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Personal

Citizenship: Canadian
Gender: Male
Languages: French, English

Education

Ph.D. (Physics)	The University of British Columbia, Vancouver, Canada, 2006-2010 Thesis Advisor: Jens Dilling
M.Sc. (Physics)	The University of British Columbia, Vancouver, Canada, 2004-2006
B.Sc. (Physics)	L'Université de Montréal, Montréal, Canada, 2000-2003

Appointments

Associate Professor	The University of Notre Dame, Notre Dame, USA, 2019-
Assistant Professor	The University of Notre Dame, Notre Dame, USA, 2013-2019
Research Associate	NSCL at Michigan State University, East Lansing, USA, 2010-2013
Teaching Assistant	The University of British Columbia, Vancouver, Canada, 2004-2010

Awards

Named the Notre Dame Ortenzio Family Assistant Professor, 2015
TRIUMF Carl Westcott Fellowship, 2008
The University of British Columbia Graduate Fellowship, 2008

Grants

1. ***PHY-2310059, Nuclear Physics at the Notre Dame Nuclear Science Laboratory Providing a Window on the Universe***, Co-Principal Investigator, \$12M, funded by the National Science Foundation (2023-)
2. ***PHY-2011890, Nuclear Physics at the Notre Dame Nuclear Science Laboratory Providing a Window on the Universe***, Co-Principal Investigator, \$8100k, funded by the National Science Foundation (2020-2023)
3. ***PHY-1725711, MRI: Development of a Unique Ion Trapping System to Test the Standard***

Model of Physics at the Nuclear Science Laboratory, Principal Investigator, \$530k, funded by the National Science Foundation (2017-2023)

4. **PHY-1713857, Nuclear Structure and Nuclear Astrophysics - Renewal**, Co-Principal Investigator, \$6500k, funded by the National Science Foundation (2017-2020)
5. **USNRC HQ-60-17-G-0023, Sustaining Excellence in Nuclear Science at the University of Notre Dame**, \$450k, funded by the U.S. National Regulatory Commission (2017-2020)
6. **PHY-1419765, Nuclear Structure and Nuclear Astrophysics - Renewal**, Co-Principal Investigator, \$6500k, funded by the National Science Foundation (2014-2017)

Membership

American Physical Society; Division of Nuclear Physics and Few-Body Systems Topical Group

Experimental proposals (* indicate a current grad student at the time)

1. A. Houff* et al., *Mass measurements towards uncovering the rare-earth peak formation*, ANL ATLAS PAC exp 2144, June 2024, accepted Priority 2 (13 days).
2. W.S. Porter* et al., *Exploring the production of proton-rich nuclei at the $N = 126$ Factory*, ANL ATLAS PAC exp 2142, June 2024, accepted Priority 1 (8 days).
3. W.S. Porter* et al., *First Quest for Ultra-low Q -values with Multi-nucleon Transfer Reactions on a ^{154}Sm Target*, ANL ATLAS PAC exp 2036, May 2023, accepted Priority 1 (5 days).
4. W.S. Porter*, D. Burdette, **M. Brodeur**, and A.A. Kwiatkowski, *High-precision Q_{EC} -measurements of the superallowed mixed decays of ^{13}N , ^{15}O , and ^{17}F* , TRIUMF EEC, January 2023, S2285, approved with high priority (11 shifts).
5. B. Liu* et al., *First Precise Mass Measurements around the $N=126$ closed shell at the $N=126$ Factory*, ANL ATLAS PAC exp 1993, May 2022, accepted Priority 1 (18 days).
6. **M. Brodeur** and A.A. Kwiatkowski, *Precise mass measurements of neutron-rich silver isotopes for the r -process*, TRIUMF EEC, December 2018, LOI S1894, completed (5 shifts awarded).
7. **M. Brodeur**, A.A. Kwiatkowski and J. Dilling, *Precise mass measurements of Sr and Rb isotopes in the vicinity of the r -process path*, TRIUMF EEC, July 2017, Exp. S1373, completed (72 h).
8. **M. Brodeur**, A. Kankainen, and J. Kelly*, *Mass measurements for the astrophysical rapid neutron capture process*, JYFL PAC, March 2017, Exp. I226, completed (284h).
9. **M. Brodeur**, *Searching for Standard Model-violating scalar currents through*

β - ν angular correlation measurements in ^{14}O , ANL ATLAS PAC, October 2016, accepted Priority 2 (5 days).

10. **M. Brodeur**, *High precision mass measurements of ^{52}Co and ^{56}Cu for the astrophysical rp-process*, NSCL PAC40 #16037, completed (119 h). (2016)
11. **M. Brodeur**, T. Brunner, and J. Dilling, *Detailed studies of halo nuclei close to the neutron drip-line*, TRIUMF letter of intent #S1621-LOI, accepted with first priority. (2016)
12. **M. Brodeur**, and A. Kankainen, *Mass measurements for the astrophysical rapid neutron capture process*, JYFL PAC, Fall 2014, Exp. I204, completed. (2014)
13. **M. Brodeur**, *High precision mass measurements for the astrophysical rp-process*, NSCL PAC38 #14016, completed (71 h). (2014)
14. **M. Brodeur**, D. Lunney, and J. Dilling, *Investigating the apparent disappearance of the $N = 28$ shell closure*, TRIUMF exp #S1290, re-accepted with medium priority. (2014)
15. **M. Brodeur**, S. Ettenauer and A. Gallant, *High precision mass measurements of neutron-deficient calcium*, TRIUMF letter of intent #S1460-LOI, accepted priority 2.
16. **M. Brodeur**, B.A. Brown and J. Dilling, *Testing the IMME through the high-precision mass measurements of $^{20,21}\text{Mg}$* , TRIUMF exp #S1374, completed.

Organizer

1. M. Brodeur, D. Bardayan, and G. Peaslee, *Exotic Beam Summer School (EBSS) 2022*, co-organizer for the school, University of Notre Dame, IN, June 2022
2. M. Brodeur and T. Brunner, *International Conference on Stopping and Manipulation of Ions and related topics (SMI-2019)*, co-organizer for the conference, McGill University, QC, Canada, 2019
3. M. Brodeur, K. Minamisono, and R. Ringle, *Precision Measurements working group*, co-organizer for the 1.5 hour breakout session at the 2018 Low-Energy Community Meeting, Michigan State University, MI, USA, 2018
4. M. Brodeur, K. Minamisono, and R. Ringle, *Precision Measurements working group*, co-organizer for the 1.5 hour breakout session at the 2017 Low-Energy Community Meeting, Argonne National Laboratory, IL, USA, 2017
5. M. Brodeur, M. Wiescher, *ARUNA workshop*, co-organizer for the 2 hour workshop preceeding at the 2016 Low-Energy Community Meeting, Notre Dame, IN, USA, 2016
6. M. Brodeur, K. Minamisono, and R. Ringle, *Precision Measurements working group*, co-organizer for the 1.5 hour breakout session at the 2016 Low-Energy Community Meeting, Notre Dame, IN, USA, 2016

7. M. Brodeur and A. Aprahamian, ***2016 Low-Energy Community Meeting***, local organizer for the meeting, Notre Dame, IN, USA, 2016
8. M. Brodeur and M. Couder, ***2015 Annual Fall Meeting of the APS Prairie Section***, co-organizer for the conference, Notre Dame, IN, USA, 2015
9. M. Brodeur and M. Redshaw, ***Masses in traps***, Discussion leader at the Gordon Research Conference in Nuclear Chemistry, New London, NH, USA, 2015
10. M. Brodeur and P. Schury, ***Developments in confinement techniques for precision low-energy nuclear physics experiments with radioactive ion beam***, co-organizer, 1/2 day workshop at the DNP-JPS Joint Meeting, Hilton Waikoloa Village, Big Island, USA, 2014

External committee

1. ATLAS (at Argonne National Laboratory) Users Executive Committee (2025-)
2. Natural Science and Engineering Research Council of Canada (NSERC) Subatomic Physics Section evaluator (2023-)
3. Exotic Beam Summer School (EBSS) (2019-)
4. Low-Energy Community Meeting organizing committee (2016-2021)
5. TRIUMF Users' Executive Committee (2020-2021)
6. Reviewed grant of the European Research Commission (2025)
7. Part of a review panel with the Department of Energy (2019)
8. Reviewer for multiple grant proposals in nuclear physics submitted to the National Science Foundation.
9. Expert reviewer for a research grant proposal submitted to the French funding agency "Agence Nationale de la Recherche" (2015)
10. Part of the review panel for the "Etablissement de nouveaux chercheur universitaires" research grants. These are research grants for new faculty members given by Quebec's research fund in science and technology (FRQNT) (2015)

Reviewer

Peer-reviewed manuscripts submitted to Nature, Science, Physical Review Letters, Physical Review C, AIP Advances, Nuclear Physics A, European Physical Journal A, Nuclear Instrumentation and Methods A&B, and Review of Scientific Instruments, Science.

Departmental committee

1. Graduate curriculum committee (2016-2017)
2. Graduate recruitment committee (2014-2016, 2021-). Chair in 2024-2025
3. Colloquium committee (2013-2024). Chair in 2022-2023
4. Demonstrations and Instructional laboratories committee (2013-2014, 2023-)

University committee

1. Spokesperson for the research part of the ND/SPECTRON cyclotron project (2013-2015)

Courses taught

1. PHYS20210: Physics for the Life Science I (Spring 2025)
2. PHYS24210: Physics for the Life Science I – London (Fall 2024)
3. PHYS11310 & PHYS11310: General Physics I & II Labs (Fall 2020-Spring 2022, Fall 2023)
4. PHYS10310: General Physics I (Spring 2020, Fall 2022, Spring 2024)
5. PHYS20451: Math. Methods I (Fall 2017, 2018 & 2019)
6. PHYS10320: General Physics II (Fall 2014, 2015 & 2016)
7. PHYS50701: Introduction to Nuclear Physics (Spring 2014, 2015, 2016 & 2018)
8. PHYS21435: General Phys C, E&M Laboratory (Fall 2013)

Mentoring

Undergraduate students:

1. Eric Ribeiro, Spring 2025-
2. Anandini Mitra, Spring 2025-
3. Magdalena Regenauer, Spring 2025-
4. Vismay Attupuram, Spring 2025-
5. James Burke, Spring 2025-
6. Gianna Macedan, Spring 2025-
7. Felix Ruda, Spring 2025-
8. Daniel Schroeder, REU Summer 2024
9. Miller Christian, REU Summer 2023
10. Jiaju Li, REU Summer 2023
11. Caleb Quick, Spring 2022-Spring 2025
12. Roy Bualuan, Fall 2021-Spring 2024
13. Dorothy Gan, Fall 2021-Spring 2024
14. Alec Cannon, Fall 2021& Summer 2022
15. Jamie Harkins, Summer 2021-Spring 2022
16. Ella Crowley, Fall 2020-Spring 2021
17. Carrie Davis, Fall 2020-Spring 2022
18. Timothy Florenzo, Spring 2020-Spring 2022
19. Jason Prochaska, REU Summer 2019

20. Cristobal Gonzales, Fall 2018-Spring 2019
21. Quinn Campagna, REU Summer 2018
22. Teajun Kim, Fall 2017-Spring 2020
23. David Lund, Fall 2017
24. John Maier, Fall 2017-Spring 2018
25. Jeffrey Klimes, Fall 2017-Spring 2018
26. Biying Liu, REU Summer 2017
27. Keenan Lambert, REU Summer 2017
28. Jinyi Wang, REU Summer 2016
29. Shane Ryan, Summer - Fall 2015
30. Alec Hamaker, REU Summer 2015
31. Guillermo Bustos Ramirez, REU Summer 2014
32. Catherine Nicoloff, REU Summer 2014 – Fall 2015, Fall 2021-Spring 2022

Graduate students:

1. Olivia Grace, 2023-
2. Driss Guillet (visiting from ENS Paris Saclay), 2023
3. Alicen Houff, 2022-
4. Regan Zite, 2021-
5. William Sam Porter, 2021-
6. Fabio Rivero, 2021-
7. Marc Abe Yeck, MSc, graduated Fall 2021
8. Andres Pardo Perdomo (visiting from Londrina State University), 2019
9. Biying Liu, PhD, graduated Spring 2025
10. Adrian Valverde, PhD, graduated Fall 2018
11. Daniel Burdette, PhD, graduated Fall 2021
12. Jacob Long, PhD, graduated Spring 2020
13. James Kelly, PhD, graduated Spring 2019

Post-doctoral fellows and research faculty:

1. Patrick O'Malley, 2018-
2. Brad Schultz, 2014-2016

Publications (h-index: 25)

Published, review article

1. J. Dilling, K. Blaum, **M. Brodeur**, and S. Eliseev, *Penning-Trap Mass Measurements in Atomic and Nuclear Physics*, Ann. Rev. of Part. and Nucl. Science **68**, 45 (2018).

Published, peer reviewed

1. B. Liu, **M. Brodeur**, J.A. Clark, I. Dedes, J. Dudek, F.G. Kondev, D. Ray, G. Savard, A.A. Valverde, A. Baran, D.P. Burdette, A.M. Houff, R. Orford, W.S. Porter, F. Rivero, K.S.

- Sharma, L. Varriano, *Precise mass measurement of the longest odd-odd chain of nuclei with 1^+ ground states*, Phys. Rev. C. **111**, 034308 (2025).
2. K. Palli, A. Pakou, A.M. Moro, P.D. O'Malley, L. Acosta, A.M. Sanchez-Benitez, G. Souliotis, E.F. Aguilera, E. Andrade, D. Godos, O. Sgouros, V. Soukeras, C. Agodi, T.L. Bailey, D.W. Bardayan, C. Boomersshine, **M. Brodeur**, F. Cappuzzello, S. Carmichael, M. Cavallaro, S. Dede, J.A. Duenas, J. Henning, K. Lee, W.S. Porter, F. Rivero, W.W. von Seeger, *Breakup of the proton halo nucleus ^8B at a sub-Coulomb energy*, Phys. Rev. C **111**, 049902 (2025).
 3. E. M. Lykiardopoulou, C. Walls, J. Bergmann, **M. Brodeur**, C. Brown, J. Cardona, A. Czihaly, T. Dickel, T. Duguet, J.-P. Ebran, M. Frosini, Z. Hockenbery, J.D. Holt, A. Jacobs, S. Kakkar, B. Kootte, T. Miyagi, A. Mollaebrahimi, T. Murboeck, P. Navratil, T. Otsuka, W.R. Plass, S. Paul, W.S. Porter, M.P. Reiter, A. Scalesi, C. Scheidenberger, V. Soma, N. Shimizu, Y. Wang, D. Lunney, J. Dilling, A.A. Kwiatkowski, *Refined Topology of the $N=20$ Island of Inversion with High Precision Mass Measurements of $^{31-33}\text{Na}$ and $^{31-35}\text{Mg}$* , Phys. Rev. Lett. **134**, 052503 (2025).
 4. G.P.A. Berg, D. Melconian, M. Couder, **M. Brodeur**, V.E. Iacob, J. Klimo, and P.D. Shidling, *LSTAR — An isobar separator for expanding radioactive ion beam production at the Cyclotron Institute, Texas A&M University*, Nucl. Inst. Meth. A **1069**, 169944 (2024).
 5. A.A. Valverde, F.G. Kondev, B. Liu, D. Ray, **M. Brodeur**, D.P. Burdette, N. Callahan, A. Cannon, J.A. Clark, D.E.M. Hoff, R. Orford, W.S. Porter, G. Savard, K.S. Sharma, and L. Varriano, *Precise mass measurements of $A=133$ isobars with the Canadian Penning Trap: Resolving the Q_{β^-} anomaly at ^{133}Te* , Phys. Lett. B **858**, 139037 (2024).
 6. W.S. Porter, B. Liu, D. Ray, A.A. Valverde, M. Li, M.R. Mumpower, **M. Brodeur**, D.P. Burdette, N. Callahan, A. Cannon, J.A. Clark, D.E.M. Hoff, A.M. Houff, F.G. Kondev, A.E. Lovell, A.T. Mohan, G.E. Morgan, C. Quick, G. Savard, K.S. Sharma, T.M. Sprouse, and L. Varriano, *Investigating the effects of precise mass measurements of Ru and Pd isotopes on machine learning mass modeling*, Phys. Rev. C **110**, 034321 (2024).
 7. K. Palli, A. Pakou, P.D. O'Malley, L. Acosta, A.M. Sanchez-Benitez, G. Souliotis, A.M. Moro, E.F. Aguilera, E. Andrade, D. Godos, O. Sgouros, V. Soukeras, C. Agodi, T.L. Bailey, D.W. Bardayan, C. Boomersshine, **M. Brodeur**, F. Cappuzzello, S. Carmichael, M. Cavallaro, S. Dede, J.A. Duenas, J. Henning, K. Lee, W.S. Porter, F. Rivero, W. von Seeger, *Elastic scattering of $^8\text{B}+^{nat}\text{Zr}$ at the sub-barrier energy of 26.5 MeV*, Phys. Rev. C **109**, 064614 (2024).
 8. B. Longfellow, A.T. Gallant, G.H. Sargsyan, M.T. Burkey, T.Y. Hirsh, G. Savard, N.D. Scielzo, L. Varriano, **M. Brodeur**, D.P. Burdette, J.A. Clark, D. Lascar, K.D. Launey, P. Mueller, D. Ray, K.S. Sharma, A.A. Valverde, G.L. Wilson, and X.L. Yan, *Improved Tensor Current Limit from ^8B β -Decay Including New Recoil-Order Calculations*, Phys. Rev. Lett. **132**, 142502 (2024).

9. S. Zhamkochyan, V. Kakoyan, S. Abrahamyan, H. Elbakyan, G. Ayvazyan, R. Ayvazyan, A. Ghalumyan, A. Kakoyan, S. Mayilyan, A. Papyan, R. Piloyan, H. Rostomyan, A. Safaryan, G. Sughyan, H. Vardanyan, H. Zohrabyan, J. Annand, K. Livingston, R. Montgomery, P. Achenbach, J. Pochodzalla, D.L. Balabanski, S.N. Nakamura, A. Aprahamian, **M. Brodeur**, V. Sharyy, D. Yvon, A. Margaryan, *Advanced picosecond precision Radio Frequency Timer*, J. of Instrum. **19**, C02014 (2024).
10. **M. Brodeur**, D.W. Bardayan, O. Bruce, R. Bualuan, D.P. Burdette, J.A. Clark, A.T. Gallant, D. Gan, D. Guillet, A.M. Houff, J.J. Kolata, B. Liu, P.D. O'Malley, W.S. Porter, C. Quick, F. Rivero, G. Savard, W.W. von Seeger, A.A. Valverde, and R. Zite, *On-line installation of the Superallowed Transition Beta-Neutrino Decay Ion Coincidence Trap*, EPJ Web Conf. **301**, 02002 (2024).
11. L. Varriano, G. Savard, J.A. Clark, D.P. Burdette, M.T. Burkey, A.T. Gallant, T.Y. Hirsh, B. Longfellow, N.D. Scielzo, R. Segel, E.J. Boron, **M. Brodeur**, N. Callahan, A. Cannon, K. Kolos, B. Liu, S. Lopez-Caceres, M. Gott, B. Maaß, S.T. Marley, C. Mohs, G.E. Morgan, P. Mueller, M. Oberling, P.D. O'Malley, W.S. Porter, Z. Purcell, D. Ray, F. Rivero, A.A. Valverde, G.L. Wilson, and R. Zite, *The Beta-decay Paul Trap Mk IV: Design and commissioning*, Nucl. Inst. Meth. A **1058**, 168818 (2024).
12. D.E.M. Hoff, K. Kolos, G.W. Misch, D. Ray, B. Liu, A.A. Valverde, **M. Brodeur**, D.P. Burdette, N. Callahan, J.A. Clark, A.T. Gallant, F.G. Kondev, G.E. Morgan, M.R. Mumpower, R. Orford, W.S. Porter, F. Rivero, G. Savard, N.D. Scielzo, K.S. Sharma, K. Sieja, T.M. Sprouse, and L. Varriano, *Direct Mass Measurements to Inform the Behavior of ^{128}Sb in Nucleosynthetic Environments*, Phys. Rev. Lett. **131**, 262701 (2023).
13. W.S. Porter, D.W. Bardayan, **M. Brodeur**, D.P. Burdette, J.A. Clark, A.T. Gallant, A.M. Houff, J.J. Kolata, B. Liu, P.D. O'Malley, C. Quick, F. Rivero, G. Savard, A.A. Valverde, and R. Zite, *The St. Benedict Facility: Probing Fundamental Symmetries through Mixed Mirror β -Decays*, Atoms **11**, 129 (2023).
14. K. Palli, A. Pakou, A. M. Moro, P. D. O'Malley, L. Acosta , A. M. Sánchez-Benítez, G. Souliotis, E. F. Aguilera, E. Andrade, D. Godos, O. Sgouros, V. Soukeras, C. Agodi, T. L. Bailey, D. W. Bardayan, C. Boomersshine, **M. Brodeur**, F. Cappuzzello, S. Carmichael, M. Cavallaro, S. Dede, J. A. Dueñas, J. Henning, K. Lee, W. S. Porter, F. Rivero, and W. von Seeger, *Quasielastic scattering of $^7\text{Be} + ^{\text{nat}}\text{Zr}$ at sub- and near-barrier energies*, Phys. Rev. C **107**, 064613 (2023).
15. T. Ahn, D.W. Bardayan, D. Blankstein, C. Boomersshine, **M. Brodeur**, S. Carmichael, S. Coil, J.J. Kolata, P.D. O'Malley, W. Porter, J.S. Randhawa, F. Rivero, J. Rufino, W. von Seeger, R. Zite, *Nuclear physics with TriSol at Notre Dame's Nuclear Science Laboratory*, Nucl. Inst. Meth. B **541**, 216 (2023).
16. **M. Brodeur**, T. Ahn, D.W. Bardayan, D.P. Burdette, J.A. Clark, A.T. Gallant, J.J. Kolata, B. Liu, P.D. O'Malley, W.S. Porter, R. Ringle, F. Rivero, G. Savard, A.A. Valverde, and R. Zite, *Construction of St. Benedict*, Nucl. Inst. Meth. B **541**, 79 (2023).

17. A.T. Gallant, N.D. Scielzo, G. Savard, J.A. Clark, **M. Brodeur**, F. Buchinger, D.P. Burdette, M.T. Burkey, S. Caldwell, J.E. Crawford, A. Czeszumska, C.M. Deibel, J. Greene, D. Heslop, T.Y. Hirsh, A.F. Levand, B. Longfellow, G.E. Morgan, P. Mueller, R. Orford, S. Padgett, N. Paul, A. Perez Galvan, A. Reimer, R. Segel, K.S. Sharma, K. Siegl, L. Varriano, B.J. Zabransky, *Angular Correlations in the β Decay of ^8B : First Tensor-Current Limits from a Mirror-Nucleus Pair*, Phys. Rev. Lett. **130**, 192502 (2023).
18. B. Longfellow, A. T. Gallant, T. Y. Hirsh, M. T. Burkey, G. Savard, N. D. Scielzo, L. Varriano, **M. Brodeur**, D. P. Burdette, J. A. Clark, D. Lascar, P. Mueller, D. Ray, K. S. Sharma, A. A. Valverde, G. L. Wilson, and X. L. Yan, *Determination of the ^8B neutrino energy spectrum using trapped ions*, Phys. Rev. C **107**, L032801 (2023).
19. J. Long, C.R. Nicoloff, D.W. Bardayan, F.D. Becchetti, D. Blankstein, C. Boomershine, D.P. Burdette, M.A. Caprio, L. Caves, P.J. Fasano, B. Frentz, S.L. Henderson, J.M. Kelly, J.J. Kolata, B. Liu, P.D. O'Malley, S.Y. Strauss, R. Zite, and **M. Brodeur**, *Precision half-life determination for the β^+ emitter ^{13}N* , Phys. Rev. C **106**, 045501 (2022).
20. C. Davis, R. Bualuan, O. Bruce, D.P. Burdette, A. Cannon, T. Florenzo, D. Gan, J. Harkin, B. Liu, J. Long, P.D. O'Malley, F. Rivero, M.A. Yeck, R. Zite, **M. Brodeur**, *Commissioning of the St. Benedict RF carpet*, Nucl. Inst. Meth. A **1042**, 167422 (2022).
21. M. T. Burkey, G. Savard, A.T. Gallant, N.D. Scielzo, J.A. Clark, T.Y. Hirsh, L. Varriano, G.H. Sargsyan, K.D. Launey, **M. Brodeur**, D.P. Burdette, E. Heckmaier, K. Joerres, J.W. Klimes, K. Kolos, A. Laminack, K.G. Leach, A.F. Levand, B. Longfellow, B. Maass, S.T. Marley, G.E. Morgan, P. Mueller, R. Orford, S.W. Padgett, A. Perez Galvan, J.R. Pierce, J. D. Ray, R. Segel, K. Siegl, K.S. Sharma, B.S. Wang, *Improved Limit on Tensor Currents in the Weak Interaction from ^8Li β Decay*, Phys. Rev. Lett. **128**, 202502 (2022).
22. C. Davis, O. Bruce, D.P. Burdette, T. Florenzo, B. Liu, J. Long, P.D. O'Malley, M.A. Yeck, **M. Brodeur**, *Transport tests of the St. Benedict first-stage extraction system*, Nucl. Inst. Meth. A **1031**, 166509 (2022).
23. I. Mukul, C. Andreoiu, J. Bergmann, **M. Brodeur**, T. Brunner, K. A. Dietrich, T. Dickel, I. Dillmann, E. Dunling, D. Fusco, G. Gwinner, C. Izzo, A. Jacobs, B. Kootte, Y. Lan, E. Leistenschneider, E. M. Lykiardopoulou, S. F. Paul, M. P. Reiter, J. L. Tracy, Jr., J. Dilling, and A. A. Kwiatkowski, *Examining the nuclear mass surface of Rb and Sr isotopes in the A~104 region via precision mass measurements*, Phys. Rev. C **103**, 044320 (2021).
24. J. Surbrook, G. Bollen, M. Brodeur, A. Hamaker, D. Perez-Loureiro, D. Puentes, C. Nicoloff, M. Redshaw, R. Ringle, S. Schwarz, C.S. Sumithrarachchi, L.J. Sun, A.A. Valverde, A.C.C. Villari, C. Wrede, and I.T. Yandow, *First Penning trap mass measurement of ^{36}Ca* , Phys. Rev. C **103**, 014323 (2021).

25. B. Liu, M. Brodeur, D.P. Burdette, J.M. Kelly, T. Kim, J. Long, and P.D. O'Malley, *The performance of the commissioned Notre Dame multi-reflection time-of-flight mass spectrometer*, Nucl. Inst. Meth. A **985**, 164679 (2021).
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Invited talks

- M. Brodeur, *Testing the Standard Model with the help of St. Benedict at Notre Dame*, Nuclear Seminar, IJC Lab, France, December 2024
- M. Brodeur, *Testing the Standard Model with the help of St. Benedict at Notre Dame*, Physics Colloquium, University of Groningen, Netherlands, November 2024
- M. Brodeur, *Testing the Standard Model with the help of St. Benedict at Notre Dame*, Nuclear Seminar, GANIL, France, November 2024
- M. Brodeur, *Mass measurements for the r-process at the N=126 Factory*, Nuclear Seminar, University of Manchester, UK, November 2024
- M. Brodeur, *Testing the Standard Model with the help of St. Benedict at Notre Dame*, Nuclear Seminar, Max Planck Institute of Nuclear Physics, Germany, October 2024

- M. Brodeur, *Testing the Standard Model with the help of St. Benedict at Notre Dame*, NUSTAR Seminar, GSI, Germany, October 2024
- M. Brodeur, *Testing the Standard Model with nuclear beta decays*, Nuclear Seminar, University of York, UK, October 2024
- M. Brodeur, *Testing the Standard Model with the help of St. Benedict at Notre Dame*, Nuclear Seminar, University of Bordeaux, France, September 2024
- M. Brodeur, *Mass measurements for the r-process at the N=126 Factory*, Nuclear Seminar, University of Edinburgh, UK, September 2024
- M. Brodeur, *Trapping radioactive ions to measure their decay*, Quarknet Mentor Talk at the University of Notre Dame, USA, July 2024
- M. Brodeur, *The N=126 Factory*, MNT2024 - Exploring the heavy exotic neutron-rich nuclides via multinucleon transfer reactions, RIKEN Nishina Center, Wako, Japan, July 2024
- M. Brodeur, *Trapping for St. Benedict*, REU Lunch seminar at the University of Notre Dame, USA, June 2024
- M. Brodeur, *Nuclear Physics Research using electrostatic accelerators at the University of Notre Dame*, 70th anniversary CN-Van der Graaff Accelerator Workshop, Universidad Nacional Autonoma de Mexico, Mexico, January 2024
- M. Brodeur, *The Superaligned Beta Decay Ion Coincidence Ion Trap*, 45th Symposium on Nuclear Physics, Cocoyoc, Mexico, January 2024
- M. Brodeur, *Stopped RIBs for St. Benedict*, Joint DNP-JPS Hawaii meeting 2023, Hilton Waikoloa Village, Big Island, USA, November 2023
- M. Brodeur, *RF carpets*, Workshop on Xenon Detectors 0nbb Searches: Steps towards the kiloton scale, Stanford University, USA, October 2023
- M. Brodeur, *The Past, Present, and Future of mass measurements for nuclear structure*, The Past, Present, and Future of Nuclear Structure Theory in the FRIB Era, Michigan State University, USA, September 2023
- M. Brodeur, *Stopping and bunching of ions for St. Benedict*, REU Lunch seminar at the University of Notre Dame, USA, July 2023
- M. Brodeur, *The N=126 Factory*, International Conference on Stopping and Manipulation of Ions and related topics (SMI-2023), Geissen, Germany, May 2023
- M. Brodeur, *Fundamental Symmetry Research at ARUNA Laboratories*, DNP Meeting

2022, New Orleans, USA, October 2022

- M. Brodeur, *Creating bunches of radioactive ions*, REU Lunch seminar at the University of Notre Dame, USA, June 2022
- M. Brodeur, *Grant Writing or Advertising your Research*, JINA-CEE Junior Researcher Workshop, Notre Dame, USA, May 2022
- M. Brodeur, *The Future of High-Precision Mass Measurements of Nuclear Isomers*, FRIB-TA Topical Program: Nuclear Isomers in the Era of FRIB (On-line), May 2022
- M. Brodeur, *Testing the Standard Model with Nuclear Beta Decays*, University of Massachusetts Lowell Nuclear Physics Seminar (On-line), April 2022
- M. Brodeur, *The N=126 Factory at Argonne National Laboratory*, NUSTAR EMMI workshop, GSI (On-line), September 2021
- M. Brodeur, *Obtaining V_{ud} from nuclear beta decays*, Flavour Lunch Series, Technische Universitat Munchen (On-line), June 2021
- M. Brodeur, *Progress in the ND weak interaction program*, Nuclear Physics Seminar, University of Notre Dame (On-line due to COVID-19), USA, November 2020
- M. Brodeur, *A Survey of Nuclear Experimental Results Towards a V_{ud} Extraction*, APS April meeting 2020 (On-line due to COVID-19), April 2020
- M. Brodeur, *Getting to the last abundance peak with multi-nucleon transfer reactions*, JINA-CEE IReNa/NAOJ workshop, Tokyo, Japan, December 2019
- M. Brodeur, *Beta decay measurements at Notre Dame*, INT-19-75W workshop on Fundamental Symmetries Research with Beta Decay, University of Washington, Seattle, USA, November 2019
- M. Brodeur, *Precision beta-decay measurements to test the Standard Model*, Physics Colloquium, University of Notre Dame, USA, October 2019
- M. Brodeur, *A multi-reflection time-of-flight mass spectrometer for the future N=126 Factory*, 1st Raon user workshop, Daejeon, South Korea, April 2019
- M. Brodeur, *It's not just allowed, it's superallowed!*, Physics Colloquium, Colorado Schools of Mines, USA, April 2019
- M. Brodeur, *Precision measurements of mirror transitions at the Nuclear Science Laboratory*, Nuclear Seminar, National Superconducting Cyclotron Laboratory, East Lansing, USA, March 2019

- M. Brodeur, *Precision measurements of mirror transitions at the Nuclear Science Laboratory*, Heavy-ion discussion, Argonne National Laboratory, Lemont, USA, February 2019
- M. Brodeur, *John's last experiment at Notre Dame and more*, Top Row CKM matrix Unitarity Workshop, Texas A&M University, College Station, USA, January 2019
- M. Brodeur, *Producing exotic nuclei via multi-nucleon transfer reactions*, Notre Dame-Surrey Conference on Nuclear Physics for the Next Generation 2018, London, England, September 2018
- M. Brodeur, *Future developments for high-precision mass spectrometry to study the r-process*, FRIB and the GW170817 kilonova, Michigan State University, USA, July 2018
- M. Brodeur, *Let me trap you before you decay!*, Physics Colloquium, Ball State University, USA, March 2018
- M. Brodeur, *High precision mass measurements for Nuclear Astrophysics*, 41st symposium on nuclear physics, Cocoyoc, Mexico, January 2018
- M. Brodeur, *Precision measurements of mirror transitions at the University of Notre Dame*, Cyclotron Institute 50 years symposium, Texas A&M University, November 2017
- M. Brodeur, *Where and how were the heaviest nuclei produced?*, Astrophysics seminar, McGill University, May 2016
- M. Brodeur, *High precision mass measurements for Nuclear Astrophysics*, JINA-CEE biweekly MA2 online seminar, Online, February 2016
- M. Brodeur, *Precision beta-decay measurements to test the Standard Model*, Nuclear Physics Seminar at the Indiana University in Bloomington, USA, November 2015
- M. Brodeur, *Precision Experiments on Mirror Transitions*, Nuclear Physics Seminar at the University of Jyväskylä, Finland, October 2015
- M. Brodeur, *Precision Experiments on Mirror Transitions*, Colloquium at TRIUMF, Canada, September 2015
- M. Brodeur, *Nuclides bouncing on carpets*, REU Lunch seminar at the University of Notre Dame, USA, June 2015
- M. Brodeur, *Weighting Nature's quirkiest nuclide*, Physics Colloquium at Valparaiso University, Valparaiso, USA, January 2015
- M. Brodeur, *Weighting something that you can't see and lives in the blink of an eye*, Physics Seminar at Central Michigan University, Mount Pleasant, USA, October 2014

- M. Brodeur, *A cyclotron facility for basic and applied nuclear science*, Notre Dame-Europe Symposium on Nuclear Science and Society, London, England, October 2014
- M. Brodeur, *A University-based cyclotron laboratory for nuclear science*, ARUNA meeting, Notre Dame, USA, August 2014
- M. Brodeur, *Trapping radioactive stuff*, REU Lunch seminar at the University of Notre Dame, USA, June 2014
- M. Brodeur, *RIB production for precision experiments at Notre Dame*, Nuclear Physics Seminar at the University of Jyväskylä, Finland, March 2014
- M. Brodeur, *How to precisely weight one of the most exotic nuclei*, Fall DNP meeting, Newport News, USA, October 2013
- M. Brodeur, *Atomic Mass Measurements of Light Nuclei*, ECT* workshop, Trento, Italy, July 2013
- M. Brodeur, *Mass Measurements and Surfing of the Shortest-lived Nuclei*, colloquium at University of Notre Dame, Notre Dame, USA, 2013
- M. Brodeur, *Ion trap experiments for nuclear astrophysics*, seminar at TUNL, Durham, USA, 2013
- M. Brodeur, *Mass Measurements and Surfing of the Shortest-lived Nuclei*, colloquium at Duke University, Durham, USA, 2013
- M. Brodeur, *Mass Measurements and Surfing of the Shortest-lived Nuclei*, colloquium at North Carolina State University, Raleigh, USA, 2013
- M. Brodeur, *Mass Measurements and Surfing of the Shortest-lived Nuclei*, colloquium at Ohio University, Athens, USA, 2013
- M. Brodeur, *Mass Measurements and Surfing of the Shortest-lived Nuclei*, colloquium at TRIUMF, Vancouver, Canada, 2012
- M. Brodeur, *Mass Measurements and Surfing of the Shortest-lived Nuclei*, seminar at Argonne National Laboratory, Lemont, USA, 2012
- M. Brodeur, *A halo in a trap: testing nuclear theories at the extreme*, colloquium at the University of Manitoba, Winnipeg, Canada, 2012
- M. Brodeur, *Precision Mass Measurements of Halo Nuclei*, Nuclear Ground-State Properties of the Lightest Nuclei: Status and Perspectives workshop at Physikzentrum, Bad Honnef, Germany, 2012

- M. Brodeur, *Ion surfing mode for cryogenic gas catcher*, seminar at RIKEN, Wako-shi, Japan, 2011
- M. Brodeur, *Precision Mass Measurements of Neutron Halo Nuclei and First Radioactive HCIs using the TITAN Penning trap*, TCP 2010 international conference, Saariselkä, Finland, 2010
- M. Brodeur, *Precision Mass Measurements of Neutron Halo Nuclei and First Radioactive HCIs*, seminar at the CSNSM-IN2P3/CNRS (Université de Paris Sud), Orsay, France, 2010
- M. Brodeur, *Precision Mass Measurements of Neutron Halo Nuclei and First Radioactive HCIs*, seminar at GSI, Darmstadt, Germany, 2010
- M. Brodeur, *Precision Mass Measurements of Neutron Halo Nuclei and First Radioactive HCIs*, seminar at the MPIK-Heidelberg, Heidelberg, Germany, 2010
- M. Brodeur, *Precision Mass Measurements of Neutron Halo Nuclei and First Radioactive HCIs*, seminar at the NSCL (Michigan State University), East Lansing, USA, 2010
- M. Brodeur, *Mass Determination of N-Rich K and Ca*, ISAC seminar at TRIUMF, Vancouver, Canada, 2009
- M. Brodeur, *Mass Determination of Be-12 and others*, ISAC seminar at TRIUMF, Vancouver, Canada, 2009
- M. Brodeur, *The Most Exotic Nuclei on Earth: Precision Experiments on Halo Nuclei*, talk to Advisory Committee on TRIUMF (ACOT) at TRIUMF, Vancouver, Canada, 2009

Contributed presentations

1. M. Brodeur, *Precision half-life measurements of mirror transitions at the Nuclear Science Laboratory*, ARIS 2023 conference, Avignon, France, June 2023
2. M. Brodeur, *Exotic Beam Summer School*, NSAC Long Range Plan Town Hall Meeting on Nuclear Structure, Reactions and Astrophysics, Argonne National Lab, USA, November 2022
3. M. Brodeur, *Development of the St. Benedict Paul trap for tests of the Standard Model*, DNP Meeting, New Orleans, USA, October 2022
4. M. Brodeur, *Construction of St. Benedict*, EMIS 2022 conference, Daejeon, South Korea, October 2022
5. M. Brodeur, *Precision measurements of mirror transitions at the Nuclear Science Laboratory*, INPC conference 2022, Cape Town, South Africa, September 2022

6. M. Brodeur, *Progress on the St. Benedict development*, DNP meeting 2021, On-line due to COVID-19, October 2021
7. M. Brodeur, *Precision half-life measurements of mirror transitions at the University of Notre Dame*, INPC conference 2019, Glasgow, UK, July 2019
8. M. Brodeur, *The University of Notre Dame Multi-Reflection Time-of-Flight mass spectrometer for the $N = 126$ beam factory*, APS April Meeting 2019, Denver, USA, April 2019
9. M. Brodeur, *Ion trapping developments at the University of Notre Dame*, TCP 2018 conference, Traverse City, USA, October 2018
10. M. Brodeur, *Commissioning a Multi-Reflection Time-of-Flight Mass Spectrometer at the University of Notre Dame*, EMIS 2018 conference, CERN, Switzerland, September 2018
11. M. Brodeur, *Off-line commissioning of the Notre Dame MR-ToF*, Frontier Meeting 2018, Notre Dame, USA, May 2018
12. M. Brodeur, *Off-line commissioning of the University of Notre Dame Multi-Reflection Time-of-Flight mass spectrograph*, DNP Meeting 2017, Pittsburg, USA, October 2017
13. M. Brodeur, *Multi-Reflection Time-of-Flight Mass Spectrometer simulation and commissioning at the University of Notre Dame*, ARIS 2017 conference, Keystone Resort, USA, June 2017
14. M. Brodeur, *The University of Notre Dame MR-ToF*, CS workshop 2017, Greifswald, Germany, March 2017
15. M. Brodeur, *Precision experiments to test the Standard Model at the University of Notre Dame*, APS April Meeting 2017, Washington DC, USA, January 2017
16. M. Brodeur, *Precision experiments on mirror transitions at Notre Dame*, DNP Meeting 2016, Vancouver, Canada, October 2016
17. M. Brodeur, *Precision measurements at the University of Notre Dame*, 2016 Low-Energy Community Meeting, University of Notre Dame, Notre Dame, USA, August 2016
18. M. Brodeur, *Experimental investigation of the repelling force from RF carpets*, International Conference on Stopping and Manipulation of Ions and related topics (SMI-2016), Institute of Modern Physics, Lanzhou, China, June 2016
19. M. Brodeur, *High precision mass measurements for Nuclear Astrophysics*, 2016 Frontier Meeting, University of Notre Dame, Notre Dame, USA, March 2016

20. M. Brodeur, *V_{ud} determination from light nuclide mirror transitions*, EMIS 2015 conference, Grand Rapids, USA, May 2015
21. M. Brodeur, *Precision half-life measurements at Notre Dame*, 2015 Low-Energy Community Meeting, Michigan State University, East Lansing, USA, August 2015
22. M. Brodeur, *Precision Q -value measurement of ^{23}Mg for testing the CKM matrix unitarity*, Joint DNP-JPS Hawaii meeting, Hilton Waikoloa Village, Big Island, USA, October 2014
23. M. Brodeur, *High-precision mass measurements for nuclear structure*, Joint DNP Town meetings on Nuclear Structure and Nuclear Astrophysics at Texas A&M University, College Station, USA, August 2014
24. M. Brodeur, *Rare isotope production for precision experiments at Notre Dame*, ARIS2014 conference, Tokyo, Japan, June 2014
25. M. Brodeur, *Sensitive r -process nuclei production at Notre Dame*, April APS meeting, Savannah, USA, April 2014
26. M. Brodeur, *Traveling wave ion transport for the NSCL cyclotron gas stopper*, EMIS 2012 conference, Matsue, Japan, 2012
27. M. Brodeur, *Ion surfing: a new mode for cryogenic gas catcher, experimental results*, APS DNP fall meeting, East Lansing, USA, 2011
28. M. Brodeur, *The Most Exotic Nuclei on Earth: Precision Experiments on Halo Nuclei*, APS North-West Section meeting 2009, University of British Columbia, 2009
29. M. Brodeur, *Mass Measurement of Neutron Rich Isotopes at the TITAN Experiment*, Canadian Association of Physicist 2008 conference, University of Saskatoon, Saskatoon, Canada, 2008