, M. R. Lopez, J. K. Moore, K.W. Struve, T. C. Wagoner, and E. M. Waisman, "Displacement current phenomena in the magnetically insulated transmission lines of the refurbished Z accelerator", *Phys. Rev. ST Accel. Beams* **13**, 120401 (2010); https://doi.org/10.1103/PhysRevSTAB.13.120401.

61. D. B. Sinars, S. A. Slutz, M. C. Herrmann, **R. D. McBride**, M. E. Cuneo, K. J. Peterson, R. A. Vesey, C. Nakhleh, B. E. Blue, K. Killebrew, D. Schroen, K. Tomlinson, A. D. Edens, M. R. Lopez, I. C. Smith, J. Shores, V. Bigman, G. R. Bennett, B. W. Atherton, M. Savage, W. A. Stygar, G. T. Leifeste, and J. L. Porter, "Measurements of Magneto-Rayleigh-Taylor Instability Growth during the Implosion of Initially Solid Al Tubes Driven by the 20-MA, 100-ns Z Facility", *Phys. Rev. Lett.* **105**, 185001 (2010); https://doi.org/10.1103/PhysRevLett.105.185001.

62. T. A. Shelkovenko, S. A. Pikuz, **R. D. McBride**, P. F. Knapp, G. Wilhelm, D. B. Sinars, D. A. Hammer, and N. Yu. Orlov, "Symmetric Multilayer Megampere X-Pinch", *Plasma Phys. Reports (Fizika Plazmy)* **36**, 50 (2010); https://doi.org/10.1134/S1063780X10010046.

63. **R. D. McBride**, T. A. Shelkovenko, S. A. Pikuz, D. A. Hammer, J. B. Greenly, B. R. Kusse, J. D. Douglass, P. F. Knapp, K. S. Bell, I. C. Blesener, D. A. Chalenski, "Implosion dynamics and radiation characteristics of wire-array Z pinches on the Cornell Beam Research Accelerator", *Phys. Plasmas* **16**, 012706 (2009); https://doi.org/10.1063/1.3054537.

64. J. C. Zier, J. D. Douglass, I. C. Blesener, K. S. Blesener, D. A. Chalenski, R. M. Gilgenbach, J. B. Greenly, D. A. Hammer, P. F. Knapp, B. R. Kusse, Y. Y. Lau, **R. D. McBride**, W. Syed, and E. P. Yu, "Azimuthally correlated ablation between z-pinch wire cores", *Phys. Plasmas* **16**, 102702 (2009); https://doi.org/10.1063/1.3243917.

65. S. C. Bott, D. M. Haas, Y. Eshaq, U. Ueda, F. N. Beg, D. A. Hammer, B. Kusse, J. Greenly, T. A. Shelkovenko, S. A. Pikuz, I. C. Blesener, **R. D. McBride**, J. D. Douglass, K. Bell, P. Knapp, J. P. Chittenden, S. V. Lebedev, S. N. Bland, G. N. Hall, F. A. Suzuki Vidal, A. Marocchino, A. Harvey-Thomson, M. G. Haines, J. B. A. Palmer, A. Esaulov, and D. J. Ampleford, "Study of the effect of current rise time on the formation of the precursor column in cylindrical wire array Z pinches at 1 MA", *Phys. Plasmas* **16**, 072701 (2009); https://doi.org/10.1063/1.3159864.

66. T. A. Shelkovenko, S. A. Pikuz, **R. D. McBride**, P. F. Knapp, H. Wilhelm, D. A. Hammer, D. B. Sinars, "Nested multilayered X pinches for generators with mega-ampere current level", *Phys. Plasmas* **16**, 050702 (2009); https://doi.org/10.1063/1.3132611.

67. K. M. Williamson, V. L. Kantsyrev, A. A. Esaulov, A. S. Safronova, N. D. Ouart, F. M Yilmaz, I. K. Shrestha, V. Shlyaptseva, **R. D. McBride**, D. A. Chalenski, J. D. Douglass, J. B. Greenly, D. A. Hammer, B. R. Kusse, "Ablation dominated implosion dynamics of aluminum and stainless steel nested cylindrical wire arrays", *Phys. Plasmas* **16**, 012704 (2009); https://doi.org/10.1063/1.3054522.

68. T. A. Shelkovenko, S. A. Pikuz, I. C. Blesener, **R. D. McBride**, K. S. Bell, D. A. Hammer, A. V. Agafonov, V. M. Romanova, and A. R. Mingaleev, "Measurements of high-current electron beams from X pinches and wire array Z pinches", *Rev. Sci. Instrum.* **79**, 10E316 (2008); https://doi.org/10.1063/1.2957920.

69. D. B. Sinars, S. A. Pikuz, J. D. Douglass, **R. D. McBride**, D. J. Ampleford, P. Knapp, K. Bell, D. Chalenski, M. E. Cuneo, J. B. Greenly, D. A. Hammer, B. R. Kusse, A. Mingaleev, T. A. Shelkovenko, D. F. Wenger, "Bright spots in 1 MA X pinches as a function of wire number and material", *Phys. Plasmas* **15**, 092703 (2008); https://doi.org/10.1063/1.2982496.

70. A. S. Safronova, V. L. Kantsyrev, A. A. Esaulov, N. D. Ouart, M. F. Yilmaz, K. M. Williamson, I. Shrestha, G. C. Osborne, J. B. Greenly, K. M. Chandler, **R. D. McBride**, D. A. Chalenski, D. A. Hammer, B. R. Kusse, P. D. LePell, "Spectroscopy and implosion dynamics of low wire number nested arrays on the 1-MA COBRA generator", *Phys. Plasmas* **15**, 033302 (2008); https://doi.org/10.1063/1.2888520.

71. T. A. Shelkovenko, S. A. Pikuz, J. D. Douglass, I. C. Blesener, J. B. Greenly, **R. D. McBride**, D. A. Hammer, B. R. Kusse, "Wire core and coronal plasma expansion in wire-array Z pinches with small numbers of wires", *Phys. Plasmas* **14**, 102702 (2007); https://doi.org/10.1063/1.2786859.

72. J. D. Douglass, S. A. Pikuz, T. A. Shelkovenko, D. A. Hammer, S. N. Bland, S. C. Bott, **R. D. McBride**, "Structure of the dense cores and ablation plasmas in the initiation phase of tungsten wire-array z-pinches", *Phys. Plasmas* **14**, 012704 (2007); https://doi.org/10.1063/1.2431633.

73. S. A. Pikuz, T. A. Shelkovenko, M. D. Mitchell, K. M. Chandler, J. D. Douglass, **R. D. McBride**, D. P. Jackson, and D. A. Hammer, "Extreme luminosity imaging conical spectrograph", *Rev. Sci. Instrum.* **77**, 10F309 (2006); https://doi.org/10.1063/1.2221893.

74. T. A. Shelkovenko, D. A. Chalenski, K. M. Chandler, J. D. Douglass, J. B. Greenly, D. A. Hammer, B. R. Kusse, **R. D. McBride**, S. A. Pikuz, "Diagnostics on the COBRA pulsed power generator", *Rev. Sci. Instrum.* **77**, 10F521 (2006); https://doi.org/10.1063/1.2229189.

75. T. A. Shelkovenko, S. A. Pikuz, J. D. Douglass, **R. D. McBride**, J. B. Greenly, D. A. Hammer, "Multiwire x-pinches at 1-MA current on the COBRA pulsed power generator", *IEEE Trans. Plasma Sci.* **34**, 2336 (2006); https://doi.org/10.1109/TPS.2006.878362.

76. V. L. Kantsyrev, D. A. Fedin, A. A. Esaulov, A. S. Safronova, V. Nalajala, K. Williamson, G. Osborne, M. F. Yilmaz, N. D. Ouart, J. B. Greenly, J. D. Douglass, **R. D. McBride**, L. M. Maxson, D. A. Hammer, A. L. Velikovich, "Al and W wire array implosions and energy deposition on the 1-MA

COBRA generator", *IEEE Trans. Plasma Sci.* **34**, 2288 (2006); https://doi.org/10.1109/TPS.2006.883376.

77. A. S. Safronova, V. L. Kantsyrev, D. A. Fedin, G. Osborne, M. F. Yilmaz, T. Hoppe, V Nalajala, J. D. Douglass, **R. D. McBride**, M. D. Mitchell, L. M. Maxson, D. A. Hammer, "Spectroscopic and imaging study of combined W and Mo x-pinches at 1-MA z-pinch generators", *IEEE Trans. Plasma Sci.* **34**, 2256 (2006); https://doi.org/10.1109/TPS.2006.878361.

PUBLICATIONS IN CONFERENCE PROCEEDINGS

1. L. Welch*, J. Tait*, G. Young*, and **R. McBride**, "Design of a Pulsed Power Facility to Handle High Fusion Yields", in the *Proceedings of the 2021 American Nuclear Society Student Conference, Technical Track on Fusion Energy & Plasmas* (2021). (Won best paper award.)

2. A. T. MacDonald*, M. Y. Hua, and **R. D. McBride**, "MCNPX-PoliMi Model Development of nTOF Measurements of DD Fusion in an LTD", in the *Proceedings of the 2019 American Nuclear Society Student Conference, Technical Track on Fusion Energy & Plasmas* (2019).

3. F. B. Darby*, J. M. Woolstrum*, A. P. Rao*, N. M. Jordan, and **R. D. McBride**, "The Development and Implementation of X-pinch Diagnostics for MAIZE", in the *Proceedings of the 2017 American Nuclear Society Student Conference, Technical Track on Fusion Energy & Plasmas* (2017).

4. W. Stygar, K. Austin, T. Awe, J. Bailey, E. Breden, G. Brent, J. Calhoun, M. Campbell, R. Clark, R. Cooper, M. Cuneo, J. Edwards, J. Ennis, R. Gilgenbach, M. Gomez, P. Gourdain, G. Greiser, F. Gruner, J. Hammer, M. Herrmann, M. Hess, B. Hutsel, C. Jennings, D. Jobe, O. Johns, B. Jones, M. Jones, P. Jones, K. Keilholtz, P. Knapp, G. Laity, D. Lamppa, K. LeChien, J. Leckbee, S. Lewis, D. Lucero, M. Martin, K. K. Matzen, M. Mazarakis, **R. McBride**, R. McKee, J. Moore, C. Mostrom, T. Mulville, D. Muron, K. Peterson, D. Pilkington, J. Porter, K. Raman, G. Rochau, D. Rose, M. Savage, M. Sceiford, P. Schmit, R. Schneider, D. Sinars, S. Slutz, R. Spielman, B. Stoltzfus, C. Verdon, R. Vesey, E. Waisman, E. Weinbrecht, D. Welch, and M. Wisher, "Conceptual design of a 960-TW accelerator powered by impedance-matched Marx generators", in the *Proceedings of the 21st IEEE International Pulsed Power Conference,* pp. 1–8 (2017).

5. K. D. Hahn, G. A. Chandler, C. L. Ruiz, G. W. Cooper, M. R. Gomez, S. Slutz, A. B. Sefkow, D. B. Sinars, S. B. Hansen, P. F. Knapp, P. F. Schmit, E. Harding, C. A. Jennings, T. J. Awe, M. Geissel, D. C. Rovang, J. A. Torres, J. A. Bur, M. E. Cuneo, V. Yu Glebov, A. J. Harvey-Thompson, M. C. Herrmann, M. H. Hess, O. Johns, B. Jones, D. C. Lamppa, J. S. Lash, M. R. Martin, **R. D. McBride**, K. J. Peterson, J. L. Porter, J. Reneker, G. K. Robertson, G. A. Rochau, M. E. Savage, I. C. Smith, J. D. Styron, and R. A. Vesey, "Fusion-neutron measurements for magnetized liner inertial fusion experiments on the Z accelerator", in the *Proceedings of the 9th International Conference on Inertial Fusion Sciences and Applications (IFSA 2015), Journal of Physics: Conference Series* **717**, 012020 (2016).

6. M. Geissel, T. J. Awe, D. E. Bliss, E. M. Campbell, M. R. Gomez, E. Harding, A. J. Harvey-Thompson, S. B. Hansen, C. Jennings, M. W. Kimmel, P. Knapp, S. M. Lewis, **R. D. McBride**, K. Peterson, M. Schollmeier, D. J. Scoglietti, A. B. Sefkow, J. E. Shores, D. B. Sinars, S. A. Slutz, I. C. Smith, C. S. Speas, R. A. Vesey, and J. L. Porter, "Nonlinear Laser-Plasma Interaction in Magnetized Liner Inertial Fusion", in the *Proceedings of the SPIE Photonics West Conference on Nonlinear Frequency Generation and Conversion: Materials, Devices, and Applications XV, Proc. SPIE* **9731**, 97310O (2016).

7. D. D. Ryutov, T. J. Awe, S. B. Hansen, **R. D. McBride**, K. J. Peterson, D. B. Sinars, and S. A. Slutz, "Effect of axial magnetic flux compression on the magnetic Rayleigh-Taylor instability (theory)", in the *Proceedings of the 9th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1639**, 63 (2014).

8. M. R. Gomez, M. E. Cuneo, J.-P. Davis, R. W. Lemke, **R. D. McBride**, R. B. Campbell, C. A. Jennings, W. A. Stygar, D. V. Rose, D. R. Welch, and E. A. Madrid, "A systematic study of current flow and impedance behavior in the Z machine double post-hole convolute", in the *Proceedings of the 19th IEEE International Pulsed Power Conference,* pp. 1–6 (2013).

9. M. R. Martin, R. W. Lemke, **R. D. McBride**, J.-P. Davis, and M. D. Knudson, "Analysis of cylindrical ramp compression experiment with radiography based surface fitting method", in the *Proceedings of the 7th Biennial Conference of the American Physical Society Topical Group on Shock Compression of Condensed Matter, AIP Conf. Proc.* **1426**, 357 (2012).

10. R. W. Lemke, M. R. Martin, **R. D. McBride**, J.-P. Davis, M. D. Knudson, D. Sinars, I. C. Smith, M. Savage, W. Stygar, K. Killebrew, D. G. Flicker, and Mark Herrmann, "Determination of pressure and density of shocklessly compressed beryllium from x-ray radiography of a magnetically driven cylindrical liner implosion", in the *Proceedings of the 7th Biennial Conference of the American Physical Society Topical Group on Shock Compression of Condensed Matter, AIP Conf. Proc.* **1426**, 473 (2012).

11. M. R. Gomez, M. E. Cuneo, **R. D. McBride**, G. A. Rochau, D. J. Ampleford, J. E. Bailey, A. D. Edens, B. Jones, M. Jones, M. R. Lopez, M. E. Savage, D. B. Sinars, W. A. Stygar, and R. M. Gilgenbach, "Spectroscopic measurements in the post-hole convolute on Sandia's Z-Machine", in the *Proceedings of the 18th IEEE International Pulsed Power Conference (invited)*, pp. 688-695 (2011).

12. J. P. VanDevender, D. B. Seidel, K. A. Mikkelson, R. D. Thomas, B. P. Peyton, V. J. Harper-Slaboszewicz, **R. D. McBride**, M. E. Cuneo, and L. X. Schneider, "Inverse diode for combination of multiple modules and fusion driver-target standoff", in the *Proceedings of the 18th IEEE International Pulsed Power Conference*, pp. 1009–1014 (2011).

13. S. C. Bott, D. M. Haas, Y. Eshaq, U. Ueda, F. N. Beg, D. A. Hammer, B. Kusse, J. Greenly, T. A. Shelkovenko, S. A. Pikuz, I. C. Blesener, **R. D. McBride**, J. D. Douglass, K. Bell, P. Knapp, J. P. Chittenden, S. V. Lebedev, S. N. Bland, G. N. Hall, F. A. Suzuki, A. Marocchino, A. Harvey-Thomson, and D. J. Ampleford, "Effect of Current Rise-time on the Formation of Precursor Structures and Mass Ablation Rate in Cylindrical Wire Array Z-Pinches", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 25 (2009).

14. D. A. Chalenski, B. R. Kusse, J. B. Greenly, I. C. Blesener, **R. D. McBride**, D. A. Hammer, and P. F. Knapp, "Soldered Contact and Current Risetime Effects on Negative Polarity Wire Array Z-pinches", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 29 (2009).

15. J. Greenly, M. Martin, I. Blesener, D. Chalenski, P. Knapp, and **R. McBride**, "The Role of Flux Advection in the Development of the Ablation Streams and Precursors of Wire Array", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 53 (2009).

16. P. F. Knapp, K. S. Bell, I. C. Blesener, D. A. Chalenski, J. D. Douglass, J. B. Greenly, M. R. Martin, **R. D. McBride**, S. A. Pikuz, T. A. Shelkovenko, D. A. Hammer, B. R. Kusse, and G. N. Hall, "Development of the Axial Instability in Low Wire Number Wire Array Z-Pinches", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 61 (2009).

17. N. D. Ouart, M. F. Yilmaz, A. S. Safronova, V. L. Kantsyrev, A. A. Esaulov, K. M. Williamson, G. C. Osborne, I. Shrestha, M. E. Weller, **R. D. McBride**, P. F. Knapp, K. S. Bell, S. A. Pikuz, T. A. Shelkovenko, J. B. Greenly, D. A. Hammer, and B. R. Kusse, "Analysis of Compact Cylindrical Wire Array Implosions with Brass and also by Alternating Brass and Al wires on the 1-MA COBRA Generator", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 65 (2009).

18. S. A. Pikuz, T. A. Shelkovenko, **R. D. McBride**, and D. A. Hammer, "Studies of Hot Spots in Imploding Wire Arrays at 1 MA on COBRA", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 69 (2009).

19. G. N. Hall, S. N. Bland, S. V. Lebedev, J. P. Chittenden, J. B. A. Palmer, F. A. Suzuki-Vidal, G. F. Swadling, N. Niasse, P. F. Knapp, I. C. Blesener, **R. D. McBride**, D. A. Chalenski, K. S. Bell, J. B. Greenly, T. Blanchard, H. Wilhelm, D. A. Hammer, B. R. Kusse, and Simon C. Bott, "Modifying Wire Array Z-pinch Ablation Structure and Implosion Dynamics Using Coiled Arrays", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 89 (2009).

20. V. L. Kantsyrev, A. S. Safronova, A. A. Esaulov, K. M. Williamson, I. Shrestha, N. D. Ouart, M. F. Yilmaz, P. G. Wilcox, G. C. Osborne, M. E. Weller, V. V. Shlyaptseva, A. S. Chuvatin, L. I. Rudakov, J. B. Greenly, **R. D. McBride**, P. F. Knapp, I. C. Blessener, K. S. Bell, D. A. Chalenski, D. A. Hammer, and B. R. Kusse, "Physics of Multi-Planar and Compact Cylindrical Wire Array Implosions on University-Scale Z-pinch Generators", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 113 (2009).

21. T. A. Shelkovenko, S. A. Pikuz, **R. D. McBride**, P. F. Knapp, H. Wilhelm, D. A. Hammer, and D. B. Sinars, "Nested X Pinches on the COBRA Generator", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 155 (2009).

22. K. S. Bell, T. A. Shelkovenko, S. A. Pikuz, **R. D. McBride**, I. C. Blesener, P. F. Knapp, D. A. Hammer, J. B. Greenly, Y. Maron, "Optical Spectroscopy Experiments on the 500 kA XP Pulsed-Power Generator", in the *Proceedings of the 7th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **1088**, 161 (2009).

23. J. D. Douglass, J. B. Greenly, D. A. Hammer, **R. D. McBride**, S. A. Pikuz, T. A. Shelkovenko, "The imaging of z-pinches using x-pinch backlighting", in the *Proceedings of the 6th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **808**, 129 (2006).

24. T. A. Shelkovenko, S. A. Pikuz, J. D. Douglass, **R. D. McBride**, D. A. Hammer, "Multiwire x-pinches on the COBRA pulsed power generator", in the *Proceedings of the 6th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **808**, 153 (2006).

25. A. Safronova, V. Kantsyrev, D. Fedin, F. Yilmaz, T. Hoppe, V. Nalajala, J. Douglass, **R. McBride**, M. Mitchell, L. Maxson, D. Hammer, "X-ray spectroscopy and imaging of combined x-pinches with Mo and W wires at Cornell and UNR 1-MA pulsed power devices", in the *Proceedings of the 6th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **808**, 145 (2006).

26. N. Ouart, A. Safronova, V. Kantsyrev, D. Fedin, J. Douglass, **R. McBride**, M. Mitchell, L. Maxson, D. Hammer, "Spectroscopic modeling of x-pinch plasmas from alloy wires with Cr, Co, and Ni K- and L-shell radiators", in the *Proceedings of the 6th International Conference on Dense Z-Pinches, AIP Conf. Proc.* **808**, 311 (2006).

27. J. D. Douglass, J. B. Greenly, D. A. Hammer, B. R. Kusse, **R. D. McBride**, S. A. Pikuz, "Design and use of small Rogowski coils for use with large, fast current pulses", in the *Proceedings of the 15th IEEE International Pulsed Power Conference*, pp. 717–720 (2005).

28. J. D. Douglass, J. B. Greenly, D. A. Hammer, B. R. Kusse, J. T. Blanchard, L. M. Maxson, **R. D. McBride**, H. Wilhelm, S. C. Glidden, S. Grasso, H. D. Sanders, "Capabilities of the reconfigured COBRA accelerator", in the *Proceedings of the 15th IEEE International Pulsed Power Conference*, pp. 273–276 (2005).

29. **R. D. McBride**, S. G. Rosser, R. P. Nowak, "Modeling and simulation of 12.5 Gb/s on a HyperBGA® package", in the *Proceedings of the 28th IEEE International Electronics Manufacturing Technology Symposium*, pp. 143–147 (2003); http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.84.2537&rep=rep1&type=pdf.

NATIONAL LABORATORY TECHNICAL REPORTS (LIBRARY MAINTAINED)

1. G. R. Laity, A. C. Robinson, M. E. Cuneo, M. K. Alam, K. R. C. Beckwith, N. L. Bennett, M. T. Bettencourt, S. D. Bond, K. Cochrane, L. Criscenti, E. C. Cyr, K. De Zetter, R. R. Drake, E. G. Evstatiev, A. S. Fierro, T. A. Gardiner, F. W. Glines, R. S. Goeke, N. D. Hamlin, R. Hooper, J. Koski, J. M. Lane, S. R. Larson, K. Leung, D. A. McGregor, P. R. Miller, S. M. Miller, S. J. Ossareh, E. G. Phillips, N. A. Roberds, C. E. Rose, J. N. Shadid, S. Shields, S. C. Simpson, D. Sirajuddin, T. M. Smith, M. S. Swan, A. P. Thompson, J. G. Tranchida, D. R. Welch, T. C. Genoni, C. Thoma, A. Russell, E. D. Watson, D. V. Rose, J. Williams, A. Yalin, **R. D. McBride**, and T. J. Smith, "Towards Predictive Plasma Science and Engineering through Revolutionary Multi-Scale Algorithms and Models, Final

Report", Technical Report No. SAND2021-0718, Sandia National Laboratories, Albuquerque, NM (2021); https://doi.org/10.2172/1813907.

2. **R. D. McBride**, D. E. Bliss, M. R. Gomez, S. B. Hansen, M. R. Martin, C. A. Jennings, S. A. Slutz, D. C. Rovang, P. F. Knapp, P. F. Schmit, T. J. Awe, M. H. Hess, R. W. Lemke, D. H. Dolan, D. C. Lamppa, M. R. L. Jobe, L. Fang, K. D. Hahn, G. A. Chandler, G. W. Cooper, C. L. Ruiz, A. J. Maurer, G. K. Robertson, M. E. Cuneo, D. B. Sinars, K. Tomlinson, G. Smith, R. R. Paguio, T. P. Intrator, T. E. Weber, and J. B. Greenly, "Implementing and diagnosing magnetic flux compression on the Z pulsed power accelerator", Technical Report No. SAND2015-9860, Sandia National Laboratories, Albuquerque, NM (2015); https://doi.org/10.2172/1226004.

3. C. A. Jennings, D. J. Ampleford, B. M. Jones, **R. D. McBride**, J. E. Bailey, M. C. Jones, M. R. Gomez, M. E. Cuneo, C. Nakhleh, W. A. Stygar, M. Savage, T. C. Wagoner, J. K. Moore, "Integration of MHD load models with circuit representations the Z generator", Technical Report No. SAND2013-2690, Sandia National Laboratories, Albuquerque, NM (2013); https://doi.org/10.2172/1095961.

4. D. B. Sinars, **R. McBride**, D. Rovang, A. Sefkow, S. Slutz, R. Lemke, M. Cuneo, M. Herrmann, C. Jennings, M. Jobe, D. Lamppa, M. Martin, C. Nakhleh, A. Owen, J. McKenney, R. Mock, T. Peters, G. Torres, E. Waisman, "Stability of fusion target concepts on Z", Technical Report No. SAND2012-8009, Sandia National Laboratories, Albuquerque, NM (2012); https://doi.org/10.2172/1055913.

WHITE PAPERS & COMMUNITY REPORTS

1. Tammy Ma (chair) and Riccardo Betti (co-chair) *et al*. (**R. D. McBride** on "Drivers" subpanel), "Basic Research Needs Workshop on Inertial Fusion Energy: Report on the Fusion Energy Sciences Workshop on Inertial Fusion Energy", DOE Office of Science, Fusion Energy Sciences Program (2022); https://events.bizzabo.com/IFEBRN2022/home; https://www.dropbox.com/s/go3doegms6pjgc8/IFE%20BRN_full%20report_v20230111.pdf?dl=0

2. Alex Zylstra (workshop chair), Neil Alexander, Radha Bahukutumbi, **Ryan McBride**, Wayne Meier, Peter Seidl, Matt Wolford, and Lin Yin, "IFE Science & Technology Community Strategic Planning Workshop Report", submitted to DOE Office of Science, Fusion Energy Sciences Program (2022); https://lasers.llnl.gov/nif-workshops/ife-workshop-2022; https://lasers.llnl.gov/content/assets/docs/nif-workshops/ife-workshop-2022/IFE-Workshop-Report.pdf

3. S. Bott-Suzuki, N. Jordan, S. Portillo, M. E. Cuneo, D. B. Sinars, **R. D. McBride**, "Inertial Fusion Energy Technology: Repetitive Driver-Target Coupling in Hostile Fusion Chamber Environments", submitted to the IFE Science & Technology Community Strategic Planning Workshop (2022); https://lasers.llnl.gov/content/assets/docs/nif-workshops/ife-workshop-2021/white-papers/bott-suzuki-UCSD-IFE-workshop-2022.pdf

4. **R. D. McBride**, G. R. Laity, M. L. Kiefer, M. E. Cuneo, and D. B. Sinars, "Pulsed power development needs: driver technology, workforce, and experimentally validated, multi-scale models & algorithms (seamless integration from PIC/kinetic to radiation-XMHD)", submitted to the Plasma 2020 Decadal Study by the National Academies of Science and Engineering (2019); https://app.smartsheet.com/b/publish?EQBCT=40f1147f433f4e858312ba75af14d70f

5. M. E. Cuneo, D. B. Sinars, and **R. D. McBride**, "Inertial Fusion Energy Systems: Repetitive Driver-Target Coupling in Hostile Fusion Chamber Environments", submitted to the DOE Office of Fusion Energy Sciences APS-DPP Community Planning Process (2019); https://drive.google.com/file/d/1s-nQeNJ4cEu780dfLYqmgs-OzlYOvspK/view

6. P.-A. Gourdain, A. Frank, E. Blackman, G. Collins, M. Nakajima, M. Zaghoo, M. Cappelli, S. Glenzer, **R. McBride**, P. Knapp, "Warm Dense Matter: Understanding how quantum and collisional processes impact the macroscopic properties of strongly coupled, degenerate matter", submitted to the Plasma 2020 Decadal Study by the National Academies of Science and Engineering (2019); https://app.smartsheet.com/b/publish?EQBCT=40f1147f433f4e858312ba75af14d70f

7. C. Kuranz, A. Thomas, E. Johnsen, L. Willingale, K. Krushelnick, **R. McBride**, R. P. Drake, "Extreme Astrophysics: High-Energy-Density Laboratory Astrophysics", submitted to the Plasma 2020 Decadal Study by the National Academies of Science and Engineering (2019); https://app.smartsheet.com/b/publish?EQBCT=40f1147f433f4e858312ba75af14d70f

8. **R. D. McBride**, G. R. Laity, M. L. Kiefer, M. E. Cuneo, and D. B. Sinars, "Pulsed power development needs: driver technology, workforce, and experimentally validated, multi-scale models & algorithms (seamless integration from PIC/kinetic to radiation-XMHD)", submitted to the DOE Office of Fusion Energy Sciences APS-DPP Community Planning Process (2019); https://drive.google.com/file/d/1GN8A6g4xiBcbPs_glEm36K7EjbDxnPZB/view

9. M. E. Cuneo, G. R. Laity, A. C. Robinson, T. Gardiner, M. Bettencourt, J. Shadid, E. C. Cyr, G. Hansen, C. Myers, K. Peterson, K. Leung, D. Welch, D. Rose, **R. D. McBride**, D. B. Sinars, "Multi-Scale, Multi-Physics Plasma Hybrid Algorithms, Modeling, and Simulations" submitted to the DOE Office of Fusion Energy Sciences APS-DPP Community Planning Process (2019); https://drive.google.com/file/d/1u0N0z-tguG3KwUTrKBcDeKE-oeG1AlP6/view

10. J. Browning (Lead, Editor, and Host), "Tracking and Engaging the Future: the U.S. Air Force in 2030", submitted to the Air Force Research Laboratories (AFRL) and the Air Force Office of Scientific Research (AFOSR) (2018); https://tinyurl.com/af-2030-workshop-report:
    a. **R. McBride**, U. Shumlak, and J.-S. McEwen, "Rapid Response Space Systems."
    b. J. Cary, **R. McBride**, J.-S. McEwen, and U. Shumlak, "Developing Predictive Models for Plasma-Surface Interactions."
    c. **R. McBride**, S. Kovaleski, and S. Portillo, "Compact Modular Pulsed Power Development for Flexible Application Support."

11. J. L. Kline (chair), J. Bates, D. Callahan, D. Clark, V. Goncharov, I. Igumenschev, C. Jennings, **R. McBride**, R. Olson, C. Sangster, R. Shah, V. Smalyuk, and S. Yi, "Addressing Common Challenges During ICF Implosions" published as part of the workshop report on *Addressing Common Technical challenges in Inertial Confinement Fusion*, Edited by D. Haynes, Los Alamos Technical Report LA-UR-16-27254 (2016); https://doi.org/10.2172/1327991

SELECTED FIRST-AUTHOR CONTRIBUTED TALKS

1. **R. D. McBride**, G. R. Laity, M. L. Kiefer, M. E. Cuneo, and D. B. Sinars, "Pulsed power development needs: driver technology, workforce, and experimentally validated, multi-scale models & algorithms (seamless integration from PIC/kinetic to radiation-XMHD)", at the *Joint Town Hall Meeting for the Plasma 2020 Decadal Assessment by the National Academies of Science and Engineering and the APS-DPP Community Planning Process for the US DOE Office of Fusion Energy Sciences*, (University of Rochester's Laboratory for Laser Energetics, Rochester, NY, May 16, 2019).

2. **R. D. McBride**, P. C. Campbell, S. M. Miller, J. M. Woolstrum, D. A. Yager-Elorriaga, A. M. Steiner, N. M. Jordan, Y. Y. Lau, R. M. Gilgenbach, A. S. Safronova, V. L. Kantsyrev, V. V. Shlyaptseva, I. K. Shrestha, C. J. Butcher, G. R. Laity, J. J. Leckbee, M. L. Wisher, S. A. Slutz, and M. E. Cuneo, "Overview of Pulsed-Power-Driven High-Energy-Density Plasma Research at the University of Michigan", at the *59th Annual Meeting of the American Physical Society Division of Plasma Physics,* (Milwaukee, October 23–27, 2017).

3. **R. D. McBride**, P. C. Campbell, S. M. Miller, J. Woolstrum, D. A. Yager-Elorriaga, A. M. Steiner, A. Rao, F. B. Darby, A. Denniston, C. Wagner, A. S. Safronova, V. L. Kantsyrev, I. K. Shrestha, V. V. Shlyaptseva, M. T. Schmidt-Petersen, C. J. Butcher, S. A. Slutz, M. R. Gomez, M. Jones, J. J. Leckbee, M. L. Wisher, M. L. Kiefer, D. B. Sinars, W. A. Stygar, M. E. Cuneo, N. M. Jordan, Y. Y. Lau, and R. M. Gilgenbach, "Status of Linear Transformer Driver Facilities for High-Density Z-Pinch Experiments at the University of Michigan", at the 10th International Conference on Dense Z-Pinches, (Lake Tahoe, NV, August 13–17, 2017).

4. **R. D. McBride**, P. C. Campbell, S. M. Miller, J. Woolstrum, A. Rao, A. Denniston, F. B. Darby, M. Hua, C. Wagner, M. Bondin, D. Beqi, E. Leppink, A. M. Steiner, D. A. Yager-Elorriaga, J. J. Leckbee, M. L. Wisher, M. L. Kiefer, W. A. Stygar, M. E. Cuneo, N. M. Jordan, Y. Y. Lau, and R. M.

Gilgenbach, "Status of Linear Transformer Driver Facilities for High Energy Density Physics Experiments at the University of Michigan", at the *21st IEEE International Pulsed Power Conference,* (Brighton, UK, June 18–22, 2017).

5. **R. D. McBride**, D. E. Bliss, M. R. Martin, C. A. Jennings, D. C. Lamppa, D. H. Dolan, R. W. Lemke, D. C. Rovang, G. A. Rochau, M. E. Cuneo, D. B. Sinars, T. P. Intrator, and T. E. Weber, "Direct measurement of magnetic flux compression on the Z pulsed-power accelerator", at the *58th Annual Meeting of the American Physical Society Division of Plasma Physics,* (San Jose, October 31–November 4, 2016).

6. **R. D. McBride** and S. A. Slutz, "Semi-analytic modeling and simulation of magnetized liner inertial fusion", at the *9th International Conference on Dense Z-Pinches*, (Napa, August 3–7, 2014).

7. **R. D. McBride**, S. A. Slutz, and S. B. Hansen, "Semi-analytic modeling and simulation of magnetized liner inertial fusion", at the *55th Annual Meeting of the American Physical Society Division of Plasma Physics*, (Denver, November 11–15, 2013).

8. **R. D. McBride**, S. A. Slutz, D. B. Sinars, R. W. Lemke, M. R. Martin, C. A. Jennings, M. E. Cuneo, M. C. Herrmann, and B. E. Blue, "Beryllium liner z-pinches for magneto-Rayleigh-Taylor studies on Z", at the *53rd Annual Meeting of the American Physical Society Division of Plasma Physics*, (Salt Lake City, November 14–18, 2011).

9. **R. D. McBride**, K. S. Bell, I. C. Blesener, D. A. Chalenski, J. D. Douglass, J. B. Greenly, P. F. Knapp, S. A. Pikuz, T. A. Shelkovenko, T. Blanchard, H. Wilhelm, D. A. Hammer, B. R. Kusse, "Implosion dynamics of wire-array z-pinches on the COBRA accelerator", at the *49th Annual Meeting of the American Physical Society Division of Plasma Physics*, (Orlando, November 12–16, 2007).

SELECTED FIRST-AUTHOR POSTER PRESENTATIONS

1. **R. D. McBride**, S. A. Slutz, D. B. Sinars, R. A. Vesey, M. R. Gomez, A. B. Sefkow, S. B. Hansen, K. R. Cochrane, P. F. Schmit, P. F. Knapp, M. Geissel, A. J. Harvey-Thompson, C. A. Jennings, M. R. Martin, T. J. Awe, D. C. Rovang, D. C. Lamppa, K. J. Peterson, G. A. Rochau, J. L. Porter, W. A. Stygar, and M. E. Cuneo, "Exploring magnetized liner inertial fusion with a semi-analytic model", at the *57th Annual Meeting of the American Physical Society Division of Plasma Physics,* (Savannah, November 16–20, 2015).

2. **R. D. McBride**, M. R. Gomez, S. B. Hansen, C. A. Jennings, D. E. Bliss, P. F. Knapp, P. F. Schmit, T. J. Awe, M. R. Martin, D. B. Sinars, J. B. Greenly, T. P. Intrator, T. E. Weber, "Magnetic flux compression experiments on the Z pulsed-power accelerator", at the *56th Annual Meeting of the American Physical Society Division of Plasma Physics,* (New Orleans, October 27–31, 2014).

3. **R. D. McBride**, D. C. Lamppa, D. C. Rovang, T. J. Awe, J. B. Greenly, M. R. Martin, C. A. Jennings, M. R. Gomez, S. B. Hansen, M. H. Hess, T. P. Intrator, A. C. Owen, S. A. Slutz, C. W. Nakhleh, D. B. Sinars, M. E. Cuneo, and M. C. Herrmann, "Implementing and Diagnosing Magnetic Flux Compression on Z", at the *NNSA Laboratory Directed Research and Development Symposium*, (Washington D. C., June 12, 2013).

4. **R. D. McBride**, S. A. Slutz, R. W. Lemke, M. R. Martin, C. A. Jennings, T. J. Awe, D. C. Rovang, D. C. Lamppa, J.-P. Davis, D. B. Sinars, M. E. Cuneo, C. W. Nakhleh, D. G. Flicker, and M. C. Herrmann, "Beryllium Liner Implosion Experiments on Z for MagLIF and DMP", at the *External Review for Sandia National Laboratories' Programs in Radiation Effects and High Energy Density Sciences*, (Albuquerque, May 13–16, 2013).

5. **R. D. McBride**, S. A. Slutz, C. A. Jennings, D. B. Sinars, D. C. Rovang, M. E. Cuneo, M. C. Herrmann, R. W. Lemke, M. R. Martin, R. A. Vesey, K. J. Peterson, A. B. Sefkow, C. Nakhleh, "Experiments in Preparation for MagLIF", at the *External Review for Sandia National Laboratories' Programs in Radiation Effects and High Energy Density Sciences*, (Albuquerque, May 14–17, 2012).

6. **R. D. McBride**, S. A. Slutz, D. B. Sinars, R. W. Lemke, M. R. Martin, R. A. Vesey, M. E. Cuneo, M. C. Herrmann, "Beryllium Liner Z-Pinches for Magneto-Rayleigh-Taylor Studies on Z", at the *52nd Annual Meeting of the American Physical Society Division of Plasma Physics,* (Chicago, November 8–12, 2010).

7. **R. D. McBride**, M. E. Cuneo, C. Jennings, E. M. Waisman, and A. S. Chuvatin, "Load Current Multiplier for the Z Accelerator", at the *6th International Conference on Inertial Fusion Sciences and Applications*, (San Francisco, September 6–11, 2009).

8. **R. D. McBride**, M. E. Cuneo, D. A. Hammer, S. A. Pikuz, T. A. Shelkovenko, J. B. Greenly, B. R. Kusse, J. T. Blanchard, H. Wilhelm, J. D. Douglass, P. F. Knapp, K. S. Bell, I. C. Blesener, D. A. Chalenski, W. Syed, Y. Maron, and R. Doron, "Streaked Visible-Light Spectroscopy Measurements of Aluminum Wire-Array Z-Pinches on COBRA", at the *36th IEEE International Conference on Plasma Science*, (San Diego, May 31 – June 5, 2009).

9. **R. D. McBride**, T. A. Shelkovenko, S. A. Pikuz, D. A. Hammer, J. B. Greenly, B. R. Kusse, J. D. Douglass, P. F. Knapp, K. S. Bell, I. C. Blesener, D. A. Chalenski, "Implosion dynamics and radiation output of wire-array z-pinches on the COBRA pulsed-power generator", at the *35th IEEE International Conference on Plasma Science*, (Karlsruhe, June 15–19, 2008).

10. **R. D. McBride**, T. A. Shelkovenko, S. A. Pikuz, D. A. Hammer, J. B. Greenly, B. R. Kusse, J. D. Douglass, P. F. Knapp, K. S. Bell, I. C. Blesener, D. A. Chalenski, "Experimental studies of wire-array z-pinches on the COBRA accelerator", at the *7th International Conference on Dense Z-Pinches*, (Alexandria, August 18–21, 2008).

11. **R. D. McBride**, T. A. Shelkovenko, S. A. Pikuz, D. A. Hammer, J. B. Greenly, B. R. Kusse, J. D. Douglass, P. F. Knapp, K. S. Bell, I. C. Blesener, D. A. Chalenski, "High-energy-density pinch columns and radiation production on the reconfigured Cornell Beam Research Accelerator (COBRA)", at the *2008 Stewardship Science Academic Alliance Program Symposium,* (Washington, D.C., February 26–28, 2008).

12. **R. D. McBride**, K. S. Bell, I. C. Blesener, D. A. Chalenski, J. D. Douglass, J. B. Greenly, P. F. Knapp, S. A. Pikuz, T. A. Shelkovenko, Y. T. Zhao, T. Blanchard, A. R. Mingaleev, H. Wilhelm, D. A. Hammer, B. R. Kusse, S. N. Bland, "Optical streak camera-based studies of wire-array z-pinch implosion dynamics on the 1-MA COBRA pulsed power generator", at the *34th IEEE International Conference on Plasma Science,* (Albuquerque, June 17–22, 2007).

13. **R. D. McBride**, S. A. Pikuz, I. C. Blesener, Y. T. Zhao, J. B. Greenly, D. A. Hammer, B. R. Kusse, "Optical streak camera images of wire-array z-pinches on the 1-MA COBRA pulsed power generator", at the *48th Annual Meeting of the American Physical Society Division of Plasma Physics,* (Philadelphia, October 30–November 3, 2006).

14. **R. D. McBride**, D. A. Chalenski, L. M. Maxson, S. A. Pikuz, T. A. Shelkovenko, J. D. Douglass, J. B. Greenly, D. A. Hammer, B. R. Kusse, "Laser-based imaging of wire array z-pinches and x-pinches on the COBRA pulsed power generator", at the *47th Annual Meeting of the American Physical Society Division of Plasma Physics,* (Denver, October 24–28, 2005).

15. **R. D. McBride**, J. D. Douglass, S. A. Pikuz, T. A. Shelkovenko, J. B. Greenly, D. A. Hammer, B. R. Kusse, "Experimental studies of multi-wire arrays on the COBRA generator", at the *32nd IEEE International Conference on Plasma Science,* (Monterey, June 20–23, 2005).

NOTABLE COURSEWORK (& TEXTS USED)

Graduate Level:

- Classical Electrodynamics (J. D. Jackson)
- Quantum Mechanics I (R. Shankar)
- Quantum Mechanics II (C. Cohen-Tannoudji)
- Statistical Mechanics (D. A. McQuarrie)
- Classical & Statistical Thermodynamics (W. Greiner)

- Introduction to Plasma Physics (F. F. Chen)
- Advanced Plasma Physics (T. J. M. Boyd & J. J. Sanderson)
- Cosmic Plasma Physics (B. V. Somov)
- Plasma Spectroscopy (H. R. Griem)
- Upper Atmospheric & Space Plasma Physics I (M. C. Kelley)
- Upper Atmospheric & Space Plasma Physics II (M. G. Kivelson & C. T. Russell *et al.*)
- Intermediate Dynamics / Classical Mechanics (H. Goldstein)
- Nonlinear Dynamics & Chaos (S. Strogatz)
- Computational Physics (W. H. Press *et al*.)
- Mathematical Methods (D. A. McQuarrie)
- Theory of Linear Systems (course notes only)
- Applied Systems Engineering I & II (D. W. Oliver *et al*.)
- Project Management (course notes only)
- Electronic Commerce (course notes only)
- Entrepreneurship (course notes only)
- Energy Seminar I & II (visiting speakers, no text)

Undergraduate Level:

- Introduction to Controlled Fusion (A. A. Harms *et al*.)
- Electromagnetic Waves (S. Ramo *et al*.)
- Electromagnetics (D. K. Cheng)
- Radio Frequency Circuits & Systems (J. B. Hagen)
- Introduction to Radar & Remote Sensing (B. R. Mahafza)
- Electromechanical Machinery (S. J. Chapman)
- Electrical Circuits (J. W. Nilsson & S. A. Riedel)
- Feedback Control Systems I & II (C. L. Phillips & R. D. Harbor)
- Object Oriented Programing, Software Engineering, and Problem Solving in C++ (F. M. Carrano *et al*.)
- Digital Systems (V. P. Nelson *et al*.)
- Signals & Systems (J. W. Nilsson & S. A. Riedel)
- Signal Processing (course notes only)
- Electronics I & II (M. N. Horenstein)
- Semiconductor Devices (B. G. Streetman)
- Science & Engineering of Materials (D. R. Askeland)
- Fundamentals of Biomedical Engineering (A. E. Profio)