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AFFILIATION

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EDUCATION

- Ph.D., Physics, Northwestern University, Evanston, Illinois, USA *December 2012*
 - Thesis Title: *Precision Mass Measurements of Short-Lived, Neutron-Rich, R-Process Nuclei About the $N=82$ Waiting Point.*
- M.Sc., Physics, Northwestern University, Evanston, Illinois, USA *January 2006*
 - 3.4/4.0 GPA
 - First among my entering class to finish the requirements for a master's degree and to begin the doctoral candidacy.
 - Courses completed include: Nuclear Astrophysics, Nuclear Physics, Instrumentation, Stellar Astrophysics, Quantum Field Theory, Particle Physics, Statistical Mechanics, Electrodynamics, and Cosmology.
- A.B., Physics with Specialization in Astrophysics, The University of Chicago, Chicago, Illinois, USA *June 2003*
 - 3.4/4.0 GPA
 - Bachelor's thesis on GEMs, a novel type of large area charged particle detector.
 - Rebuilt and tested a calorimeter for the CREAM balloon project.
 - Physics courses completed include: Quantum Mechanics, Atomic Physics, Solid State Physics, Classical Mechanics, Multi-Variable Calculus, and Linear Algebra.

TEACHING AND SERVICE

Northwestern University
Instructor

Evanston, Illinois, USA
September 2018-present

- Teaching calculus-based introductory physics to undergraduates.
- 3 lectures per week with homework and three exams plus a final per quarter.
- Using flipped classroom techniques over the course of the quarter making the transition to online learning easier.
- Teaching students to use LaTeX, Microsoft equation editor, MathML, and Pages for Mac so they can communicate effectively with mathematical language in electronic document creation.
- Managing graduate student TAs who assist with grading and exam writing.
- Using the CANVAS learning management system (LMS) to communicate with students and disseminate class materials.
- Serving on a departmental committee to update standards for the calculus-based course across multiple sections.

Loyola University
Adjunct Professor

Chicago, Illinois, USA
January 2018-May 2018

- Taught second semester non-calculus-based introductory physics to 48 undergraduates.
- 3 lectures (each one hour) and one discussion session (one hour) per week.
- Responsible for creating and grading lectures, homework, and exams.
- Utilizing the SAKAI learning management system and Pearson's *Mastering Physics* to implement online learning and individualized feedback.

Elmhurst College
Adjunct Faculty

Elmhurst, Illinois, USA
September 2017-December 2017

- Taught first semester of non-calculus-based introductory physics to 25 undergraduates.
- 3 lectures (each one hour) and one lab (three hours) per week.
- Responsible for creating and grading homework, labs, and exams.
- Utilizing Blackboard and Pearson's *Mastering Physics* to implement online learning and individualized feedback.

TRIUMF
Postdoctoral Fellow

Vancouver, British Columbia, Canada
June 2014-July 2017

- Taught a six-lecture course on detector physics as part of TRIUMF's *Postdoc Lecture Series*.
- Gave guest lectures on mass measurements and detector physics to nuclear chemistry undergraduate students at both Simon Fraser University and The University of British Columbia.
- Supervised two graduate students and a rotating set of undergraduates working on the CPET commissioning project.
- Regularly presented work at international conferences.
- Referee for *Physical Review C* and *Atoms*.
- Advocate for APS Congressional visits to the Illinois House and Senate delegations ahead of the 2017 March for Science.

Northwestern University
Graduate Teaching Assistant

Evanston, Illinois, USA
September 2004-June 2012

- As a TA I wrote and graded a weekly exam given in the class discussion section which was attended by all students. Taught undergraduate courses in:
 - Introductory Mechanics – 3 quarters. Graded exams and ran a discussion section. Taught both calculus-based and non-calculus-based courses.
 - Electricity & Magnetism – 3 quarters. Graded papers and ran a discussion section. Taught both calculus-based and non-calculus-based courses.
 - Waves and Optics – 1 quarter. Taught non-calculus-based course.
- Laboratory sections: All laboratory sections contained ~20 students. In addition to preparing the experiment, before all sections I performed the experiment three times with varying degrees of rigor to determine likely pitfalls the students might encounter. Taught laboratory sections in:
 - Introductory Mechanics – 4 sections over two years.
 - Electricity & Magnetism – 2 sections in a year.
 - Waves & Optics – 6 sections over two years.

RESEARCH AND WORK EXPERIENCE

Northwestern University Evanston, Illinois, USA
Research Assistant Professor and Administrator – Center for Fundamental Physics *July 2018-present*
Directing research projects and collaborations in the CFP.

- Using my extensive nuclear physics experience to direct a new CFP effort to measure the electric dipole moment (EDM) of heavy nuclei.
- Organizing the CFP Colloquium series that brings luminaries in the disparate fields of fundamental physics to Northwestern.
- Integrating 2 postdocs and 9 graduate students from Harvard into Prof. Gabrielse's lab at Northwestern.
- Continuing existing nuclear physics research by performing already approved experiments at Argonne National Laboratory and TRIUMF.
- Have applied for DOE grants to fund a new experimental effort for an approved collinear laser spectroscopy experiment and am awaiting response.

Laboratory Manager – Center for Fundamental Physics *January 2018-July 2018*
Managing the building of Prof. Gerald Gabrielse's new Center for Fundamental Physics

- Working with all of Gerald Gabrielse's collaborations at Northwestern, Harvard, and CERN to design and fabricate experimental upgrades.
- Managing approximately 8,000 square feet of laboratory space and filling it with multiple experiments and support equipment.

Argonne National Laboratory Argonne, Illinois, USA
Postdoctoral Researcher *September 2017-January 2018*
Managing design, fabrication, and assembly of the $N=126$ factory for the ATLAS accelerator.

- Brought to bear years of experience in CAD design and project management through multiple fabrication streams to create three radiofrequency quadrupole ion guides.
 - One for Argonne's $N=126$ factory.
 - One for Argonne's CARIBU facility.
 - One for Notre Dame University's β -v experiment.
- Analyzed data from recent neutron-rich mass measurement experiments and preparing publications.
- Added to my existing portfolio of nuclear physics experiments at Argonne and TRIUMF with a proposal at the IGISOL facility in Jyväskylä, Finland.
- Provided expertise and guidance in the day-to-day running and repairs of the CARIBU facility at Argonne.

*Founding member of the EMMATrap collaboration. Lead postdoc for the TITAN group.
Commissioned TITAN's new Cooler Penning Trap (CPET).*

- Founding member and lead proponent of the EMMATrap collaboration which will install a mass measurement system at TRIUMF's new EMMA facility.
- Lead postdoc for the TITAN group. In charge of day-to-day decision making and group strategy.
- Started a campaign to perform concurrent mass and collinear laser spectroscopy measurements at TRIUMF to unambiguously assign ground and isomeric state spins.
- Designed, fabricated, installed and characterized a new "mesh" detector for detecting properly trapped electrons inside CPET's magnetic field.
- Created new electrodes in preparation for the mating of CPET to the TITAN beamline.
- Shepherding experimental proposals that I authored through the planning processes of their respective institutions:
 - Interleaved Penning trap and laser spectroscopy measurements of neutron-rich Cd – *Experiment at TRIUMF*
 - Seven days approved at medium priority.
 - Masses of Ge & Se *r*-Process Nuclei Beyond the N=50 Waiting Point – *Experiment at Argonne National Laboratory*
 - Eight days approved at Priority I.
 - Successfully measured the masses of ⁸⁹⁻⁹¹Se.
 - Data analysis is in process.
 - Precision Mass Measurements of ¹⁴⁷⁻¹⁴⁹Cs – *Experiment at TRIUMF*
 - Three days approved at medium priority.
 - Will run 2018.
 - Masses of Cd *r*-process nuclei around the N=82 waiting point – *Experiment at Argonne National Laboratory*
 - Eight days approved at Priority I.
 - Will run by the end of 2017.
 - Precision Mass Measurements of *r*-Process Relevant Copper Isotopes, Towards and Including ⁸¹Cu – *Letter of Intent at TRIUMF*
 - Endorsed with high priority.
 - Precision Mass Measurements of *rp*-Process Relevant Sr Nuclei – *Letter of Intent at TRIUMF*
 - Endorsed with priority 2.
 - Beam development is scheduled for 2017.
 - Direct Mass Measurements of Neutron-Deficient Cu and Mn Nuclei – *Letter of Intent at TRIUMF*
 - Endorsed with priority 2.
 - Beam development is scheduled for 2017.
 - Development of n-rich Ga beams for precision mass measurements – *Letter of Intent at TRIUMF*
 - Endorsed with priority 1.
- Led shifts during all TITAN experiments (mass measurements and in-trap decay spectroscopy) and served as safety officer.
- Prepared the beam preparation and safety documentation for all TITAN experiments.

McMaster-Carr Supply Company
Systems Manager

Elmhurst, Illinois, USA
August 2013-May 2014

A group leader in the Systems Department of an industrial supply company with ~US\$2B in annual sales.

- Led the initiative to bring the warehouse material handling programming and source control into the Systems Department's purview.
- Oversaw a team of three employees that designed and implemented network infrastructure redesigns and new software rollouts for all five of the company's warehouses (Illinois, Georgia, New Jersey, Ohio and California).
- Directed vendors and conveyor integrators on warehouse upgrade projects for all five branches and made recommendations to VP-level executives as to the feasibility and success of those projects.

Systems Analyst

October 2012-August 2013

- Wrote and maintained routines in mainframe and Windows computing environments.
- Led a project to upgrade 50% of the company's legacy mainframe code whose support was being phased out by IBM.
- Analyzed order database statistics in order to define the scope of the legacy code removal project.
- Applied my experience from Argonne National Laboratory to use programmable logic controllers to begin working on warehouse and conveyor-related data projects.

Argonne National Laboratory
Doctoral Candidate

Lemont, Illinois, USA
January 2006-September 2012

Performed high precision mass measurements of short-lived nuclei with the Canadian Penning Trap Mass Spectrometer on the ATLAS accelerator.

- Measured the masses of $^{130-131}\text{In}$, $^{130-135}\text{Sn}$, $^{131-137}\text{Sb}$, $^{133,135-140}\text{Te}$, $^{131-135,139-141}\text{I}$, and $^{142-146}\text{Cs}$.
- Designed, procured and helped install every piece of the low energy beamline at ATLAS' Californium Rare Isotope Breeder Upgrade (CARIBU) facility.
- Achieved proficiency in computer-aided drafting in both two- and three-dimensions.
- Implemented the Stored Waveform Fourier Transform (SWIFT) technique for use in the experiment.
- Automated the experiment's vacuum system with a PLC and Ladder Logic so that any member of the collaboration could operate the system from a single location.
- Designed and built radiofrequency coupling circuits for several of the group's radiofrequency quadrupole ion guides and traps.
- Presented ongoing work at national and international conferences.
- Participated in all of the group's experiments including (but not limited to) mass measurements, β -endpoint measurements and β -v angular correlations in the Beta-Paul Trap.
- Set-up and maintained a cryogenically cooled gas target for experiments.
- Performed data analysis with the group's in-house suite of analysis software.
- Made programmatic changes to the experiment's data acquisition system in FORTRAN that improved both program efficiency and data fitting quality.

Worked in the Weizmann Institute's detector lab developing uses for Gas Electron Multipliers (GEMs).

- Expanded upon previous work on Gas Electron Multipliers (GEMs) from bachelor's thesis and built a multi-GEM detector to detect single electrons.
- Applied chemical deposition techniques to create both visible and ultraviolet light photocathodes.
- Attained proficiency in clean-room procedures.

PUBLICATIONS IN PEER REVIEWED JOURNALS

1. E. Leistenschneider, R. Klawitter, A. Lennarz, M. Alanssari, J.C. Bale, B.R. Barquest, U. Chowdhury, A. Finlay, A.T. Gallant, B. Kootte, D. Lascar, K.G. Leach, A.J. Mayer, D. Short, C. Andreoiu, G. Gwinner, M.E. Wieser, J. Dilling, and A.A. Kwiatkowski, "Diversifying beam species through decay and recapture ion trapping: a demonstrative experiment at TITAN-EBIT," *J. Phys. G* **47** 045113 (2020).
Led shifts on the experiment.
2. M.P. Reiter, S. Ayet San Andrés, S. Nikas, J. Lippuner, C. Andreoiu, C. Babcock, B.R. Barquest, J. Bollig, T. Brunner, T. Dickel, J. Dilling, I. Dillmann, E. Dunling, G. Gwinner, L. Graham, C. Hornung, R. Klawitter, B. Kootte, A.A. Kwiatkowski, Y. Lan, D. Lascar, K.G. Leach, E. Leistenschneider, G. Martínez-Pinedo, J.E. McKay, S.F. Paul, W.R. Plaß, L. Roberts, H. Schatz, C. Scheidenberger, A. Sieverding, R. Steinbrügge, R. Thompson, M.E. Wieser, C. Will, and D. Welch, "Mass measurements of neutron-rich gallium isotopes refine production of nuclei of the first *r*-process abundance peak in neutron-star merger calculations," *Phys. Rev. C* **101** 025803 (2020).
Led shifts on the experiment. Performed verification measurements with the Penning trap.
3. M.P. Reiter, F. Ames, C. Andreoiu, S. Ayet San Andrés, C. Babcock, B.R. Barquest, J. Bergmann, J. Bollig, T. Brunner, T. Dickel, J. Dilling, I. Dillmann, E. Dunling, A. Finlay, G. Gwinner, L. Graham, C. Hornung, B. Kootte, R. Klawitter, P. Kunz, Y. Lan, D. Lascar, J. Lassen, E. Leistenschneider, R. Li, J.E. McKay, M. Mostamand, S.F. Paul, W.R. Plaß, C. Scheidenberger, B.E. Schultz, R. Steinbrügge, A. Teigelhoefer, R. Thompson, M.E. Wieser, C. Will, and A.A. Kwiatkowski, "Improved beam diagnostics and optimization at ISAC via TITAN's MR-TOF-MS," *NIMB* **463** 431 (2020).
Performed verification calculations with Penning trap data and worked shifts on relevant experiments.
4. A.A. Valverde, M. Brodeur, J.A. Clark, D. Lascar, and G. Savard, "A cooler-buncher for the N=126 factory at Argonne National Laboratory," *NIMB* **463** 330 (2020).
Led the fabrication and commissioning effort for the facility's cooler buncher.
5. S.F. Paul, B. Kootte, D. Lascar, A.A. Kwiatkowski, G. Gwinner, J. Dilling, and the TITAN collaboration, "Off-axis electron injection into a cooler Penning trap," *Hyp. Int.* **240** 50 (2019).
Led the effort. Designed much of the existing electron ejection hardware. Fabricated it. Installed it. Commissioned it.

6. A.A. Valverde, M. Brodeur, D.P. Burdette, J.A. Clark, J.W. Klimes, D. Lascar, P.D. O'Malley, R. Ringle, G. Savard, and V. Varentsov, "Stopped, bunched beams for the TwinSol facility," *Hyp. Int.* **240** 38 (2019).
Led the fabrication and commissioning effort for the TwinSol facility's cooler buncher.
7. M.P. Reiter, S. Ayet San Andrés, E. Dunling, B. Kootte, E. Leistenschneider, C. Andreoiu, C. Babcock, B.R. Barquest, J. Bollig, T. Brunner, I. Dillman, A. Finlay, G. Gwinner, L. Graham, J.D. Holt, C. Hornung, C. Jesch, R. Klawitter, Y. Lan, D. Lascar, J.E. McKay, S.F. Paul, R. Steinbrügge, R. Thompson, J.L. Tracy Jr, M.E. Wieser, S. Will, T. Dickel, W.R. Plaß, C. Scheidenberger, A.A. Kwiatkowski, and J. Dilling, "Quenching of the N=32 neutron shell closure studied via precision mass measurements of neutron-rich vanadium isotopes," *Phys. Rev. C.* **98** 024310 (2018).
Led shifts on the experiment. Performed verification measurements with the Penning trap. Generated several figures.
8. E. Leistenschneider, M.P. Reiter, S. Ayet San Andrés, B. Kootte, J.D. Holt, P. Navrátil, C. Babcock, C. Barbieri, B.R. Barquest, J. Bergmann, J. Bollig, T. Brunner, E. Dunling, A. Finlay, H. Geissel, L. Graham, F. Greiner, H. Hergert, C. Hornung, C. Jesch, R. Klawitter, Y. Lan, D. Lascar, K.G. Leach, W. Lippert, J.E. McKay, S.F. Paul, A. Schwenk, D. Short, J. Simonis, V. Somà, R. Steinbrügge, S.R. Stroberg, R. Thompson, M.E. Wieser, C. Will, M. Yavor, C. Andreoiu, T. Dickel, I. Dillmann, G. Gwinner, W.R. Plaß, C. Scheidenberger, A.A. Kwiatkowski, and J. Dilling, "Dawning of the N=32 shell closure seen through precision mass measurements of neutron-rich titanium isotopes." *Phys. Rev. Lett.* **120** 062503 (2018).
Led shifts on the experiment. Performed verification measurements with the Penning trap.
9. C. Babcock, R. Klawitter, E. Leistenschneider, D. Lascar, B.R. Barquest, A. Finlay, M. Foster, P. Hunt, B. Kootte, Y. Lan, S. Paul, M.L. Phan, M.P. Reiter, B. Schultz, D. Short, C. Andreiou, M. Brodeur, I. Dillmann, G. Gwinner, A.A. Kwiatkowski, K.G. Leach, and J. Dilling, "Mass measurements of neutron-rich indium isotopes toward the N=82 shell closure." *Phys. Rev. C.* **97** 024312 (2018).
Led shifts on the experiment. Performed data analysis checks and astrophysical calculations.
10. D. Lascar, R. Klawitter, C. Babcock, E. Leistenschneider, S.R. Strober, B.R. Barquest, A. Finlay, M. Foster, A.T. Gallant, P. Hunt, J. Kelly, B. Kootte, Y. Lan, S.F. Paul, M.L. Phan, P.M. Reiter, B. Schultz, D. Short, J. Simonis, C. Andreiou, M. Brodeur, I. Dillmann, G. Gwinner, J.D. Holt, A.A. Kwiatkowski, K.G. Leach, and J. Dilling, "Precision mass measurements of $^{125-127}\text{Cd}$ isotopes and isomers approaching the N=82 closed shell." *Phys. Rev. C.* **96** 044323 (2017).
Wrote the paper. Led shifts on the experiment. Performed data analysis and calculations. Data included in 2016 Atomic Mass Evaluation.
11. M.P. Reiter, K.G. Leach, O.M. Drozdowski, S.R. Stroberg, J.D. Holt, C. Andreoiu, C. Babcock, B. Barquest, M. Brodeur, A. Finlay, M. Foster, A.T. Gallant, G. Gwinner, R. Klawitter, B. Kootte, A.A. Kwiatkowski, Y. Lan, D. Lascar, E. Leistenschneider, A. Lennarz, S. Paul, R. Steinbrügge, R.I. Thompson, M. Weiser, and J. Dilling, "High-precision Q_{EC} -value measurement of the superallowed β^+ emitter ^{22}Mg and an *ab-initio* evaluation of the A=22 isobaric triplet," *Phys. Rev. C.* **96** 052501(R) (2017).
Led shifts on experiments and assisted in the data analysis.

12. D. Lascar, B. Kootte, B.R. Barquest, U. Chowdhury, A.T. Gallant, M. Good, R. Klawitter, E. Leistenschneider, C. Andreoiu, J. Dilling, J. Even, G. Gwinner, A.A. Kwiatkowski, and K.G. Leach, "A Novel Transparent Charged Particle Detector for the CPET Upgrade at TITAN," *NIMA*, **868** 133 (2017).
Wrote the paper. Designed, assembled, and commissioned the detector.
13. R. Orford, J. A. Clark, A. Nystrom, G. Savard, A. Aprahamian, M. Brodeur, F. Buchinger, D. Burdette, M. T. Burkey, T. Y. Hirsh, J. Kelly, D. Lascar, L. Ling-Ying, G. E. Morgan, K. S. Sharma, and K. Siegl, "Phase-imaging Mass Measurements with the Canadian Penning Trap Mass Spectrometer," *Proc. 14th Int. Symp. Nucl. Cosm.*, **11102** 1 (2017).
My proposed experiment was the first where the CPT group at Argonne used the PI-ICR technique to measure masses. Data from those measurements is being analyzed.
14. A.T. Gallant, M. Alanssari, J.C. Bale, C. Andreoiu, B.R. Barquest, U. Chowdhury, J. Even, A. Finlay, D. Frekers, G. Gwinner, R. Klawitter, B. Kootte, A.A. Kwiatkowski, D. Lascar, K.G. Leach, E. Leistenschneider, A. Lennarz, A.J. Mayer, D. Short, R. Thompson, M. Wieser, D. Lunney, and J. Dilling, "Mass Determination near N=20 for Al and Na Isotopes," *Phys. Rev. C* **96** 024325 (2017).
Led shifts on experiment.
15. B. Kootte, U. Chowdhury, J. C. Bale, J. Dilling, A. Finlay, A. T. Gallant, E. Leistenschneider, B. R. Barquest, J. Even, M. Good, A. A. Kwiatkowski, D. Lascar, K. G. Leach, A. Lennarz, R. Klawitter, R. Schupp, D. A. Short, G. Gwinner, C. Andreoiu, M. Alanssari, D. Frekers, T. Li, and A. J. Mayer, "Quantification of the Electron Plasma in TITAN's Cooler Penning Trap," *Int. Workshop on Beam Cooling and Related Topics (COOL'15)* 39 (2016).
Supervised the work. Designed and commissioned the detector used.
16. G. Li, S. Caldwell, J. A. Clark, S. Gulick, A. Hecht, D. Lascar, T. Levand, G. Morgan, R. Orford, G. Savard, K. S. Sharma, and J. Van Schelt, "A compact cryogenic pump," *Cryogenics*, **75** 35 (2016).
Helped assemble the pump. Made modifications to the initial design.
17. D. Lascar, A. A. Kwiatkowski, U. Chowdhury, A. Finlay, A. T. Gallant, M. Good, R. Klawitter, B. Kootte, K. G. Leach, A. Lennarz, E. Leistenschneider, B. E. Schultz, R. Schupp, D. A. Short, C. Andreoiu, J. Dilling and G. Gwinner, "Improvements to TITAN's Mass Measurement and Decay Spectroscopy Capabilities," *NIMB*, **376** 292 (2016).
Wrote the paper. Responsible for all of the work in the CPET section.
18. R. Klawitter, A. Bader, U. Chowdhury, A. Chaudhuri, J. Fallis, A. T. Gallant, A. Grossheim, A. A. Kwiatkowski, D. Lascar, K. G. Leach, A. Lennarz, T. D. Macdonald, J. Pearkes, S. Seeraji, M. C. Simon, V. V. Simon, B. E. Schultz and J. Dilling, "Mass measurements of neutron-rich Rb and Sr isotopes," *Phys. Rev. C* **93** 045807 (2016).
Led shifts during experiment. Responsible for the nuclear astrophysics calculations and the resulting abundance graphs.

19. B. Kootte, U. Chowdhury, J. C. Bale, J. Dilling, A. Finlay, A. T. Gallant, E. Leistenschneider, B. R. Barquest, J. Even, M. Good, A. A. Kwiatkowski, D. Lascar, K. G. Leach, A. Lennarz, R. Klawitter, R. Schupp, D. Short, G. Gwinner, C. Andreoiu, M. Alanssari, D. Freckers, T. Li, and A. J. Mayer, “Quantification of the electron plasma in TITAN’s cooler Penning trap,” *Proceedings of COOL2015*, 8-11 (2015).
Designed, fabricated, installed and calibrated the detector used to make the measurements.
20. U. Chowdhury, M. Good, B. Kootte, D. Lascar, B. E. Schultz, J. Dilling, and G. Gwinner, “A Cooler Penning trap for the TITAN mass measurement facility,” *PROCEEDINGS OF THE XII INTERNATIONAL SYMPOSIUM ON ELECTRON BEAM ION SOURCES AND TRAPS*, **1640** 120 (2015).
Worked on all of the diocotron data.
21. N. D. Scielzo, R. M. Yee, P. F. Bertone, F. Buchinger, S. Caldwell, J. A. Clark, A. Czeszumaska, C. M. Deibel, J. P. Greene, S. Gulick, D. Lascar, A. F. Levand, G. Li, E. B. Norman, S. Padgett, M. Pedretti, A. Perez Galvan, G. Savard, R. E. Segel, K. S. Sharma, M. G. Sternberg, J. Van Schelt, and B. J. Zabransky, “A Novel Approach to β -delayed Neutron Spectroscopy Using the Beta-decay Paul Trap,” *Nucl. Data Sheets*, **120** 70 (2014).
Took shifts on the experiments. Delivered isobarically pure beams to the Beta-Paul Trap.
22. J. Van Schelt, D. Lascar, G. Savard, J. A. Clark, P. F. Bertone, S. Caldwell, A. Chaudhuri, A. F. Levand, G. Li, G. E. Morgan, R. Orford, R. E. Segel, K. S. Sharma, and M. G. Sternberg, “First Results from the CARIBU Facility: Mass Measurements on the r-Process Path,” *Phys. Rev. Lett.*, **111** 061102 (2013).
Co-author. Data are part of my Ph.D. thesis. Worked in concert with Van Schelt preparing and leading the experiment, sharing the data analysis. Worked together on the manuscript.
23. R. M. Yee, N. D. Scielzo, P. F. Bertone, F. Buchinger, S. Caldwell, J. A. Clark, C. M. Deibel, J. Fallis, J. P. Greene, S. Gulick, D. Lascar, A. F. Levand, G. Li, E. B. Norman, M. Pedretti, G. Savard, R. E. Segel, K. S. Sharma, M. G. Sternberg, J. Van Schelt, and B. J. Zabransky, “ β -Delayed Neutron Spectroscopy Using Trapped Radioactive Ions,” *Phys. Rev. Lett.*, **110** 092501 (2013).
Took shifts on the experiments. Delivered isobarically pure beams to the Beta-Paul Trap.
24. G. Li, R. Segel, N. Scielzo, P. Bertone, F. Buchinger, S. Caldwell, A. Chaudhuri, J. Clark, J. Crawford, C. Deibel, J. Fallis, S. Gulick, G. Gwinner, D. Lascar, A. Levand, M. Pedretti, G. Savard, K. Sharma, M. Sternberg, T. Sun, J. Van Schelt, R. Yee, and B. Zabransky, “Tensor Interaction Limit Derived From the α - β - ν^- Correlation in Trapped Li8 Ions,” *Phys. Rev. Lett.*, **110** 092502 (2013).
Took shifts on the experiments. Delivered isobarically pure beams to the Beta-Paul Trap. Built shielding for the strip detectors.
25. J. Van Schelt, D. Lascar, G. Savard, J. A. Clark, S. Caldwell, A. Chaudhuri, J. Fallis, J. Greene, A. Levand, G. Li, K. Sharma, M. Sternberg, T. Sun, and B. Zabransky, “Mass measurements near the r-process path using the Canadian Penning Trap mass spectrometer,” *Phys. Rev. C*, **85** 045805 (2012).
Co-author. Data are part of my PhD thesis. Worked in concert with Van Schelt preparing and leading the experiment, sharing the data analysis. Worked together on the manuscript.

26. N. D. Scielzo, G. Li, M. G. Sternberg, G. Savard, P. F. Bertone, F. Buchinger, S. Caldwell, J. A. Clark, J. Crawford, C. M. Deibel, J. Fallis, J. P. Greene, S. Gulick, A. a. Hecht, D. Lascar, J. K. P. Lee, A. F. Levand, M. Pedretti, R. E. Segel, H. Sharma, K. S. Sharma, I. Tanihata, J. Van Schelt, R. M. Yee, and B. J. Zabransky, “The β -Decay Paul trap: A radiofrequency-quadrupole ion trap for precision studies,” *NIMA*, **681** 94 (2012).
Took shifts on the experiments. Delivered isobarically pure beams to the Beta-Paul Trap.
27. R. Vondrasek, S. Baker, P. Bertone, S. Caldwell, J. A. Clark, C. Davids, D. Lascar, A. Levand, K. Lister, R. Pardo, D. Peterson, D. Phillips, G. Savard, M. Sternberg, T. Sun, J. Van Schelt, and B. Zabransky, “COMMISSIONING EXPERIENCE WITH CARIBU,” *Proceedings of HIAT 2012*, 45 (2012).
Designed, procured the equipment for, and helped assemble the CARIBU low energy beamline.
28. A. Chaudhuri, P. F. Bertone, F. Buchinger, S. Caldwell, J. A. Clark, J. E. Crawford, C. M. Deibel, S. Gulick, D. Lascar, a F. Levand, G. Li, G. Savard, R. E. Segel, K. S. Sharma, M. G. Sternberg, T. Sun, and J. Van Schelt, “Studies of neutron-rich nuclei using the CPT mass spectrometer at CARIBU,” *J. Phys. Conf. Ser.*, **312** 042009 (2011).
Took shifts during the experiments.
29. J. Fallis, J. A. Clark, K. S. Sharma, G. Savard, F. Buchinger, S. Caldwell, A. Chaudhuri, J. E. Crawford, C. M. Deibel, S. Gulick, A. A. Hecht, D. Lascar, J. K. P. Lee, a. F. Levand, G. Li, B. F. Lundgren, A. Parikh, S. Russell, M. Scholte-van de Vorst, N. D. Scielzo, R. E. Segel, H. Sharma, S. Sinha, M. G. Sternberg, T. Sun, I. Tanihata, J. Van Schelt, J. C. Wang, Y. Wang, C. Wrede, and Z. Zhou, “Mass measurements of isotopes of Nb, Mo, Tc, Ru, and Rh along the vp- and rp-process paths using the Canadian Penning trap mass spectrometer,” *Phys. Rev. C*, **84** 4 p. 1 (2011).
Analyzed the Mo data. Took shifts during the experiment.
30. N. D. Scielzo, S. Caldwell, G. Savard, J. A. Clark, C. M. Deibel, J. Fallis, S. Gulick, D. Lascar, A. F. Levand, G. Li, J. Mintz, E. B. Norman, K. S. Sharma, M. G. Sternberg, T. Sun, and J. Van Schelt, “Double- β -decay Q values of ^{130}Te , ^{128}Te , and ^{120}Te ,” *Phys. Rev. C*, **80** 025501 (2009).
Delivered isobarically pure beams to the Beta-Paul Trap. Took shifts on the experiments.
31. J. Fallis, J. A. Clark, K. Sharma, G. Savard, F. Buchinger, S. Caldwell, J. Crawford, C. Deibel, J. Fisker, S. Gulick, A. Hecht, D. Lascar, J. Lee, A. Levand, G. Li, B. Lundgren, A. Parikh, S. Russell, M. de Vorst, N. Scielzo, R. E. Segel, H. Sharma, S. Sinha, M. G. Sternberg, T. Sun, I. Tanihata, J. Van Schelt, J. Wang, Y. Wang, C. Wrede, and Z. Zhou, “Determination of the proton separation energy of Rh93 from mass measurements,” *Phys. Rev. C*, **78** 2 (2008).
Took shifts during the experiment.
32. J. Fallis, J. A. Clark, K. S. Sharma, G. Savard, F. Buchinger, S. Caldwell, J. E. Crawford, C. M. Deibel, J. L. Fisker, S. Gulick, A. A. Hecht, D. Lascar, J. K. P. Lee, A. F. Levand, G. Li, A. Parikh, N. D. Scielzo, R. E. Segel, H. Sharma, M. G. Sternberg, T. Sun, J. Van Schelt, and C. Wrede, “Mass Measurements of Proton-Rich Isotopes in the Vicinity of ^{92}Ru and ^{93}Rh for ‘nu’p-process Models,” in *10th Symposium on Nuclei in the Cosmos*, (2008).
Took shifts during the experiment.
33. J. Van Schelt, G. Savard, S. Caldwell, J. A. Clark, J. Fallis, J. P. Greene, D. Lascar, A. F. Levand, G. Li, R. E. Segel, K. S. Sharma, M. G. Sternberg, T. Sun, and B. J. Zabransky, “Precision Mass Measurements of Heavy ^{252}Cf Fission Fragments Near the r-process Path,” in *10th Symposium on Nuclei in the Cosmos*, (2008).
Took shifts during the experiment and checked the data analysis.

INVITED TALKS

- American University Physics Seminar. April, 19, 2017, Washington, DC, USA. *Penning Trap Mass Measurements at TITAN*.
- University of Houston Physics Seminar. April 13, 2017, Houston, Texas, USA. *TITAN Mass Measurements and an Introduction to EMMATrap*.
- ISOLDE Physics Seminar. September 7, 2016, Geneva, Switzerland. *Recent TITAN Measurements and EMMATrap: An Introduction*.
- ARIEL Science Workshop 2016. July 21, Vancouver, British Columbia, Canada. *Musings on EMMATrap*.
- Annual Congress of the Canadian Association of Physicists 2016. June 13-17, Ottawa, Ontario, Canada. *Mass Measurements with TITAN*.
- Applications of Lasers and Storage Devices in Atomic Nuclei Research 2016. May 16-19, Ponzan, Poland. *Recent Mass Measurements with TITAN*.
- The American Physical Society – Northwest Section Meeting 2016. May 12-14, Penticton, British Columbia, Canada. *Progress with the TITAN Mass Spectrometer*.
- TRIUMF Nuclear Physics Seminar. March 16, 2016, Vancouver, British Columbia, Canada. *Astrophysical Mass Measurements at TRIUMF*.
- ARIEL Science Workshop 2015. July 10-11, Vancouver, British Columbia, Canada. *Mass Measurements of Astrophysically Important Nuclei at TITAN*.
- Los Alamos Physics Seminar. February 15, 2012, Los Alamos, New Mexico, USA. *R Process Mass Measurements with the CPT at CARIBU*.

SEMINARS

- *EMMATrap: An important addition to the TRIUMF 5-year plan*. July 2017, TRIUMF, Vancouver, British Columbia, Canada.
- *Recent Work with the TITAN System & EMMATrap: An Introduction*. April 2017, Rice University, Houston, Texas, USA.
- *Recent TITAN Measurements and EMMATrap: An Introduction*. April 2017, Texas A&M University, College Station, Texas, USA.
- *Mass Measurements at the TITAN Facility*. October 2015, TRIUMF, Vancouver, British Columbia, Canada.
- *Cooling Highly Charged Ions Using TITAN's Cooler Penning Trap (CPET)*. January 2015, TRIUMF, Vancouver, British Columbia, Canada.
- *Mass Measurements on the r-Process Path*. June 2012, Argonne National Laboratory, Lemont, Illinois, USA.
- *Mass Measurements with the CPT at CARIBU*. May 2012, Argonne National Laboratory, Lemont, Illinois, USA.
- *From the Triangle Room to CARIBU: The status of r-process mass measurements with the CPT*. November 2010, Argonne National Laboratory, Lemont, Illinois, USA.
- *The Lindau Conference of Nobel Laureates*. August 2008, Argonne National Laboratory, Lemont, Illinois, USA.
- *Precision Mass Measurements of Astrophysically Important r-process Nuclei*. December 2006, Argonne National Laboratory, Lemont, Illinois, USA.

CONTRIBUTIONS AT CONFERENCES AND WORKSHOPS

- APS Division of Nuclear Physics Meeting 2017. October 25-28, Pittsburgh, Pennsylvania, USA. *Concurrent Mass Measurements and Laser Spectroscopy for Unambiguous Isomeric State Assignment* – submitted talk.
- 2017 Low Energy Community Meeting. August 3, Lemont, Illinois, USA. *Concurrent mass measurements and collinear laser spectroscopy* – submitted talk.
- ARIS 2017. May 28-June 2, Keystone, Colorado, USA.
 - *Isomeric State Mass Measurement and Identification at TRIUMF's Penning Trap* – submitted poster.
 - *EMMATrap: A New Generation of Cryogenic Gas Stopper and Buncher Coupled to a Penning Trap* – submitted poster.
- APS Division of Nuclear Physics Meeting 2016. October 13-16, Vancouver, British Columbia, Canada. *Instrumentation Upgrades to TITAN's Cooler Penning Trap* – submitted talk.
- EMMA Collaboration Meeting 2016. July 19, Vancouver, British Columbia, Canada. *EMMATrap: Initial Plans and Musings*.
- Electromagnetic Isotope Separators (EMIS) 2015. May 11-15, Grand Rapids, Michigan, USA. *Status of TITAN's Cooler Penning Trap for Highly Charged Ions* – submitted poster.
- APS Division of Nuclear Physics Meeting 2011. October 26-29, East Lansing, Michigan, USA. *Facilitating Precision Mass Measurements at CARIBU* – submitted talk.
- Joint Institute for Nuclear Astrophysics Frontiers 2010. October 21-23, Lake Geneva, Wisconsin, USA. *CPT Mass Measurements at CARIBU* – submitted talk.
- American Physical Society April Meeting 2010. February 13-16, Washington, DC, USA. *Precision Mass Measurements at CARIBU* – submitted talk.
- Exotic Nuclei and Atomic Masses 2008. September 7-13, Ryn, Poland. *Mass Measurements of ^{252}Cf Fission Fragments in the $A=108-110$ Region* – submitted talk and poster.

SUMMER SCHOOLS

- National Nuclear Physics Summer School 2009, Michigan State University, East Lansing, Michigan, USA.
- RIA Summer School 2007, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA.

AWARDS

- Winner of the 2016 TRIUMF THREE-MINUTE TALK competition with the talk *Stars Are Great*.
- Represented Argonne National Laboratory as a member of the US Delegation at the 2008 Lindau Meeting of Nobel Laureates in Lindau, Germany.

COMPUTING SKILLS

- Operating Systems: DOS, Windows, Mac, UNIX and Linux.
- Programs and Languages: SolidWorks, Autodesk Inventor, AutoCAD, SimION, Office, C/C++, FORTRAN, COBOL II, SQL, BASIC, VisualBASIC, Python, Ladder Logic for Rockwell, Siemens and Schneider (Modicon) Programmable Logic Controllers (PLCs).