

Department of Astronomy & Physics
Saint Mary's University
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Born: September 1, 1965

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Academic Employment

- 2011-present** Associate Dean of Science – Curriculum & External, Saint Mary's University
2010-2011 Acting Associate Dean of Science, Saint Mary's University
2006-present Professor, Department of Astronomy & Physics, Saint Mary's University
2005-present Adjunct Professor, Department of Physics and Atmospheric Science, Dalhousie University
2000-2006 Associate Professor, Department of Astronomy & Physics, Saint Mary's University
2000-2003 Courtesy Assistant Professor, Department of Physics, Florida State University
1995-2000 Assistant Professor, Department of Physics, Florida State University
1992-1995 Research Associate, Laboratory for Nuclear Science (Nuclear Interactions Research Group), Massachusetts Institute of Technology

Education

- 1987-1993 Ph.D., Experimental Nuclear Physics, University of Saskatchewan
1983-1987 B.Sc.(Engineering) with Great Distinction (University President's Medal, Engineering Prize), Engineering Physics, University of Saskatchewan

Fields of Research Interest

Electromagnetic properties of the nucleon and light nuclei using the techniques of coincidence electron scattering.
Evaluation of Selected Teaching Methodologies for First-Year Physics classes.

Academic and Teaching-Related Awards

- 2011: 3M National Teaching Fellowship
2008: Association of Atlantic Universities, Instructional Leadership Award
2008: Saint Mary's University, Dr. Geraldine Thomas Educational Leadership Award
2008: Canadian Association of Physicists (CAP) Medal for Excellence in Undergraduate Teaching
2007: Saint Mary's University, 2007-2008 Teaching Scholar
2005: Saint Mary's University, Reverend William A. Stewart Medal for Excellence in Teaching
2004: Saint Mary's University, SMUSA Faculty of Science Excellence in Teaching Award
2000: Florida State University "Excellence in Teaching" Award
1987-91 NSERC, University Postgraduate Scholarships (PGS 1,1R,3,3R)
1989 University of Saskatchewan College of Graduate Studies, Research Scholarship
1987-1988 University of Saskatchewan Physics Department, The Herzberg Scholarship
1987 University of Saskatchewan, President's Medal for "*Undergraduate with Highest Academic Standing*"
1987 University of Saskatchewan College of Engineering, Engineering Prize
1986 Saskatoon Professional Engineers' Scholarship
1986 NSERC Undergraduate Summer Research Award, University of Sask.
1986 Saskatoon Professional Engineers' Scholarship
1985 NSERC Undergraduate Summer Research Award, University of Sask.

Community Awards

- 2008: Discovery Center (Halifax), Discovery Award Winner in Science Champion Category
2008: Province of Nova Scotia, Provincial Volunteer Award (rep. of Halifax Regional Munic.)
2008: Halifax Regional Municipality, Volunteer Recognition Award (rep. of Distric 21, Bedford)
2006: Discovery Center (Halifax), Discovery Award Finalists in Science Champion Category

Grants Held

I: Nuclear Physics Research

- 2009-12 Natural Sciences and Engineering Research Council of Canada (NSERC), Individual Research “Discovery Grant” (Subatomic Physics GSC) for *Probing Electromagnetic Structure of the Nucleon using Polarization at Jefferson Lab*, **\$105,000** (\$33k, \$36k, \$36k over each of 3 years)
- 2009-12 Natural Sciences and Engineering Research Council of Canada (NSERC), Project Grant (Subatomic Physics GSC) for *Investigating Hadron Structure with CB-TAPS at MAMI*; P.I.: Hornidge (Mount Allison U.), co-P.I.’s: Sarty (SMU) and Huber (Regina); **\$420,000** (\$140,000 per year for 3 years)
- 2009 Saint Mary’s University Faculty of Graduate Studies (FGSR) Research Grant for *Prototype development for a Scintillating Fiber Tracking Detector for use at Jefferson Lab’s Hall A* **\$1500**
- 2006-9 Natural Sciences and Engineering Research Council of Canada (NSERC), Individual Research “Discovery Grant” (Subatomic Physics GSC) for *Precision Studies of the Electromagnetic Structure of the Nucleon and Light Nuclei Scattering*, **\$128,250** (\$42,750 per year for 3 years)
- 2003-6 Natural Sciences and Engineering Research Council of Canada (NSERC), Individual Research “Discovery Grant” (Subatomic Physics GSC) for *Probing the Structure of the Nucleon and Light Nuclei using Electron Scattering*, **\$104,520** (\$34,840 per year for 3 years)
- 2001-3 Natural Sciences and Engineering Research Council of Canada (NSERC), Individual Research Grant (Subatomic Physics GSC) for *Studies of Nucleon and Nucleon-Resonance Structure using Electron Scattering*, **\$66,800** (\$33,400 per year for 2 years)
- 2001 Saint Mary’s University Senate “Start-up” Grant for *Experimentally Probing the Proton’s Internal Structure: Is the Proton Spherical?*, **\$2500**
- 2000 Florida State University Council on Research and Creativity “COFRS Award”, **\$2000**
- ’99-’00 National Science Foundation (NSF) Physics Division (Nuclear), Group Research Award for *Studies of Nuclear Reactions and Structure*; P.I.: Tabor; co-P.I.’s: Cottle, Dennis, Fletcher, Frawley, Kemper, Myers, Riley, Sarty; **\$1,280,000 per year** (3 years awarded; was on project for 2 years)
- ’99-’00 Department of Energy (DoE), Nuclear Physics Division, Group Research Award for *Support for Experimental Nuclear Physics at Florida State University*; co-P.I.’s: Riccardi (Comp.Sci.), Sarty (Phys.); P.I.: Dennis (Phys.); **\$200,000 per year** (3 years awarded; was on project for 2 years)
- 1999 Florida State University Faculty Travel Grant Award, **\$1000**
- 1996 FSU Council on Research and Creativity, First-Year Assistant Professor Award, **\$5000**

II: Scholarship of Teaching

- 2008 Saint Mary’s University Office of Instructional Development Travel for *A Regional Symposium on “best-practice use” of Clickers in University Classrooms*, **\$1500**
- 2006 Saint Mary’s University Office of Instructional Development Travel Grant for *Invited presentation to the 2006 AAU Teaching Showcase: Using Wireless Responders during Lectures: A Study and a Theory to assess Impact and Appropriate Use*, **\$597**
- 2005 Saint Mary’s University Strategic Initiative Fund Grant for *Implementing Wireless Responder Capability in Classrooms across SMU*; co-PI’s: A.J. Sarty and K. Lightstone (Accounting); other proponents: D. Bateman (Accounting), S. Pendse (Management), R.J. Konopasky (Psych.), D. Crocker (Soc. & Criminology); **\$20,000**
- 2004 Saint Mary’s University Faculty of Graduate Studies (FGSR) Research Grant for *Investigating the Effectiveness of Personal Responders for Improving Learning and Retention in Physics Education*; co-P.I.’s: A.J. Sarty and R.J. Konopasky; **\$2600**
- 2004 Saint Mary’s University Office of Instructional Development Small Project Grant for *Pilot Study on Responder Technology: Incentive to Learn Fund*, **\$600**
- 2004 Saint Mary’s University Office of Instructional Development Travel Grant for *Invited presentation to the 2003 AAU Teaching Showcase: Video Vignettes across Disciplines*, **\$554**
- 2003 Saint Mary’s University Office of Instructional Development Travel Grant for *Invited presentation to the AAU Teaching Showcase: Simple Technologies to Enhance Interactivity in Large Classes*, **\$350**
- 2002 Saint Mary’s University Office of Instructional Development Project Grant for *An OnLine Resource Tool for Physics-Concept Demonstrations*, **\$2500**
- 2001 Saint Mary’s University Office of Instructional Development Travel Grant for *A Mini-Symposium on CAPA: A Web-Based Package for Individualized Student Assignments*, **\$750**
- 2000 Florida State University Instructional Development Award, **\$8500**

University & Professional Administrative Activities

- 2010-present Chair of SMU Faculty of Science standing Committees:
- Community Engagement / Outreach
- Science Curriculum
- Science Space
- 2009-(13) Chair (2010-13) & Member (2009-10), NSERC Scholarships and Fellowships Committee for Physics and Astronomy
- 2010-present Member, TRIUMF Board of Directors as SMU representative
- 2010 External Reviewer: Department of Physics, Univ. of New Brunswick
- 2007-present Member, Review Committee for the Walter C. Sumner Memorial Fellowships
- 2003-present APICS Physics and Astronomy Committee: Chair (2007-9) and SMU rep. and Secretary (2005-7)
- 2006-present Member, Board of Directors - Discovery Center (Halifax)
- Discovery Awards Sub-Committee, Judging Chair (2009-)
- Sub-Committee on Programs and Exhibits (2006-9)
- 2004-2010 SMU Senate Committee on the Quality of Teaching (SMU), Member and Chair (2007-08, 09-10)
- 2007-present Departmental Undergraduate Advisor, 2007-8, 2009- (SMU)
- 2006-2008 Departmental Curriculum Committee (SMU), Member and Chair (2007-08)
- 2007-2009 Canadian Institute for Nuclear Physics (CINP): Founding Board Member (2007-08)
Membership Officer (2007-09)
- 2007 Chair, External Review Committee of Dept. of Modern Languages (SMU)
- 2006-2008 Departmental Undergraduate Laboratory Coordinator (SMU)
- 2007-2008 Member, Faculty of Science Curriculum Committee (SMU)
- 2006-2008 Member, Faculty of Graduate Studies Research Committee (SMU)
- 2007-2008 Member, Global Commons Steering Committee (SMU)
- 2003-2007 Atlantic Canada "Tour Coordinator" for CAP Lecture Tour
- 2001-2006 Member, SMU Senate Committee on Academic Planning (SMU)
- 2006 Chair, Departmental Faculty Search Committee (SMU)
- 2004 Vice-Coordinator of Departmental Undergrad Research Conference (SMU)
- 2004-2005 Faculty Advisor for AUPAC-05 (Undergraduate Conference) Planning (SMU)
- 2003-2005 Member, SMU Task Force on Community Outreach
- 2002-2004 Co-coordinator (with Ian Short) of Departmental Research Colloquium Series (SMU)
- 2001-2003 Member, New Science Facility Planning Committee (SMU)
- 2000-2003 Departmental "Publicity Liaison" (SMU)
- 2001-2002 Member, Departmental PhD Program Planning Committee (SMU)
- 1998-2000 Member, Undergraduate Affairs Committee (FSU)
- 1997-2000 Member, Saturday Morning Physics Organizing Committee (FSU)
- 1998-1999 Member, Chairman's Evaluation Committee (FSU)
- 1996-1998 Member, Graduate Proficiency Exam Committee (FSU)

Courses Taught

(All courses are 1 semester, with the exception of PHY230.0 and PHY205.0 and PHYS344(5,6).ZZ which are 2 semester; ending of “.1” means Fall semester, “.2” means Winter semester; “.1WW” means a web course.)

- 2010/11: PHYS1100.1 University Physics I (106 students), SMU
 PHYS1101.2 University Physics II (95 students), SMU
 PHYS6791.1 Graduate Directed Studies: Techniques for Subatomic Physics (2 students), SMU
- 2009/10: PHYS1100.1 University Physics I (124 students), SMU
 PHYS1101.2 University Physics II (91 students), SMU
 PHYS3500.1 Quantum Mechanics I (5 students), SMU
 PHYS1370.2 (cross-listed with PHIL 1255.2) Scientific Method (10 students), SMU
- 2007/08: PHYS1211.2 University Physics I (91 students), SMU
 PHYS1210.1 University Physics I (127 students), SMU
- 2006/07: PHYS1236.2 Physics for the Life Sciences II (32 students), SMU
 PHYS1235.1 Physics for the Life Sciences I (47 students), SMU
 PHYS3465.1 Quantum Physics I (10 students), SMU
 PHYS3445.ZZ Advanced Laboratory I (6 students), SMU
 PHYC 6141, Advanced Quantum Theory (1 student) - joint with M. Butler, Dalhousie
- 2005/06: PHYS1236.2 Physics for the Life Sciences II (48 students), SMU
 PHYS1235.1 Physics for the Life Sciences I (62 students), SMU
 PHYS3465.1 Quantum Physics I (11 students), SMU
 PHYS3446.ZZ Advanced Laboratory (10 students), SMU
 FRSC2201.1WW Basic Sciences Forensics II - 5 weeks (21 students), SMU
 PHYC 6601, Special Topics in Physics: Experimental Techniques in Subatomic Physics (2 students)
 - joint with M. Vetterli (SFU), Dalhousie
- 2004/05: PHY236.2 Physics for the Life Sciences II (52 students), SMU
 PHY306.2L Waves and Optics, Lab (14 students), SMU
 FOR201.2 Basic Sciences Forensics II - 5 weeks (13 students), SMU
 PHY235.1 Physics for the Life Sciences I (69 students), SMU
 PHY465.1 Quantum Physics I (13 students), SMU
 PHY355.1L Electricity and Magnetisim, Lab (10 students), SMU
- 2003/04: PHY236.2 Physics for the Life Sciences II (58 students), SMU
 PHY306.2L Waves and Optics, Lab (14 students), SMU
 FOR201.2 Basic Sciences Forensics II - 5 weeks (16 students), SMU
 PHY465.1 Quantum Physics I (13 students), SMU
 PHY235.1 Physics for the Life Sciences I (71 students), SMU
 PHY355.1L Electricity and Magnetisim, Lab (11 students), SMU
- 2002/03: PHY236.2 Physics for the Life Sciences II (52 students), SMU
 PHY306.2L Waves and Optics, Lab (16 students), SMU
 FOR201.2 Basic Sciences Forensics II - 5 weeks (15 students), SMU
 PHY211.2L University Physics II, Lab (2 sections, 9 and 18 students), SMU
 PHY235.1 Physics for the Life Sciences I (65 students), SMU
 PHY465.1 Quantum Physics I (2 students), SMU
 PHY355.1L Electricity and Magnetisim, Lab (16 students), SMU
 PHY210.1L University Physics I, Lab (2 sections, 18 and 21 students), SMU
- 2001/02: PHY236.2 Physics for the Life Sciences II (48 students), SMU
 PHY465.2 Quantum Physics I (9 students), SMU
 PHY306.2L Waves and Optics, Lab (5 students), SMU
 PHY211.1L University Physics II, Lab (2 sections, 18 and 20 students), SMU
 PHY235.1 Physics for the Life Sciences I (54 students), SMU
 PHY355.1L Electricity and Magnetisim, Lab (5 students), SMU
 PHY210.1L University Physics I, Lab (2 sections, 22 and 24 students), SMU
- 2000/01: PHY230.0 Physics for the Life Sciences (62 students), SMU
 PHY425.2 Quantum Physics (3 students), SMU
 PHY205.0L University Physics, Lab (2 sections, 20 students each), SMU
 PHY306.2L Waves and Optics, Lab (13 students), SMU
 PHY355.1L Electricity and Magnetisim, Lab (13 students), SMU
 AST695.1ZZ Graduate Seminar I (2 students), SMU

Courses Taught (continued)

- 1999/00: PHY2054 College Physics B (133 students), Florida State
PHY2054-Lab College Physics B, Lab (2 sections, 20 students each), Florida State
PHY6990 Graduate Nuclear Physics Seminar (5 students), Florida State
PHY2053 College Physics A (159 students), Florida State
PHY2053-Lab College Physics A, Lab (2 sections, 20 students each), Florida State
PHY6990 Graduate Nuclear Physics Seminar (7 students), Florida State
- 1998/99: PHY2054 College Physics B (104 students), Florida State
PHY2054-Lab College Physics B, Lab (2 sections, 20 students each), Florida State
PHY6990 Graduate Nuclear Physics Seminar (14 students), Florida State
PHY2053 College Physics A (129 students), Florida State
PHY2053-Lab College Physics A, Lab (2 sections, 20 students each), Florida State
PHY2053-Recitation College Physics A, Recitation (47 students), Florida State
PHY6990 Graduate Nuclear Physics Seminar (12 students), Florida State
- 1997/98: PHY2054-Recitation College Physics B, Recitation (2 sections, 56 students total), Florida State
PHY2054-Lab College Physics B, Lab (3 sections, 20 students each), Florida State
PHY6990 Graduate Nuclear Physics Seminar (16 students), Florida State
PHY2053-Recitation College Physics A, Recitation (2 sections, 64 students total), Florida State
PHY2053-Lab College Physics A, Lab (3 sections, 20 students each), Florida State
PHY6990 Graduate Nuclear Physics Seminar (14 students), Florida State
- 1996/97: PHY2054-Recitation College Physics B, Recitation (2 sections, 59 students total), Florida State
PHY2054-Lab College Physics B, Lab (3 sections, 20 students each), Florida State
PHY2053-Recitation College Physics A, Recitation (2 sections, 69 students total), Florida State
PHY2053-Lab College Physics A, Lab (3 sections, 20 students each), Florida State
- 1995/96: PHY2054-Recitation College Physics B, Recitation (2 sections, 44 students total), Florida State
PHY2054-Lab College Physics B, Lab (3 sections, 20 students each), Florida State

Postdoctoral Research Fellows Supervised

1998-2000 Dr. David Meekins (Florida State)

Graduate Students Supervised

- 2010-(2014): Cristina Collicott (Ph.D. program at Dalhousie University, began Sept. 2010)
Thesis Topic: *Precision Polarization Measurements in Gamma-Ray studies of the Proton at MAMI*
- 2008-(2012): David Anez (Ph.D. program at Dalhousie University), began Sept. 2008
Thesis Topic: *Measurement of the Coulomb Quadrupole amplitude in the $\gamma p \rightarrow \Delta(1232)$ reaction in the low momentum transfer region*
- 2010-(2012): Jason Sharpe (Applied Science MSc program at SMU), began Jan. 2010
Thesis Topic: *Prototype development for a Scintillating Fiber Tracking Detector for use at Jefferson Lab's Hall A*
- 2005-2009: Jackie Glistler (Ph.D. at Dalhousie University), dissertation defended in Dec. 2009
(scholarship student: NSERC CGS-M, PGS-D, Killam, Sumner)
Thesis Title: *Polarization Observables in Low Energy Deuteron Photodisintegration*
- 1997-2003: Rikki Roche (Ph.D. at Florida State University), dissertation defended in April 2003
Thesis Title: *Measurement of Polarization Observables in the Electro-excitation of the Proton to its First Excited State*
- 1997-2001: Adam Dooley (Ph.D. at Florida State University), dissertation defended in August 2001
Thesis Title: *High-Resolution Study of the $^3\text{He}(e,ep)$ Reaction in the Quasielastic Region*

Undergraduate Honour's Theses Supervised (2000-present)

- 2009/10: Cristina Collicott, Saint Mary's B.Sc. Honour's Thesis (May 2010); **Thesis Topic:** *Simulations of Improved Trigger Logic for CB-TAPS experiments at MAMI*
- 2009/10: Ashley Campbell, Saint Mary's B.Sc. Honour's Thesis (May 2010); **Thesis Topic:** *Simulations of Scintillating Fiber Tracking Detector to study Resolutions*
- 2008/09: Gail MacInnis, Saint Mary's B.Sc. Honour's Thesis (May 2009); **Thesis Title:** *Feasibility Study of an improved compass for polarized target experiemnts at JLab*
- 2006/07: Emily McCullough, Saint Mary's B.Sc. Honour's Thesis (May 2007); **Thesis Title:** *Upgrading the Electron Beam Current Monitor System at Jefferson Lab's Hall A*
- 2006/07: Mehran Saadat joint supervision with Dr. Kevin Hewitt (primary advisor), Dalhousie Physics; **Thesis Title:** *Deposition and Characterization of a Superconductor Composition Spread Library: $La_{2-x}Sr_xCuO_4$ ($0 < x < 0.16$) with $\Delta x = 0.0033$*
- 2004/05: Brynle Barrett, Saint Mary's B.Sc. Honour's Thesis (May 2005); **Thesis Title:** *Analysis of Space Charge and Dead Zone effects in the TWIST Spectrometer*
- 2004/05: Jackie Glistler, Saint Mary's B.Sc. Honour's Thesis (May 2005); **Thesis Title:** *Novel Light Guide for Scintillation Counters in Hall A of Jefferson Lab*
- 2002/03: Frank Berghaus, Saint Mary's B.Sc. Honour's Thesis (Aug. 2003); **Thesis Title:** *Efficiency Analysis of the High Resolution Spectrometers at Hall A of the Jefferson Lab*
- 2002/03: Joshua Bray, Saint Mary's B.Sc. Honour's Thesis (April 2003); **Thesis Title:** *Interactive-Engagement Physics-Teaching Methods: An Evaluation and Inventory*

Undergraduate Student Research Assistants Supervised (2000-present)

Jessica Campbell	2011	(NSERC USRA Award) Research and Development for Scintillating Fiber Coordinate Detector
Rebecca Campbell	2011	Experiment Support for A2 Experiments at MAMI: Development of Yield Rate macro
Ashley Campbell	2011	Research and Development for Scintillating Fiber Coordinate Detector
	2009	Simulation of Resolution Capabilities of a Scintillating Fiber Tracking Detector
Cristinia Collicott	2009	Simulation of new Triggering Logic for the CB-TAPS at MAMI
	2008	Establishment of a CAMAC-based Data-acquisition system for detector lab use
Jason Sharpe	2009	Investigations of Scintillating Fiber Detector design and construction
Gail MacInnis	2009	Investigations of Scintillating Fiber Detector design and construction
	2008	Feasibility of using a rotating coil magnetometer as a new polarized target compass
	2007	Educational Initiatives (Mini-U) and Jefferson Lab detector development
Emily McCullough	2007	Experiment Simulation/Design, and Experiment Support
	2006	LEDEX experiment at Jefferson Lab (equipment development & running)
Jackie Glistler	2005	Experiment Simulation and Design (optimizing Roper Resonance proposal)
	2004	(NSERC USRA award) Design and Computer Simulation of New Light Guides for Hall A Scintillation Counters
Jennifer Throop	2004	(joint supervision with Dr. R.J. Konopasky, Psychology Dept.) Investigations of Effectiveness of Wireless Responders in Lectures
Joshua Bray	2004	Computer simulations of ElectroNuclear Physics Experiments
	2003	Mini-University Physics and other Educational Initiatives
	2002	OnLine Resource Tool for Physics-Concept Demonstrations
	2001	Educational Initiatives in Physics: Mini-U and Physics Concept Questions
Brynle Barrett	2003	(NSERC USRA award) Radiation Detector development and experiment support
Frank Berghaus	2003	Analysis of Detector Efficiencies and Responses for Hall A
	2001	(NSERC USRA award) Analysis of the Hyper-White Spectrometer Efficiency Data for Hall A at Jefferson Lab
Joshua Hone	2000	Programming a Monte Carlo Simulation for Nuclear Reactions

Selected Conferences and Meetings Organised

- 1. 2008 A Regional Symposium on “best-practice use” of Clickers in University Classrooms: “Clicker Talk: Engaging Students?”** (*Organizer/Chair*), regional higher-education symposium (approx 60 attendees), April 2008, SMU. *SUPPORTED BY:* SMU CAID, eInstruction, Pearson Education.
- 2. 2006 Gordon Research Conference (GRC) on Photonuclear Reactions** (*Chair*), international nuclear physics conference (94 attendees), August 2006 at Tilton School, Tilton, NH, USA. *SUPPORTED BY:* USA National Science Foundation (NSF), Jefferson Lab, SMU, Ohio State Univ., Univ. of Bonn, Mainz Univ., MIT-Bates Linear Accelerator Center, GRC.
- 3. 2005 APICS Undergraduate Physics and Astronomy Conference** (*Faculty Advisor*), Atlantic Canada regional undergraduate conference (120 attendees), February 2005, SMU.
- 4. 2004 Gordon Research Conference (GRC) on Photonuclear Reactions** (*Vice-Chair*), international nuclear physics conference (110 attendees), August 2004 at Tilton School, Tilton, NH, USA. *SUPPORTED BY:* USA National Science Foundation (NSF), Jefferson Lab, SMU, Ohio Univ., MIT-Bates Linear Accelerator Center, GRC.
- 5. 2nd Workshop on Electromagnetic Nuclear Reactions at Low Momentum Transfer** (*the “LOWq-03 Workshop”*) - (*Co-Chair, Organizer/Host*), international nuclear physics workshop (60 attendees), July 2003, at SMU. *SUPPORTED BY:* Triangle Universities Nuclear Laboratory (Duke University), MIT-Bates Linear Accelerator Center, SMU.
- 6. Workshop on Electromagnetic Nuclear Reactions at Low Momentum Transfer** (*the “LOWq Workshop”*) - (*Co-Chair, Organizer/Host*), international nuclear physics workshop (65 participants from 8 countries), August 2001, at SMU. *SUPPORTED BY:* MIT-Bates Linear Accelerator Center, SMU.
- 7. Mini-Symposium on CAPA: A Web-Based Package for Individualized Student Assignments** (*Chair/Organizer*), regional 3-hour workshop (25 attendees from SMU, Dalhousie, Acadia, UPEI, and MUN), July 2001, at SMU. *SUPPORTED BY:* SMU Office of Instructional Development.

Other Professional Activities (Administrative, Outreach, etc.)

Chair/Vice-Chair	(elected) Division of Physics Education, Can. Assoc. of Physicists (2011-13/09-11)
Judge	(invited) Nova Scotia Grade 5 Science Film Festival (2004-2011)
Judge	(invited) Atlantic Canada Playoffs of The Iron Science science-teaching challenge (2009, Halifax)
Member	(elected) Jefferson Lab Hall A Collaboration “CC”, Coordinating Committee (2000-2002)
Chair	(appointed) Jefferson Laboratory Hall A Collaboration Coordinating Committee (2001-2002)
Editor	Jefferson Lab Annual Status Report for Hall A (2000, 2001)
Coordinator	the OOPS Collaboration at the MIT-Bates Linear Accelerator Center (1998-1999)
Vice Pres.	(elected) the MIT-Bates Linear Accelerator User Group, Inc. (1997-2000)
Co-Convenor	(appointed) Nucleon-Structure Working Group for Hall A at Jefferson Laboratory (1997-2000)
Reviewer	Grant proposals to the DOE and NSF (USA); CFI (Canada); APS Journals PRL, PRC; Physics in Canada; European Physics Jour.; Can. Jour. of SoTL
Presenter	<i>Outreach Physics “Shows”/Workshops:</i> 103 presentations from Dec. 2000 - Sept. 2011: for schools, community events, daycares, regional TV, libraries, etc. (55 presentations in K-12 schools; 31 presentations done on campus; 17 presentations for community).

- 54.** *Polarization observables in deuteron photodisintegration below 360 MeV*,
J. Glister, G. Ron, B.W. Lee, R. Gilman, A.J. Sarty, S. Strauch, D.W. Higinbotham, E. Piassetzky, K. Allada, ... (91 authors, Jefferson Lab Hall A LEDEX Collaboration),
Physics Letters **B 697**, 194-198, 5 pages (7 March 2011).
- 53.** *Precise Extraction of the Induced Polarization in the $^4\text{He}(e, e'\bar{p})^3\text{H}$ Reaction*,
M. Paolone, S.P. Malace, S. Strauch, I. Albayrak ... , A.J. Sarty, ... (58 authors, Jefferson Lab Hall A E03-104 Collaboration),
Physical Review Letters **106**, 052501, 5 pages (31 January 2011).
- 52.** *Polarization Transfer in the $^4\text{He}(\bar{e}, e'\bar{p})^3\text{H}$ Reaction at $Q^2=0.8$ and 1.3 (GeV/c) 2* ,
M. Paolone, S.P. Malace, S. Strauch, I. Albayrak ... , A.J. Sarty, ... (58 authors, Jefferson Lab Hall A E03-104 Collaboration),
Physical Review Letters **105**, 072001, 5 pages (12 August 2010).
- 51.** *Cross sections and Rosenbluth separation in $^1\text{H}(e, e'K^+)\Lambda$ up to $Q^2=2.35$ GeV 2* ,
M. Coman , P. Markowitz, K. Aniol, ... , A.J. Sarty, ... (86 authors, Jefferson Lab Hall A Collaboration),
Physical Review **C 81**, 052201(R), 5 pages (24 May 2010).
- 50.** *High Resolution Spectroscopy of $^{16}_{\Lambda}\text{N}$ by Electroproduction*,
F. Cusanno, G.M. Urciuoli, A. Acha, ... , A.J. Sarty, ... (99 authors, Jefferson Lab Hall A Collaboration),
Physical Review Letters **103**, 202501, 5 pages (9 Nov. 2009).
- 49.** *Proton polarimeter calibration between 82 and 217 MeV*,
J. Glister, G. Ron, B. Lee, ... , A.J. Sarty, ... (22 authors, Jefferson Lab LEDEX Collaboration),
Nuclear Instruments and Methods in Physics Research **A606**, pages 578-584 (21 July 2009).
- 48.** *Virtual Compton scattering and neutral pion electroproduction in the resonance region up to the deep inelastic region at backward angles*,
G. Laveissiere, ... , A.J. Sarty, ... (164 authors, Jefferson Lab Hall A Collaboration),
Physical Review **C79**, 015201, 18 pages (6 January 2009).
- 47.** *The proton elastic form factor ratio $\mu_p G_E^p/G_M^p$ at low momentum transfer*,
G. Ron, J. Glister, B. Lee, K. Allada, ... , A.J. Sarty, ... (89 authors, Jefferson Lab Hall A Collaboration),
Physical Review Letters **99**, 202002, 5 pages (November 2007).
- 46.** *High Resolution Spectroscopy of $^{12}_{\Lambda}\text{B}$ by Electroproduction*,
M. Iodice, F. Cusanno, A. Acha, ... , A.J. Sarty, ... (101 authors, Jefferson Lab Hall A Collaboration),
Physical Review **C75**, 055208, 5 pages (25 May 2007).
- 45.** *Search for Σ_5^0, N_5^0 , and Θ^{++} pentaquark states*,
Y. Qiang, ... , A.J. Sarty, ... (53 authors, Jefferson Lab Hall A Collaboration),
Physical Review **C75**, 055208, 5 pages (25 May 2007).
- 44.** *Recoil polarization measurements for neutral pion electroproduction at $Q^2 = 1$ (GeV/c) 2 near the Δ resonance*,
J.J. Kelly, O. Gayou, R.E. Roche, Z. Chai, M.K. Jones, A.J. Sarty, S. Frullani, K. Aniol et al. (83 authors, Jefferson Lab E91011 and Hall A Collaborations),
Physical Review **C75**, 025201, 33 pages (12 Feb. 2007).
- 43.** *Measurements of the Generalized Electric and Magnetic Polarizabilities of the Proton at Low Q^2 Using the Virtual-Compton-Scattering Reaction*,
P. Bourgeois et al. (37 authors, MIT-Bates OOPS Collaboration),
Physical Review Letters **97**, 212001, 4 pages (21 Nov. 2006).
- 42.** *Determination of the Pion Charge Form Factor at $Q^2 = 1.60$ and 2.45 (GeV/c) 2* ,
T. Horn, ... , A. Sarty, ... (53 authors, Jefferson Lab F_π Collaboration),
Physical Review Letters **97**, 192001, 4 pages (6 Nov. 2006).
- 41.** *Design Study of Novel Light Guide Geometry for Scintillation Counters*,
Jackie Glister and Adam J. Sarty,
Proceedings of the Nova Scotian Institute of Science, **Vol. 43, Part 2**, pp. 227-234 (August 2006).

- 40.** *Recoil Polarization for Δ Excitation in Pion Electroproduction*, J.J. Kelly, R.E. Roche, Z. Chai, M.K. Jones, O. Gayou, A.J. Sarty, S. Frullani, K. Aniol et al. (83 authors, Jefferson Lab E91011 and Hall A Collaborations), Physical Review Letters **95**, 102001, 6 pages, (2 Sept. 2005).
- 39.** *Proton elastic form factor ratios to $Q^2 = 3.5 \text{ GeV}^2$ by polarization transfer*, V. Punjabi, ... , A.J. Sarty, ... (110 authors, the Jefferson Lab Hall A Collaboration), Physical Review **C71**, 055202, 27 pages (2005).
- 38.** *Precision Rosenbluth Measurement of the Proton Elastic Form Factors*, I.A. Qattan, J. Arrington, ... , A. Sarty, ... (52 authors, Jefferson Lab Experiment E01-001 Collaboration), Physical Review Letters **94**, 142301, 5 pages, (2005).
- 37.** *Investigation of the Conjectured Nucleon Deformation at Low Momentum Transfer*, N.F. Sparveris, ... , A.J. Sarty, ... (37 authors, the MIT-Bates Out-of-Plane Spectrometer Collaboration), Physical Review Letters **94**, 022003, 5 pages (2005).
- 36.** *Measurement of R_{LT} and A_{LT} in the ${}^4\text{He}(e, e'p){}^3\text{H}$ reaction at p_{miss} of 130-300 MeV/c*, K.A. Aniol, ... , A.J. Sarty, ... (45 authors, the MAMI A1 Collaboration), European Physics Journal **A22**, pp 449-454, (2004).
- 35.** *Measurement of the Generalized Polarizabilities of the Proton in Virtual Compton Scattering at $Q^2 = 0.92$ and 1.76 GeV^2* , G. Laveissiere, L. Todor, ... , A.J. Sarty, ... (165 authors, Jefferson Lab Hall A Collaboration), Physical Review Letters **93**, 122001, 5 pages (14 Sept. 2004).
- 34.** *Dynamics of the quasielastic ${}^{16}\text{O}(e, e'p)$ reaction at $Q^2 \approx 0.8 (\text{GeV}/c)^2$* , K.G. Fissum, M. Liang, ... , A.J. Sarty, ... (139 authors, Jefferson Lab Hall A Collaboration), Physical Review **C70**, 034606 (20 September 2004) (30 pages).
- 33.** *A Measurement of the Exclusive ${}^3\text{He}(e, e'p)$ Reaction Below the Quasi-Elastic Peak*, A. Kozlov, A.J. Sarty, K.A. Aniol, et al. (49 authors, the MAMI A1 Collaboration), Physical Review Letters **93**, 132301, 5 pages (September 2004).
- 32.** *Measurements of electron-proton elastic cross sections for $0.4 < Q^2 < 5.5 (\text{GeV}/c)^2$* , M.E. Christy, ... , A.J. Sarty, ... (82 authors, the Jefferson Lab Hall C E94110 Collaboration), Physical Review **C70**, 015206, 15 pages (21 July 2004).
- 31.** *Basic Instrumentation for Hall A at Jefferson Lab*, J. Alcorn, ... , A.J. Sarty, ... (237 authors, Jefferson Lab Hall A Collaboration), Nuclear Instruments and Methods in Physics Research **A522**, pages 294-346 (2004).
- 30.** *Backward electroproduction of π^0 mesons on protons in the region of nucleon resonances at four momentum transfer squared $Q^2 = 1.0 \text{ GeV}^2$* , G. Laveissiere, ... , A.J. Sarty, ... (164 authors, Jefferson Lab Hall A Collaboration), Physical Review **C69**, 045203, 15 pages (28 April 2004).
- 29.** *Polarization Transfer in the ${}^4\text{He}(\vec{e}, e'\vec{p}){}^3\text{H}$ Reaction up to $Q^2 = 2.6(\text{GeV}/c)^2$* , S. Strauch, S. Dieterich, ... , A. Sarty, ... (72 authors, Jefferson Lab Hall A Collaboration), Physical Review Letters, 052301, 5 pages (1 August 2003).
- 28.** *Measurement of the R_{LT} response function for π^0 electroproduction at $Q^2 = 0.070(\text{GeV}/c)^2$ in the $N \rightarrow \Delta$ transition*, N.F. Sparveris, ... , A.J. Sarty, ... (48 authors, MIT-Bates Out-of-Plane Spectrometer Collaboration), Physical Review **C67**, 058201, 4 pages (14 May 2003).
- 27.** *Nuclear transparency from quasielastic $A(e, e'p)$ up to $Q^2 = 8.1 (\text{GeV}/c)^2$* , K. Garrow, ... , A.J. Sarty, ... (83 authors, Jefferson Lab Hall C E94-139 Collaboration), Physical Review **C66**, 044613, 10 pages (25 October 2002).
- 26.** *High energy angular distribution measurements of the exclusive deuteron photodisintegration reaction*, E.C. Schulte, ... , A. Sarty, ... (79 authors, Jefferson Lab Hall C E99-008 Collaboration), Physical Review **C66**, 042201(R), 5 pages (17 October 2002).
- 25.** *Polarization measurements in neutral pion photoproduction*, K. Wijesooriya, ... , A.J. Sarty, ... (78 authors, the Jefferson Lab Hall A Collaboration), Physical Review **C66**, 034614, 14 pages (26 September 2002).
- 24.** *Relativistic Effects and Two-Body Currents in the ${}^2\text{H}(\vec{e}, e'p)n$ Reaction*, Z.-L. Zhou, ... , A.J. Sarty, ... (47 authors, MIT-Bates OOPS Collaboration), Physical Review Letters **87**, 172301, 4 pages (22 October 2001).
- 23.** *Performance of a Compact Detector Package for the Out-of-Plane Spectrometer System*, Z.-L. Zhou, S. Sirca, W. Boeglin, A.J. Sarty, R. Alarcon, ... (68 authors, MIT-Bates OOPS Collaboration), Nuclear Instruments and Methods in Physics Research **A 487**, pages 365-380 (2002).

22. *Measurements of the Elastic Electromagnetic Form Factor Ratio G_{E_p}/G_{M_p} via Polarization Transfer*, O. Gayou, ... , A.J. Sarty, ... (78 authors, the Jefferson Lab Hall A Collaboration), Physical Review **C64**, 038202, 4 pages (21 August 2001).
21. *Measurement of the high energy two-body deuteron photodisintegration differential cross section*, E.C. Schulte, ... , A.J. Sarty, ... (90 authors, Jefferson Lab Hall C E96-003 Collaboration), Physical Review Letters **87**, 102302, 4 pages (16 August 2001).
20. *Dynamics of the $^{16}\text{O}(e, e'p)$ Reaction at High Missing Energies*, N. Liyanage, ... , A.J. Sarty, ... (140 authors, the Jefferson Lab Hall A Collaboration), Physical Review Letters **86**, 5670-5674 (2001).
19. *Polarization Measurements in High-Energy Deuteron Photodisintegration*, K. Wijesooriya, ... , A.J. Sarty, ... (78 authors, the Jefferson Lab Hall A Collaboration), Physical Review Letters **86**, 2975-2979 (2001).
18. *Search for Quadrupole Strength in the Electro-excitation of the $\Delta^+(1232)$* , C. Mertz, ... , A.J. Sarty, ... (43 authors, the MIT-Bates OOPS and FPP Collaborations), Physical Review Letters **86**, 2963-2966 (2001).
17. *Polarization transfer in the $^{16}\text{O}(\vec{e}, e'\vec{p})^{15}\text{N}$ reaction*, S. Malov, ... , A.J. Sarty, ... (148 authors, the Jefferson Lab Hall A Collaboration), Physical Review **C62**, 057302, 5 pages (2000).
16. *Dynamical Relativistic Effects in Quasielastic $1p$ -Shell Proton Knockout from ^{16}O* , J. Gao, ... , A.J. Sarty, ... (135 authors, the Jefferson Lab Hall A Collaboration), Physical Review Letters **84**, 3265-3269 (2000).
15. *G_{E_p}/G_{M_p} ratio by Polarization Transfer in $\vec{e}p \rightarrow e\vec{p}$* , M.K. Jones, ... , A.J. Sarty, ... (108 authors, the Jefferson Lab Hall A Collaboration), Physical Review Letters **84**, 1398-1402 (2000).
14. *The Radiation Tail in $(e, e'p)$ Reactions and Corrections to Experimental Data*, J.A. Templon, C.E. Vellidis, R.E.J. Florizone, and A.J. Sarty, Physical Review **C61**, 014607, 14 pages (2000).
13. *The Bremsstrahlung Tagged Photon Beam in Hall B at The Jefferson Laboratory*, D.I. Sober, ... , and A.J. Sarty (26 authors, the Hall B Photon Tagger Collaboration), Nuclear Instruments and Methods in Physics Research **A440**, 263-284 (2000).
12. *Lessons to be learned from the coherent photoproduction of pseudoscalar mesons*, L.J. Abu-Raddad, J. Piekarewicz, A.J. Sarty, and R.A. Rego, Physical Review **C60**, 054606, 11 pages (1999).
11. *Measurement of Recoil Polarizations in the Electrodissintegration of Deuterium by Polarized Electrons*, D.H. Barkhuff, ... , A.J. Sarty, ... (39 authors, the MIT-Bates FPP Collaboration), Physics Letters **B470**, 39-42 (1999).
10. *High-Precision Studies of the $^3\text{He}(e, e'p)$ Reaction at the Quasielastic Peak*, R.E.J. Florizone, ... , A.J. Sarty, ... (41 authors, MAMI A1 and USA-Helium Collaborations), Physical Review Letters **83**, 2308-2311 (1999).
9. *Measurements of the Deuteron Elastic Structure Function $A(Q^2)$ for $0.7 < Q^2 < 6.0(\text{GeV}/c)^2$ at Jefferson Laboratory*, L.C. Alexa, ... , A.J. Sarty, ... (143 authors, the Jefferson Lab Hall A Collaboration), Physical Review Letters **82**, 1374-1378 (1999).
8. *Induced photon polarization for π^0 Electroproduction at $Q^2 = 0.126 \text{ GeV}^2/c^2$ around the $\Delta(1232)$ Resonance*, G.A. Warren, ... , A.J. Sarty, ... (55 authors, the MIT-Bates FPP and OOPS Collaborations), Physical Review **C58**, 3722-3725 (1998).
7. *Measurement of the Interference Structure Function R_{LT} for the $^{12}\text{C}(e, e'p)$ Reaction in the Quasielastic Region*, M. Holtrop, ... , A.J. Sarty, ... (37 authors, the OOPS Collaboration), Physical Review **C58**, 3205-3211 (1998).
6. *Nuclear Dependence of the Coherent η Photoproduction Reaction in a Relativistic Approach*, L.J. Abu-Raddad, J. Piekarewicz, A.J. Sarty, and M. Benmerrouche, Physical Review **C57**, 2053-2056 (1998).
5. *A Comparison of Polarization Observables in Electron Scattering from the Proton and Deuteron*, B.D. Milbrath, ... , A.J. Sarty, ... (36 authors, the MIT-Bates FPP Collaboration), Physical Review Letters **80**, 452-459 (1998).
4. *Measurement of the Induced Proton Polarization P_n in the $^{12}\text{C}(e, e'p)$ Reaction*, R.J. Woo, ... , A.J. Sarty, ... (35 authors, the MIT-Bates FPP Collaboration), Physical Review Letters **80**, 456-459 (1998).
3. *Coherent η photoproduction from nuclei in a relativistic impulse approximation approach*, J. Piekarewicz, A.J. Sarty, and M. Benmerrouche, Physical Review **C55**, 2571-2576 (1997).
2. *A Measurement of the Longitudinal, Transverse, and Longitudinal-Transverse Responses in the $d(e, e'p)n$ Reaction*, D. Jordan, ... , A.J. Sarty, ... (37 authors, the OOPS Collaboration), Physical Review Letters **76**, 1579-1582 (1996).
1. *A Measurement of the reaction $^3\text{He}(\gamma, pp)n$ and its Relation to Three-Body Forces*, A.J. Sarty et al. (12 authors, Sask. Accel. Lab), Physical Review **C47**, 459-467 (1993).

1. *Personal Responders: An Evaluation of an Interactive-Engagement Physics-Teaching Method*, J.M. Bray and A.J. Sarty, Canadian Undergraduate Physics Journal, Volume II, Issue 3, pages 7-10 (April 2004).

Other Publications:

A. Conference Proceedings for Invited Talks Given (Nuclear Physics Research)

6. *Recoil Polarization Measurements in π^0 Electroproduction at the Peak of the $\Delta(1232)$* , A.J. Sarty (for the Jefferson Lab Hall A Collaboration), Proc. of the NSTAR2001 Conference “Workshop on The Physics of Excited Nucleons”, D. Drechsel and L. Tiator (editors), World Scientific (Singapore), 43-50 (December 2001).
5. *Polarization and Out-of-Plane Responses in Pion (and Eta) Electroproduction*, A.J. Sarty *et al.*, Proc. of the NSTAR2000 Conference “Excited Nucleons and Hadronic Structure”, V.D. Burkert, L. Elouadrhiri, J.J. Kelly and R.C. Minehart (editors), World Scientific (Singapore), 326-335 (April 2001).
4. *Multinucleon Processes in $(e,e'p)$: Status and Future of Searches at High Missing Energy*, A.J. Sarty *et al.* (the MAMI A1 and USA-Helium Collaborations), Proc. of the Second Workshop on Electronuclear Physics with Internal Targets and the Bates Large Acceptance Spectrometer Toroid (BLAST), R. Alarcon and R. Milner (editors), World Scientific (Singapore), 326-340 (1999).
3. *The Out-of-Plane Electron Scattering Program at the MIT-Bates Accelerator*, A.J. Sarty, AIP Conference Proc. **392**: Applications of Accelerators in Research and Industry, J.L. Duggan and I.L. Morgan (editors), A.I.P. Press, 1047-1050 (1997).
2. *Out-of-plane Measurements at the MIT-Bates Linear Accelerator Laboratory*, A.J. Sarty, Proc. of the Second Workshop on Electromagnetically Induced Two-Nucleon Emission, Ryckebusch and Waroquier (editors), University of Gent, Belgium, 287-292 (1995).
1. *Three-body force effects in the reaction ${}^3\text{He}(\gamma, pp)n$* , A.J. Sarty, Proc. of the XIII International Conference on Few Body Problems in Physics, Nuclear Physics **A543**, 49c (1992).

Other Publications:

B. Other Conference Proceedings (Nuclear Physics Research)

4. *Recent Results on ${}^2\text{H}(e,e'p)$ from Bates using the Out-of-Plane Spectrometers*, Z.-L. Zhou, ... , A.J. Sarty, ... (46 authors, the MIT-Bates OOPS Collaboration), Proc. of the Second Workshop on Electronuclear Physics with Internal Targets and the Bates Large Acceptance Spectrometer Toroid (BLAST), R. Alarcon and R. Milner (editors), World Scientific (Singapore), 278-292 (1999).
3. *Coherent Photoproduction of Pseudoscalar Mesons in a Relativistic Framework*, J. Piekarewicz, L.J. Abu-Raddad, M. Benmerrouche, and A.J. Sarty, Proc. of the Jefferson Lab Workshop on “Physics and Instrumentation with 6-12 GeV Beams”; S. Dytman, H. Fenker and P. Ross (editors); Thomas Jefferson National Accelerator Facility, 4 pages (1998).
2. *$d(e,e'p)$ Longitudinal-Transverse Separation*, D. Jordan, ... , A.J. Sarty, ... (22 authors, the MIT-Bates OOPS Collaboration), A.I.P. Conference Proc. **334**: Few-Body Problems in Physics, F. Gross (editor), Williamsburg, VA. 4 pages (1994).
1. *Physics With the Saskatchewan-Alberta Large Acceptance Detector*, L.G. Greeniaus, ... , A.J. Sarty, ... (24 authors, Sask. Accel. Lab), Proceedings of the First Workshop on Electronuclear Physics with Internal Targets and the Bates Large Acceptance Spectrometer Toroid (BLAST), R. Alarcon and M. Butler (editors), World Scientific (Singapore) (1992).

5. *Student Engagement: Creative Intersections, Part I - Technology Up Front*, Proceedings of the 2008 AAU Atlantic Universities' Teaching Showcase (Volume XII, ISSN 1490-4861); S. Bell, L. Best, D. Creelman, K. Craft, D. Roach, and D. Ross (editors); pages 7-16 (2009).
4. *The Importance of Good Teaching - and the Conflict it Reveals*, Award Winners speeches brochure - AAU Teaching Awards 2008, Atlantic Association of Universities (www.atlanticuniversities.ca → Faculty Development Committee → AAU Teaching Awards → Award Winners Speeches), pages 5-7 (2008).
3. "Clickers" in SMU's Classrooms - Getting the most out of this new Educational Technology, Teaching and Learning at Saint Mary's, November 2007 (Saint Mary's University); page 6.
2. *The New SMU Physics-Demonstration Web Site: Videos, CD's, Outreach and more*, Teaching and Learning at Saint Mary's, Volume 13, Number 2, Winter/Spring 2003 (Saint Mary's University); pages 4-5.
1. *Mini-Symposium on CAPA: A Web-Based Package for Individualized Student Assignments*, Teaching and Learning at Saint Mary's, Volume III, Number 1, Fall 2001 (Saint Mary's University); page 9.

Selected Invited Talks and Seminars (Nuclear Physics Research), 1995-present

26. *Transition Form-Factors from Pion ElectroProduction: Recoil Polarization Techniques*, invited talk to the 26th Students' Workshop on Electromagnetic Interactions; Bosen (Saar), Germany (September 2009).
25. *New Polarization Measurements in Deuteron Photodisintegration in the 275-360 MeV Energy Range*, contributed talk to the 19th International IUPAP Conference on Few-Body Problems in Physics; Bonn, Germany (September 2009).
24. *Upcoming Proton Form Factor Ratio Measurements at Extreme Momentum Transfers: from 0.015 to 15.0 GeV²*, contributed talk to the Annual Congress of the Canadian Association of Physicists, Division of Nuclear Physics; Quebec City, PQ (June 2008).
23. *From Code-Writer to Model-Builder to Error-Finder: A Reflection on the Many Contributions of Jim Kelly to Nuclear Physics*, invited colloquium, Jefferson Laboratory, Newport News, VA, USA (June 2007).
22. *New Polarization Measurements in Low-Energy Deuteron Photodisintegration*, contributed talk to the Annual Congress of the Canadian Association of Physicists, Division of Nuclear Physics; Saskatoon, Sk (June 2007).
21. *Recoil Polarization Observables*, invited presentation to the MIT Hadron Deformation Workshop; Massachusetts Institute of Technology, Cambridge, MA, USA (6-8 August 2004).
20. *Polarization Observables*, presentation to the 2004 Jefferson Laboratory User's Workshop on "The Next Seven Years" (as part of the "Excited Hadrons" session), Jefferson Lab, Newport News, VA (16-18 June 2004).
19. *Overview of the LOWq Workshop*, opening talk for the *2nd Workshop on Electromagnetic Nuclear Reactions at Low Momentum Transfer* – an international nuclear physics workshop held/hosted at Saint Mary's University, Halifax, NS (July 2003).
18. *Measuring the Shape of the Proton - more than just a sphere*, invited colloquium given 5 times in 2002-2003:
 - (i) Mount Allison University Physics Department, Sackville, NB (3 November 2003);
 - (ii) the Atlantic Undergraduate Physics and Astronomy Conference (AUPAC), Saint F.X. University, Antigonish (Feb. 2003);
 - (iii) Dalhousie University Physics Department, Halifax, NS (14 November 2002);
 - (iv) University of Manitoba Physics Department, Winnipeg, MB (18 October 2002);
 - (v) the Tri-University Meson Facility (TRIUMF) at the University of British Columbia, Vancouver, BC (17 October 2002).
17. *Deformation in the Proton → Δ Transition via Pion Electroproduction*, invited talk given during the 2002 Annual Congress of the Canadian Association of Physicists, within the Division of Nuclear Physics' session on *Nucleon Properties*, Quebec City, PQ (2 June 2002).
16. *Probing the N → Δ Transition via Measurements of the Polarization Responses in the p($\vec{e}, e'\vec{p}$)π⁰ Reaction*, contributed talk given during the Mini-Symposium on *Hadronic Structure with Spin Degrees of Freedom* at the annual April Meeting of the American Physical Society, Albuquerque, NM, USA (21 April 2002).
15. *Overview of the LOWq Workshop*, opening talk for the *Workshop on Electromagnetic Nuclear Reactions at Low Momentum Transfer*, Saint Mary's University, Halifax, NS (23 August 2001).

14. *Recoil Polarization Measurements in π^0 Electroproduction at the Peak of the $\Delta(1232)$* , invited talk given at the international nuclear physics conference *NSTAR 2001 - The Physics of Excited Nucleons*, Johannes Gutenberg-Universitaet, Mainz, Germany (7 March 2001).
13. *Detailed Studies of N^* Transitions using Recoil Polarization in Hall A*, presentation to the United States Town Meeting on Electromagnetic and Hadronic Physics, Jefferson Lab, Newport News, VA, USA (1-4 December 2000).
12. *Probing the Currents inside Light Nuclei*, invited Colloquium for the Department of Astronomy & Physics at Saint Mary's University, Halifax, NS (Feb 2000).
11. *Polarization and Out-of-Plane Responses in Pion Electroproduction*, invited talk given at the international nuclear physics conference *NSTAR 2000 - The Physics of Excited Nucleons*, Thomas Jefferson National Accelerator Facility, Newport News, VA, USA (Feb 2000).
10. *Isolated Responses of the Deuteron*, invited talk to the European Research Conference on Electromagnetic Interactions with Hadrons and Nuclei, Santorini, Greece (Oct 1999).
9. *Radiative Corrections to $(e, e'p)$* , invited talk to the Radiative Corrections Workshop at the 1999 Jefferson Lab User Group Annual Meeting & Workshop (talk shared with J.A. Templon), Newport News, VA (June 1999).
8. *Shedding New Light on the Nucleus using Electron Scattering*, invited Physics Department Colloquium at Duke University, Durham, NC (March 1999).
7. *Probing the Nucleon and the Nucleus through η -meson Production*, invited talk to the Hadron Structure Workshop at the 1998 South-Eastern Section of the American Physical Society, Miami, FL (November 1998).
6. *Physics of the η Electroproduction Response Functions*, invited talk to the Jefferson Laboratory Annual User Group Workshop, Jefferson Lab, Newport News, VA (June 1997).
5. *Searching for New Phenomena at High Excitation Energies in the $^3,^4\text{He}(e, e'p)$ Reactions*, invited talk to the 1997 American Physical Society Division of Nuclear Physics Workshop, Whistler, BC, Canada (October 1997).
4. *Studying Non-Nucleonic Degrees of Freedom through Out-of-Plane Electron Scattering*, invited seminar to the Argonne National Laboratory Physics Division, Argonne, IL (June 1997).
3. *New Ideas for η Production Experiments*, invited seminar to the University of New Hampshire Nuclear Group, Durham, NH (May 1996).
2. *η Meson Production at CEBAF*, invited seminar at the University of Saskatchewan Accelerator Laboratory, University of Saskatchewan, Saskatoon, SK (June 1996).
1. *Out-of-Plane Measurements at the MIT-Bates Linear Accelerator Laboratory*, contributed talk to the Second Workshop on Electromagnetically Induced Two-Nucleon Emission, Gent, Belgium (May 1995).

Invited Talks, Seminars, and Panels (Scholarship of Teaching)

30. *Making the Scholarship of Teaching and Learning public: Getting your SoTL work published*, 2-part invited panel presentation (joint with: D. Bateman, Champlain St-Lambert College; A. Pearson, U. of Western Ontario; K.L. Taylor, Dalhousie U.; J. Thompson, U. of Sask.; K. Meadows, U. of Western Ontario); 31st Annual Conference of the Society for Teaching and Learning in Higher Education, Saskatoon, SK (June 2011).
29. *Methodologies for Teaching First-Year Physics*, invited presentation to UPEI Physics Department; UPEI, Charlottetown, PEI (May 2011).
28. *How Do We Bridge the Gap Between High School and University?*, panel presentation (joint with: F. Rawle, U of Toronto; T. Antimirova, Ryerson U.; L. Kajiura, McMaster U.; R. Venkateswaran, U. of Ottawa; P. Lock, McMaster U.; J. Donev, U. of Calgary), Strategies for Success Workshop, Pearson Education; Toronto, ON (May 2011).
27. *Saint Mary's University: A Developing Partnership*, joint presentation (with M. Braswell, Director of Recruiting, SMU) to "Options and Opportunities Mid-Year Workshop", Nova Scotia Board of Education; Dartmouth, NS (December 2010).
26. *Atlantic Association of Universities Teaching Award Winners Retreat 2010*, co-facilitator (joint with P. Williams, Acadia University); University of PEI, Charlottetown, PEI (October 2010).
25. *Student Engagement: Creative Intersections - Part I: Technology Up Front*, invited plenary session panel presenter (joint with M. van Bommel, St. F.X. University, and E. Wells, Mount Allison University); for the 2008 Atlantic Association of Universities (AAU) Teaching Showcase, UNB-SJ, Saint John, NB (October 2008).

24. *Annual Meeting of the Atlantic University Presidents - AAU Teaching Award Winner Dinner*, invited presentation entitled “*The Importance of Good Teaching - and the Conflict it Reveals*”, Fredericton, NB (October 2008)
23. *MSVU Faculty Day Workshop - “From Pencils to Pixels and everything in between: Re-thinking our tool use for Teaching*”, invited Opening Speaker for Mount Saint Vincent University’s Teaching and Learning Center, MSVU, Halifax, NS (August 2008)
22. *Saint Mary’s University CAID Workshop - “Rules of Engagement: Whose Rules? Who’s Engaged?”*, invited panel facilitator and presenter for the SMU Center for Academic and Instructional Development workshop, SMU (August 2008).
21. *Physics Education Across the Continuum: Opening Doors at All Levels*, invited plenary talk to the Annual Congress of the Canadian Association of Physicists; Quebec City, PQ (June 2008).
20. *Measuring the Effectiveness of Clickers in a Physics Lecture*, contributed talk to the Annual Congress of the Canadian Association of Physicists, Division of Physics Education; Saskatoon, Sk (June 2007).
19. *A Modern Physicist’s View of Reality: Space, Time, and the Probabilistic Universe*, invited Guest Lecture for the SMU Philosophy Student Society (March 2007).
18. *Using Wireless Responders during Lectures: A Study and a Theory to assess Impact and Appropriate Use*, joint session presentation with R.J. Konopasky (Psychology Dept. SMU); for the 2006 Atlantic Association of Universities (AAU) Teaching Showcase, Memorial University of Newfoundland (October 2006).
17. *Wireless Responders: Measuring the Impact on Students’ Impressions... and Learning*, joint session presentation (in absentia) with presenter Dr. R.J. Konopasky (SMU Dept. of Psychology), and co-authors Hasan Tan (SMU undergraduate Psychology student); for the 10th Annual Dalhousie Conference on University Learning and Teaching (Halifax, NS; May 2006).
16. *Clickers at SMU: Experiences, Logistics, and Research*, invited presentation at a Mini-Symposium on *Clickers: Pedagogy and Technology* at Memorial University of Newfoundland, St. John’s, NL (May 2006).
15. *Embracing a Rising Trend in Teaching Technology: Implementation and Best-Practice Issues for Wireless Responders*, joint session presentation with K. Lightstone (Accounting Dept. SMU); for the 2005 Atlantic Association of Universities (AAU) Teaching Showcase, Nova Scotia Agricultural College, Truro, NS (22 October 2005).
14. *New Faculty Orientation - Identifying Issues / Sharing Ideas*, invited panel facilitator and presenter for the Saint Mary’s University New Faculty Orientation meeting, Halifax, NS (30 August 2005).
13. *Information & Training Session: Wireless Responders in SMU’s Classroom using eInstruction’s CPS*, faculty information/training session given jointly with Dr. K. Lightstone (SMU, Dept. of Accounting) (SMU, Halifax, NS; August 2005 and November 2005).
12. *Wireless Responders in First-Year Physics Lectures: Attempting to Assess Effectiveness*, invited presentation to the Division of Physics Education session of the Annual Congress of the Canadian Association of Physicists (University of British Columbia, Vancouver, BC; June 2005).
11. *Technology and Student Assistants: Catalysts for Strengthening the Links between the Research Lab, the Classroom, and the Community*, presentation to the McGraw-Hill Ryerson Teaching, Learning, and Technology Conference “Striking a Balance”; Mount Saint Vincent University, Halifax, NS (November 2004).
10. *Using Wireless Responders in Large First-Year Classes: the Potential for Enhancing Lecture Interactivity and Effectiveness*, invited Seminar given 2 times in 2004:
(i) Saint Mary’s University Department of Astronomy and Physics, Saint Mary’s University, Halifax, NS (October 2004);
(ii) Department of Physics and Physical Oceanography, and the Instructional Development Office, at Memorial University of Newfoundland, St. John’s, NL (19 July 2004).
9. *Provoking Information Processing during Lectures - Comparing Methodologies*, joint session presentation with Dr. R.J. Konopasky (SMU Dept. of Psychology) – with co-authors J.L. Throop (SMU undergraduate Psychology student), A. Konopasky (Tulane University, Dept. of Philosophy); for the 8th Annual Dalhousie Conference on University Learning and Teaching “Involving Students in Their Own Learning”, Halifax, NS (5-7 May 2004).
8. *OnLine Video Vignettes: Developing Analysis Skills across Disciplines*, joint session presentation with D.E. MacKenzie (Dalhousie University, School of Occupational Therapy); for the 2003 Atlantic Association of Universities (AAU) Teaching Showcase, University College of Cape Breton, Sydney, NS (24-25 October 2003).
7. *Technology Can Enhance Student Responding: Teaching Is a Dialogue*, presentation joint with Prof. Bob Konopasky (SMU, Dept. of Psychology) for the 7th Annual Dalhousie Teaching Conference (May 2003).

Invited Talks, Seminars, and Panels (Scholarship of Teaching) - continued

6. *Simple Technologies for Enhancing Interactivity and Effectiveness in Large First-Year Classes*, presentation given 2 times in 2002:
 - (i) invited session at the 2002 Atlantic Universities' (AAU) Teaching Showcase, University of Prince Edward Island, Charlottetown, PEI (26 October 2002);
 - (ii) invited colloquium for the Physics Department at the University of Saskatchewan, Saskatoon, SK (15 August 2002).
5. *Exciting Students about Excited Atoms*, presentation (both jointly with Dr. Malcolm Butler) for the Nova Scotia Association of Science Teacher "AST2002" Conference Day, QEII High School, Halifax, NS (25 October 2002).
4. *Simple Technologies for Enhancing Interactivity in Large Classes*, presentation given for the Saint Mary's University Workshop on *Technology in Teaching and Learning: Demonstrations and Discussions*, sponsored by the SMU Office of Instructional Development, Halifax, NS (20 February 2002).
3. *Exciting Students about Excited Atoms*, presentation given twice (both jointly with Dr. Malcolm Butler) for the Nova Scotia Association of Science Teacher "AST2001" Conference Day, QEII High School, Halifax, NS (October 2001).
2. *Plagiarism: A Science Faculty Perspective*, presentation given for the Saint Mary's University Workshop on *Plagiarism: Exploring the Issues*, sponsored by the SMU Office of Instructional Development and the SMU Quality of Teaching Committee, Halifax, NS (29 August 2001).
1. *Advice and Stories for New Faculty*, panel presentation given for the Saint Mary's University New Faculty Orientation meeting, Halifax, NS (28 August 2001).

Graduate Advisor

Dennis M. Skopik

*former Professor of Physics, University of Saskatchewan
current Deputy Associate Director of Physics, Jefferson Lab*

Post-Doctoral Advisor

W. Bertozzi

Professor of Physics, Massachusetts Institute of Technology

Professional Affiliations

Canadian Association of Physicists American Physical Society Canadian Institute for Nuclear Physics