## Juliette M. (Crowder) Mammei

Department of Physics and Astronomy

University of Manitoba (204)474-6195

215 Allen Building jmammei@physics.umanitoba.ca

Winnipeg, MB R3T 2N2

Canada http://www.physics.umanitoba.ca/~mammei

**EDUCATION** 

2010 PhD, Virginia Tech, Blacksburg, Virginia

Nuclear/Particle Physics, June 2010

2007 MS Virginia Tech, Blacksburg, Virginia

Physics (Non-thesis), October 2007

Research Advisor: Dr. Mark Pitt

PhD Thesis: Parity-Violating Elastic Electron Nucleon Scattering:

Measurement of the Strange Quark Content of the Nucleon and Towards a

Measurement of the Weak Charge of the Proton

2003 University of Texas at El Paso, El Paso, Texas

Physics. Summa Cum Laude, June 2003

### **PROFESSIONAL POSITIONS**

2012 – present Assistant Professor, University of Manitoba

#### Motivation

- parity-violating asymmetries in electron scattering as precision tests of the Standard Model
- nucleon and nuclear properties via electroweak form factor measurements
- higher-order processes, such as gamma-Z and two-photon exchange

#### Expertise

- simulation and design of magnetic spectrometers
- construction and testing of detectors
- systematic studies and analysis of data

2010 – 2012 Postdoctoral Research Assistant, University of Massachusetts, Amherst

(stationed at Jefferson Lab, Newport News, VA, USA)

Research Advisor: Dr. Krishna Kumar

- MOLLER Experiment Simulation and design of spectrometer (TOSCA), development of the simulation software (GEANT4), co-convener of simulation working group, management of web resources (webpage, elog, wiki pages, document database)
- PREx/CREX Run coordinator (PREX I); neutron shielding design, magnetic field simulations, (PREX II/CREX), PI (CREX)

 Hall A Collaboration Experiments – Data-taking for APEX, DVCS, run coordinator for SRC (during N->Delta), Triutium

- Qweak Experiment Data-taking (specifically for transverse beam polarization data), analysis, run coordinator
- **G0 Experiment** Data analysis for backward angle transverse asymmetry, pion transverse asymmetry

2003-2010 Graduate Research Assistant, Virginia Tech, Blacksburg, Virginia Research Advisor: Dr. Mark Pitt

- Qweak Experiment Simulation and design of collimators, minitorus, beamline and shielding; construction and simulation of region II drift chamber; prototype luminosity monitor testing
- **G0 Experiment** Data taking and data quality analysis, analysis of the transverse asymmetry at backward angles

1999-2002 Undergraduate Research (institution and advisor as noted)

- Jefferson Lab, research advisor: Rolf Ent Data analysis for EMC effect in resonance region;
   SHMS spectrometer simulations for 12 GeV Upgrade, Fall 1999, Summer 2000 and 2002
- **Physics Department, University of Texas at El Paso**, research advisor: Dr. Ramon Lopez Physics education research, 2000-2002
- Texas A&M Research Internship, Fermi National Lab, research advisor: Dr. Peter McIntyre Simulation of vacuum in anti-proton recycler ring, Summer 2001
- **ERULF Internship, Oak Ridge National Lab,** research advisor: Patrick Martin Testing and manufacture of high temperature superconducting tapes, Summer 1999

#### AWARDS AND HONORS

2017	Falconer Emerging Researcher Rh Award for Outstanding
	Contributions to Scholarship and Research in the Natural Sciences
2016	University of Manitoba Outreach Award (member, Faculty of Science
	Outreach Committee)
2011	Jefferson Science Associates Promising Young Scientist Award
	Provides expenses for colloquium at host institution
2008-2009	Jefferson Science Associates Fellowship, \$10,000
	Stipend awarded to exemplary graduate students for research
	related to the Thomas Jefferson National Accelerator Facility
2008	Luise Meyer-Schutzmeister Memorial Award \$1,000
	Awarded by the Association for Women in Science to an outstanding
	female graduate researcher
2007	Roundtable Scholarship for Graduate Study in the College of Science
	of Virginia Tech, \$2,750
	For students to "make a difference" to the College of Science and the

world through their research

2007 Commendation for Virginia Tech College of Science Outstanding **Doctoral Student Award** 2006-2007 Southeastern Universities Research Association Fellowship, \$10,000 Stipend awarded to exemplary graduate students for research related to the Thomas Jefferson National Accelerator Facility 2006 Jaime Dunn Award, \$500 Awarded to a student who actively fostered a spirit of good will in the department and has demonstrated a deep enthusiasm for physics 2003-2008 National Science Foundation Graduate Research Fellow, \$30,000 each year for three out of five years, plus \$10,000 cost of education allowance for tuition and fees recognizes and supports outstanding graduate students in NSFsupported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees 2003-2006 Cunningham Fellowship, \$8,000 per year Award to a new student with an outstanding academic record and strong potential for completing a doctoral degree 2001-2002, 2002-2003 Houston Endowment Scholar, University of Texas at El Paso, \$5,000 To recruit highly talented students and encourage the pursuit of leadership roles on campus Micheal J. Shea Fund, University of Texas at El Paso, College of 2001-2002, 2002-2003 2002-2003 Research Experience for Undergraduates stipend, \$8,000-\$10,000 per summer 1999, 2000 Paul R. Yoder Scholarship Recipient, amount absorbed into full tuition scholarship student majoring in physics who has performed excellent academic work through the junior year and intends to pursue an advanced degree 1997 Full tuition scholarship to Juniata College, approx. \$26,000 per year For National Merit Scholar Finalists 1997 National Merit Scholar Finalist, \$2,500

For high scores on the Practice SAT

#### **PROFESSIONAL ASSOCIATIONS**

2013 – present	Member, Canadian Institute of Nuclear Physics
2012 – present	Member, Canadian Association of Physicists
2002 – present	Member, American Physical Society
1999 – present	Member, ΣΠΣ, Physics Honor Society

# **FUNDING PROFILE**

# **Funding Awarded**

2016-2019	<b>PI</b> , NSERC Subatomic Physics Project, \$283,600  PREX II and CREX: Precision Parity Violating Measurement of the Neutron Skin of Heavy Nuclei at Jefferson Laboratory
2017-2019	co-PI, NSERC Subatomic Physics Project, \$324,000  Measurement of a Lepton-Lepton Electroweak Reaction (MOLLER): An Ultra-precise
	measurement of the weak mixing angle using Moller scattering at JLAB
2016-2018	co-PI, NSERC Subatomic Physics Project, \$99,700
	Qweak: Weak Charge of the Proton and New Physics at Jefferson Laboratory, S. Page, PI
2016-2019	co-PI, NSERC Subatomic Physics Project, \$190,100
	High precision cold neutron beta decay correlation measurements at the SNS; the Nab experiment, M. Gericke, PI
2016-2019	co-PI, NSERC Subatomic Physics Project, \$1,130,000
	Ultra-cold Neutrons at TRIUMF, J. Martin, Pl
2014-2016	co-PI, NSERC Subatomic Physics Project, \$130,000
	Measurement of a Lepton-Lepton Electroweak Reaction (MOLLER): An Ultra-precise
	measurement of the weak mixing angle using Moller scattering at JLAB, M. Gericke
2014-2019	<b>PI</b> , CFI/MRIF LOF, \$242,666
	Detector development laboratory
2013-2016	co-PI, NSERC Subatomic Physics Project, \$965,000
	Ultra-cold Neutrons at TRIUMF, J. Martin, PI
2013-2016	PI, NSERC Subatomic Physics Project, \$270,000
	PREX II and CREX: Precision Parity Violating Measurement of the Neutron Skin of Heavy Nuclei at Jefferson Laboratory
2013-2016	co-PI, NSERC Subatomic Physics Project, \$420,000
	Qweak: Weak Charge of the Proton and New Physics at Jefferson Laboratory, S. Page, PI
2012-2015	PI, University of Manitoba Start-up, \$125,000
2014-2015	PI, NSERC Subatomic Physics Project, \$65,000
	Measurement of a Lepton-Lepton Electroweak Reaction (MOLLER): An Ultra-precise measurement of the weak mixing angle using Moller scattering at JLAB

# **Funding Applied for**

2017-2022	<b>co-PI</b> , CFI-IF, \$6,325,213
	The MOLLER integrating electron detector array: Searching for new interactions
	between electrons at the zeptometer scale, M. Gericke, PI
2017	co-PI, NSERC RTI, \$71,610
	Electron Detectors for High Precision Compton Polarimetry in Parity Violating
	continued

Electron Scattering using HVMAPS, M. Gericke, PI

2013-2014 PI, NSERC RTI, \$150,000 (declined)

Electronics for a Compton Electron Detector for High Precision Polarimetry

2013-2014 co-PI, NSERC RTI, \$149,903 (declined)

Neutron EDM Experiment at RCMP, A. Konaka, PI

#### **Collaboration Activity**

2013 - present	Leader of the MOLLER spectrometer group
	Coordinate design and development of the MOLLER spectrometer
	magnet, support structure and collimation with the other
	components of the experiment
2012 – present	Canadian PI on the MOLLER Executive Board
	Permanent member of the executive board (primary policymaking
	body) for the MOLLER experiment
2012 – present	Co-PI on the CREX Experiment
	Co-author of the proposal to the Jefferson Lab Program Advisory
	Committee. Organize meetings and ongoing work for the
	experiment
2010 – present	Member, PREX collaboration
	Preparation for the PREX II experiment to run at JLAB. Supervision of
	ongoing postdoctoral simulation work
2003 – present	Member, Qweak Collaboration
	Member of the collaboration; participate in design, construction,
	data collection and ongoing analysis
2005 – present	Member, G0 Collaboration
	Member of the collaboration; participate in data collection and
	analysis, author of the transverse data Physics Review Letter, co-
	author of the Nuclear Instruments and Methods paper (to be
	submitted)
2010 – 2013	Deputy leader of the MOLLER spectrometer group
	Lead the activities of the spectrometer group for the MOLLER
	experiment
2010 – 2012	Co-convener of the MOLLER Simulation Group
	Lead the simulation activities for the MOLLER experiment. Organize
	the other groups that are working on simulations

### **TEACHING EXPERIENCE**

### **Department of Physics and Astronomy,** *University of Manitoba*

September 2012-present

1020 – Introductory Algebra-based Mechanics, Development of an online course

1030 – Introductory Algebra-based Electricity and Magnetism

1050 - Introductory Calculus-based Mechanics

1070 - Introductory Waves and Modern Physics

2600 – Electromagnetic Field Theory (tutorial instructor)

2210 - Understanding Electricity and Magnetism

3660 – Classical Mechanics 3 – Hamiltonian Mechanics, Non-linear oscillations and Chaos

Johns Hopkins Center for Talented Youth, *Santa Cruz, CA,* Summer 2007 Instructor for the Nuclear Science course. Intense course for gifted youth covering broad range of topics in nuclear science

**Physics Department,** *University of Texas at El Paso,* Fall 2000-Spring 2003 Coordinate 5 TAs for 12 labs and 8 computer simulations sections, grading and design of certain aspects of the course, conduct exam reviews, TA

**Physics Department,** *Juniata College,* Fall 1998, Spring 1999, Spring 2000 Supervised students as a TA during lab periods

### **SUPERVISORY ACTIVITIES**

#### **Note on Student Training:**

Students and postdoctoral researchers under my supervision receive valuable practical and theoretical training in both the hardware and software aspects of an experiment. Their training includes computer programming, electrical circuit design and assembly, use of machining tools, plumbing, and development of sophisticated simulation, modeling and data analysis software.

A PhD thesis in experimental subatomic physics is expected to contain significant software and hardware contributions to an experiment or experiments. Software contributions include design and simulation and development of analysis software, with analysis of a unique physics result. Hardware aspects include data acquisition and development and testing of detectors. A MS thesis would be similar to a PhD thesis with less emphasis on a unique physics result.

My undergraduate and graduate students interact with other members of the collaborations via teleconferences and collaboration meetings. They also present their work at conferences including the Winter Nuclear and Particle Physics Conference or the Canadian Association of Physicists conference.

#### **Student Supervision**

#### **Doctoral**

2015 – present	Supervisor, Sakib Rahman, University of Manitoba; Parity-violating
ргесени	electron scattering experiments at Jefferson Lab
2013	Effective supervisor, Chun-min Jen, Syracuse University; Target
	length study for the MOLLER experiment
2010 – 2012	Effective co-supervisor, Co-Supervisor, Katherine Myers, George
	Washington University: Qweak simulation of backgrounds

2010 – 2103	Effective co-supervisor, Co-Supervisor, Buddhini Waidyawansa, Ohio University; Transverse asymmetry measurements during Qweak	
Masters		
2016 – present	Supervisor, Han Soul Lee, University of Manitoba; MOLLER etector prototype development	
2016 – present	Supervisor, Iris Halilovic, University of Manitoba; Position sensitivity study for the MOLLER upstream toroid	
2015 – 2016	Supervisor, Sakib Rahman, University of Manitoba; Parity-violating electron scattering experiments at Jefferson Lab	
2013 – 2017	Supervisor, Ryan Spies, University of Manitoba; Parity-violating electron scattering experiments at Jefferson Lab	
Undergraduate		
2018 – present	Supervisor, Brynne Blaikie, University of Manitoba; Ca studies for CREX, DAQ system tests	
2016 – 2017	Supervisor, Timothy Hucko, University of Manitoba; Simulations for the Hall A Compton Polarimeter	
2015 – 2016	Supervisor, Iris Halilovic, University of Manitoba; Position sensitivity study for the MOLLER upstream toroid	
2012 – 2015	Supervisor, Sakib Rahman, University of Manitoba; Position sensitivity study for the MOLLER hybrid toroid	
High School		
2011	Supervisor, Michael Snider, JLAB Summer Honors Program; Simulation of photon backgrounds for the MOLLER experiment.	
Post-doctorate Research Supervision		
2016 – present	Co-Supervisor, Jie Pan, Tracking analysis for QWEAK and MOLLER detector development	
2015 – present	Co-Supervisor, Preeti Pandi, Development of a chip for us in HVMAPS detectors	
2015 – 2018	Supervisor, Josh Hoskins, University of Manitoba; Development of a Hall A Compton Polarimeter Electron Detector and Design and Simulation of a Compton Electron Detector for the Future EIC	
2014 – 2015	Co-Supervisor, Mitra Shabestari, University of Manitoba;  Development of a Hall A Compton Polarimeter Electron Detector	
2013 – present	Effective co-supervisor, Rakitha Beminiwattha, Syracuse University;	

Neutron background simulations for the PREX and CREX experiments; optimization of the collimation and shielding

of a Hall A Compton Polarimeter Electron Detector

Co-Supervisor, Vladas Tvaskis, University of Manitoba; Development

2013

2013	Supervisor, Robert Mahurin, University of Manitoba; Development of
	a Hall A Compton Polarimeter Electron Detector
2012 – 2013	Effective co-supervisor, Lorenzo Zana, Syracuse University; Neutron
	background simulations for the PREX and CREX experiments;
	optimization of the collimation and shielding

# **SERVICE AND OUTREACH**

# **National and International Committees/Service**

2018	Member, CAP DNP Thesis Prize Committee
2017 – present	Member, TRIUMF Policy and Planning Committee (PPAC), Canada
2015 – 2016	Chair, Jefferson Lab Hall A Coordinating Committee, USA
2015	Member, TRIUMF Policy and Planning Committee (PPAC), Canada
2015	Member, Canadian Institute of Nuclear Physics (CINP) NSERC Long
	Range Plan Brief Writing Committee
2014 – 2017	Chair, Nuclear Physics Education Scientific Working Group, CINP
2013 – 2015	Co-organizer, International Symposium for Symmetries in Subatomic
	Physics Conference, September 2015, Vancouver, BC
2013 – 2014	Co-organizer, Winter Nuclear and Particle Physics Conference,
	February 2014, Banff, AB
2013	Session Chair, "Testing Fundamental Symmetries in Nuclear Physics"
	for the Division of Nuclear Physics at the Canadian Association of
	Physics Congress, May, 2014, Montreal, QC
2014 – 2017	Chair, Jefferson Science Associates Promising Young Scientist Award
	Committee, USA
	Coordinate review of applications, locations of presentations and
	annual application for funds.
2014 – 2016	Member, Hall A coordinating committee, USA
	Organize Hall A collaboration meetings, writes the Hall A annual
	report.
2012 – 2014	Member, Jefferson Science Associates Promising Young Scientist
	Award Committee, USA
	Review applications for the award and arrange travel for invited
	talks.
2011	Organizer, Hall A Physics Workshop, December 2011, Jefferson Lab,
	USA

# **University Committees/Service**

2015 – present	Chair, Alumni sub-committee of the Indigenous Initiatives
	Committee
2014 – present	Member, Indigenous Initiatives Committee
2015 – present	Member, Research Advisory Team, Science (RATS)
2015 – present	Member, Faculty of Science Outreach Committee
2012 – 2014	Member, Faculty of Science Library Committee

2006 – 2007	Virginia Tech Graduate Student Assembly representative to the
	Commission for Undergraduate Studies and Policies
2005, Spring	Virginia Tech Graduate Student Assembly representative to the
	Graduate Curriculum Committee
2004 – 2007	Virginia Tech Graduate Student Assembly Physics Department
	Representative

# **Departmental Committees/Service**

2017 – 2018	Member, Subatomic Tenure Track Faculty Search Committee
2016 – 2017	Member, Department Headship Search Committee
2015 – 2016	Member, Instructor Search Committee
2015 – 2017	Chair, Outreach and Recruitment
2015 – present	Member, Honors/Majors Committee
2015 – present	Member, Curriculum Committee
2013 – 2015	Member, Outreach and Recruitment
2013 – 2015	Member, Radiation, Safety and Security Committee
2013 - present	Member, Department Nominating Committee
2013 - 2017	Faculty Advisor, Organization of Physics Students (OPUS)
2012 – 2014	Member, Department Curriculum Committee
2012 – 2014	Chair, Department Library Liaison Committee
2004 – 2005	<b>Organizer</b> , Teaching Workshops for Physics Graduate Students
1999 – 2000	Vice President, Society of Physics Students, Juniata College

### **Thesis Committees**

2016 – present	Member, Jaseer Ahmed, PhD Thesis Committee
2016 – present	Member, Melissa Anholm, PhD Thesis Committee
2016 – present	Member, Maryam Mostamand, PhD Thesis Committee
2015 – present	Member, Wenhao Sun, PhD Thesis Committee
2014 – present	Member, Michael Lang, Ph. D. Thesis Committee
2014 – present	Member, Lori Rebenitsch, PhD Thesis Committee
2012 – 2017	Member, Andrea Teigelhoefer, PhD Thesis Committee
2013	Member, Michael Lang, M. Sc. Thesis Committee
2013	Member, Troy Dawson, M. Sc. Thesis Committee

### Outreach

2018, Fall	Science Teachers of Manitoba workshop, "Physics Demos on the Cheap"
2018, Summer	Verna J. Kirkness Science and Engineering Program  Host several local aboriginal high school students for a week; they participate in research activities
2017, Summer	Verna J. Kirkness Science and Engineering Program Host several local aboriginal high school students for a week; they participate in research activities (assisted by Dr. Werner Ens)  continued

2016, Summer	Science Rendezvous Part of faculty planning committee, Hosted booth for the public of all
2016, Summer	ages Verna J. Kirkness Science and Engineering Program Host several local aboriginal high school students for a week; they
2015, Summer	participate in research activities  Verna J. Kirkness Science and Engineering Program  Host several local aboriginal high school students for a week; they participate in research activities
2016, Winter	Physics and Astronomy Day  Host local high school students for a day of physics demos and presentations
2014, Summer	Verna J. Kirkness Science and Engineering Program  Host several local aboriginal high school students for a week; they
2013, Fall	participate in research activities Physics and Astronomy Day Host local high school students for a day of physics demos and
2013, Summer	presentations  Verna J. Kirkness Science and Engineering Program  Host several local aboriginal high school students for a week; they participate in research activities
2013	Judge, Best Student Presentation Competition at the 2013 CAP Congress, May, 2014, Montreal, QC
2012	International Baccalaureate
2012, Fall	Physics and Astronomy Day  Host local high school students for a day of physics demos and presentations
2005, Fall 2005, Fall	. Cleaned donated apartments for Hurricane Katrina victims Led Virginia Tech Physics graduate student Red Cross donation drive
,	5 70

### **INVITED TALKS AND PROCEEDINGS**

- 1. Low Energy Standard Model Tests. Laval University, Queen's University and Royal Military College of Canada. CAP Lecture Series. (2017)
- 2. Spectrometers used in PVES experiments at JLAB. Workshop on Physics beyond the standard model and precision nucleon structure measurements. ECT\*Trento. Trento, Italy (2016)
- 3. Parity Violating Electron Scattering. Women In Physics Canada. Saskatoon, Saskatchewan, Canada (2016)
- 4. The CREX Experiment. Neutron Skins of Nuclei Workshop. MITP. Mainz, Germany (2016)
- 5. Science and Spirit. Verna J. Kirkness Program Banquet. University of Manitoba (2016)
- 6. The MOLLER Experiment. Conference on the Intersections of Particle and Nuclear Physics. Vail, CO, USA (2015)
- 7. Cosmic Connections: learning about neutron stars without leaving the earth. Science Research Talk at Migizii Agamik. September 21, 2015

8. The Pb Radius and the Ca Radius Experiment. From Parity Violation to Hadronic Structure and More... PAVI14. Skaneateles, NY, USA (2014)

- 9. The Pb Radius and the Ca Radius Experiment. Winter Nuclear and Particle Physiscs Conference. Banff, AB (2014)
- 10. A review of the parity-violating electron scattering program at JLab. 13th International Conference on Meson Nucleon Physics and the Structure of the Nucleon (MENU 2013). Rome, Italy (2013)
- 11. Highlights from Qweak. Canadian Association of Physicists Conference. Montreal, QC (2013)
- 12. Parity-violating electron scattering at Jefferson Lab. Seminar at the University of North Dakota. Grand Forks, ND, USA (2013)
- 13. Future Measurements at JLab: PREX II and CREX. CREX Workshop. Newport News, VA, USA (2013)
- 14. The Pb Radius Experiment (PREX). Seminar at the University of Winnipeg, Winnipeg, MB (2012)
- 15. The Precision vs. the Energy Frontier (MOLLER and Qweak). Seminar at the College of William and Mary. Williamsburg, VA, USA (2012)
- 16. Results from the Pb Radius Experiment (PREX). Seminar at Ohio University. Athens, OH, USA (2012)
- 17. MOLLER Experiment Overview. Parity Violation and more, (PAVI11). Rome, Italy (2011). **Nuovo Cimento C** 035N04. Proceedings of PAVI 11 (2012)
- 18. 12 GeV MOLLER Update. Hall A Meeting, JLab. Newport News, VA, USA (2011)
- 19. *Transverse Asymmetries: GO Backward Angle*. Hall C Users Meeting, JLab. Newport News, VA, USA (2011)
- 20. *Just How Strange is the Nucleon?*. The George Washington University. Washington, DC, USA (2009)
- 21. *Transverse asymmetries at backward angles in G0*. Parity Violation and more, (PAVI09). Bar Harbor, ME, USA (2009). **Hyperfine Interactions** 201:19-23. Proceedings of PAVI09 (2011)
- 22. Qweak: A Search for New Physics at the TeV Scale. Hall C Meeting, JLab. Newport News, VA, USA (2008)
- 23. What nuclear physicists don't know (and wish they did). Virginia Tech Graduate Learning Center Speakers Series. Blacksburg, VA, USA (2006)
- 24. *Peeling the Onion: The Structure of the Proton*. Juniata College Alumni Series. Huntingdon, PA, USA (2005)

# PUBLICATIONS AND PRESENTATIONS

#### Note on publication policies:

Subatomic physics experiments require large collaborations in order to design, build and run the experiment. There is a large number of authors on each paper, and each collaboration member has to make extensive contributions in order for the experiment to be a success. Each collaboration develops its own rules for authorship and to determine the order of the authors. A few will list as first author the person who was primarily responsible for writing the first draft of the paper, but many simply list the authors in alphabetical order. For all the listed publications I

contributed to the experiment with design, simulation, detector development, analysis or data acquisition and fulfilled the requirements set by the collaboration to be an author.

#### **Refereed Publications**

- 1. Precision Measurement of the Weak Charge of the Proton. D. Androic et al., including J. Mammei (110 total authors). Accepted by **Nature.** (2018)
- 2. The P2 Experiment A future high-precision measurement of the electroweak mixing angle at low momentum transfer. Dominik Becker et al., including J. Mammei (45 total authors). Submitted to Euro. Jour. Phys. A (2018)
- 3. Search for three-nucleon short-range correlations in light nuclei. Z. Ye et al., including J. Mammei (103 total authors). Phys. Rev. C 97: 065204 (2018)
- 4. Neutron decay correlations in the Nab experiment. L.J. Broussard et al., including J. Mammei (59 total authors). J. Phys. Conf. Ser. 876:012005 (2017)
- 5. A glimpse of gluons through deeply virtual compton scattering on the proton. M. Defurne et al., including J. Mammei (94 total authors). **Nature Commun**. 8:1408 (2017)
- 6. Rosenbluth separation of the  $\pi 0$  electroproduction cross section. M. Defurne, et al., including J. Mammei (100 total authors). **Phys. Rev. Lett.** 118:222002 (2017)
- 7. Electroexcitation of the  $\Delta$ +(1232) at low momentum transfer. A. Blomberg, et al., including J. Mammei (100 total authors). **Phys.Lett. B** 760, 267-272 (2016)
- 8. Rosenbluth separation of the  $\pi 0$  electroproduction cross section. M. Defurne et al., including J. Mammei (94 total authors). **Phys. Rev. Lett.** 117:262001 (2016)
- 9. *The Qweak experimental Apparatus.* T. Allison, et al., including J. Mammei (128 total authors). **Nuc. Instrum. Meth. A** 781, 105-133 (2015)
- 10. Probing the Repulsive Core of the Nucleon-Nucleon Interaction via the He4(e,e'pN) Triple-Coincidence Reaction. I Korover et al., including J. Mammei (120 total authors). **Phys. Rev. Lett.** 113, 022501 (2014)
- 11. First Determination of the Weak Charge of the Proton. D. Androic et al., including J. Mammei (97 total authors). **Phys. Rev. Lett.** 111:141803 (2013)
- 12. New Measurements of the Transverse Beam Asymmetry for Elastic Electron Scattering from Selected Nuclei. S. Abrahamyan et al., including J. Mammei (195 total authors). **Phys. Rev. Lett.** 109: 192501 (2012)
- 13. Measurement of the Neutron Radius of <sup>208</sup>Pb Through Parity Violation in Electron Scattering. S. Abrahamyan et al., including J. Mammei (135 total authors). **Phys. Rev. Lett.** 108: 112502 (2012)
- 14. Measurement of the parity violating asymmetry in inclusive electroproduction of  $\pi$  near the  $\Delta^0$  resonance. G0 Collaboration D. Androić et al., including J. Mammei (67 total authors). **Phys. Rev. Lett.** 108: 122002 (2012)
- 15. Search for a New Gauge Boson in Electron Nucleus Fixed Target Scattering by the APEX. S. Abrahamyan et al., including J. Mammei (66 total authors). **Phys. Rev. Lett.** 107: 191804 (2011)
- 16. Transverse Beam Spin Asymmetries at Backward Angles in Elastic Electron-Proton and Quasi-elastic Electron-Deuteron Scattering. D. Androić et al., including J. Mammei (68 total authors). Phys. Rev. Lett. 107: 022501 (2011)

17. The GO Experiment: Apparatus for Parity-Violating Electron Scattering Measurements at Forward and Backward Angles. D. Androić et al., including J. Mammei (128 total authors). **Nucl. Instrum. Methods A** 646 (2011)59

- 18. Strange Quark Contributions to Parity-Violating Asymmetries in the Backward Angle G0 Electron Scattering Experiment. D. Androić et al., including J. Mammei (67 total authors). Phys. Rev. Lett. 104:012001 (2010)
- 19. Proton and deuteron  $F_2$  structure function at low  $Q^2$ . V. Tvaskis et al., including J. Mammei (30 total authors). **Phys. Rev. C** 81:055207 (2010)
- 20. Quasifree  $\lambda$ ,  $\sigma^0$ , and  $\sigma$  electroproduction from H-1, H-2, He-3, He-4 and carbon. F. Dohrmann et al., including J. Crowder (62 total authors). **Phys. Rev. C** 76:054004 (2007)
- 21. Longitudinal-Transverse Separations of Deep-Inelastic Structure Functions at Low Q<sup>2</sup> for Hydrogen and Deuterium. V. Tvaskis et al., including J. Crowder (52 total authors). **Phys. Rev. Lett.** 98:142301 (2007)
- 22. Low Q Scaling, Duality, and the EMC Effect. J. Arrington, R. Ent, C.E. Keppel, J. Mammei, I.Niculescu. **Phys. Rev. C** 73, 035205 (2006)
- 23. Angular distributions for hyper He-3 He-4 bound states in the He-3 He-4(e, e-prime K+) reaction. F. Dohrmann et al., including J. Crowder (63 total authors). **Phys. Rev. Lett.** 93:242501 (2004)
- 24. *Electroproduction of Kaons on light nuclei*. B. Zeidman et al., including J. Crowder (95 total authors). **Nucl. Phys. A** 691:37-42 (2001)
- 25. *Electroproduction of Kaons and light nuclei*. J. Reinhold et al., including J. Crowder (96 total authors). **Nucl. Phys. A** 684:470-474 (2001)

#### **Contributed Talks and Proceedings**

- 1. First ultracold neutrons produced at TRIUMF. S. Ahmed, et al., including J. Mammei (53 total authors). preprint, arXiv:1809.04071v1
- 2. The MOLLER Experiment. American Physical Society Division of Nuclear Physics Meeting, Vancouver, BC, Canada (2016)
- 3. *The Pb Radius Experiment (PREX)*. Conference on the Intersections of Particle and Nuclear Physics. St. Petersburg, FL, USA (2012). **AIP Conf. Proceedings** 1560:620-622 (2013)
- 4. *Design of the 12 GeV MOLLER Spectrometer*. American Physical Society Division of Nuclear Physics Meeting. Anaheim, CA, USA (2011)
- 5. *Transverse Asymmetries: GO Backward Angle*. Parity Violation Workshop (PAVI09). Bar Harbor, ME, USA (2009)
- 6. Transverse Beam Spin Asymmetries in Backward-Angle Elastic Electron-Proton and Quasielastic Electron-Deuteron Scattering. American Physical Society Division of Nuclear Physics Meeting. Newport News, VA, USA (2007)
- 7. Qweak: A Precision Measurement of the Proton's Weak Charge. American Physical Society Meeting. Jacksonville, FL, USA (2007)
- 8. Measurement of  $Q^2$  for the Qweak Experiment. Meeting of the Southeastern Section of the American Physical Society. Williamsburg, VA, USA (2006)
- 9. Monte Carlo Simulations of the Super High Momentum Spectrometer for the Proposed 12 GeV Upgrade at Jefferson Lab. American Physical Society Division of Nuclear Physics Meeting. Lansing, Michigan, USA (2002)

10. Investigating student attitudes and performance in a revised introductory physics sequence – I and II. Texas Section Joint American Physical Society American Association of Physics Teachers Meeting. Dallas, TX, USA (2001)

- 11. Vacuum Study of the FNAL Anti-Proton Recycler Ring. Joint American and Japanese Physical Society Division of Nuclear Physics Meeting. Maui, HI, USA (2001)
- 12. Comparison of  $F_2$  Structure Function Data. Texas Section American Physical Society Meeting. Houston, TX, USA (2000)